

**ANNUAL GROUNDWATER MONITORING
AND CORRECTIVE ACTION REPORT FOR 2020
Coal Combustion Residuals Rule Groundwater Monitoring System Compliance
Cholla Power Plant
Navajo County, Arizona**

Submitted to:

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TABLE OF CONTENTS

	Page
GROUNDWATER MONITORING AND CORRECTIVE ACTION PROGRAM OVERVIEW	iv
1.0 INTRODUCTION	1
1.1 Site Background.....	1
1.1.1 Facility and CCR Unit Description	1
1.1.2 Environmental Setting	2
1.2 CCR Groundwater Monitoring System	5
1.2.1 Monitoring System Description.....	5
1.2.2 Implemented Changes to Monitoring System	7
2.0 GROUNDWATER MONITORING PROGRAM.....	7
2.1 Program Status	7
2.1.1 Summary of Key Actions Completed.....	7
2.1.2 Problems Encountered and Resolutions to Problems	9
2.1.3 Groundwater Monitoring Program Transitions.....	9
2.1.4 Alternative Source Demonstrations	9
2.2 Monitoring Data Collected.....	9
2.2.1 Water Level Monitoring	10
2.3 Statistical Analysis of Monitoring Data	12
2.3.1 Evaluation of Appendix III Constituent Data	12
2.3.2 Evaluation of Appendix IV Constituent Data	12
3.0 CORRECTIVE ACTION PROGRAM.....	13
3.1 Characterization of Potential Releases from CCR Units.....	13
3.2 Exposure Pathway Analysis and Risk Mitigation Plan.....	14
3.3 Corrective Measures Pre-Design Studies	14
3.4 Interim Response Measures.....	16
3.5 Notification to Landowners of Groundwater Impacts.....	17
3.6 Semiannual Progress Report on Remedy Selection for the FAP and BAP	17
3.7 CCR Unit Closure Activities.....	17
4.0 KEY ACTIVITIES FOR 2021.....	18
5.0 REFERENCES.....	20

List of Tables

Table 1-1	Description of Coal Combustion Residuals Units
Table 1-2	CCR Groundwater Monitoring System Summary
Table 2-1	Summary of BTVs and GWPSs for Site CCR Units
Table 2-2	Monitoring Event Summary for 2020
Table 2-3	Aquifer Properties and Groundwater Flow Calculations

List of Figures

Figure 1-1	Site Location Map
Figure 1-2	CCR Units and Groundwater Monitoring System Summary Map
Figure 2-1	Potentiometric Surface Map – April 2020
Figure 2-2	Potentiometric Surface Map – October 2020
Figure 3-1	Arsenic Iso-Concentration Map for the FAP
Figure 3-2	Fluoride Iso-Concentration Map for the FAP
Figure 3-3	Lithium Iso-Concentration Map for the FAP
Figure 3-4	Molybdenum Iso-Concentration Map for the FAP
Figure 3-5	Plan View Map for FAP Cross Sections
Figure 3-6	FAP Cross Section F-F'
Figure 3-7	FAP Cross Section G-G'
Figure 3-8	FAP Cross Section H-H'
Figure 3-9	Cobalt Iso-Concentration Map for the BAP
Figure 3-10	Plan View Map for BAP Cross Sections
Figure 3-11	BAP Cross Section A-A'
Figure 3-12	BAP Cross Section B-B'
Figure 3-13	BAP Cross Section C-C'
Figure 3-14	BAP Cross Section E-E'

List of Appendices

Appendix A	Groundwater Elevation Data and Hydrographs
Appendix B	Analytical Laboratory Reports
Appendix C	2020 Data Validation Report
Appendix D	Groundwater Quality Data Tables
Appendix E	Wood Technical Memorandum Documenting a Statistical Analysis of Appendix III Constituent Data Collected from the BAM through October 2019
Appendix F	Wood Technical Memorandum Documenting a Statistical Analysis of Appendix III Constituent Data Collected from the BAM through May 2020
Appendix G	Wood Technical Memorandum Documenting the Statistical Analysis of Appendix IV Constituent Data Collected from the SEDI through November 2019
Appendix H	Wood Technical Memorandum Documenting a Statistical Analysis of Appendix IV Constituent Data Collected from the SEDI through April 2020
Appendix I	Arizona Department of Water Resources Wells 55 Registry Reviews
Appendix J	Wood Report Documenting Corrective Measures Pre-Design Studies at the FAP
Appendix K	Wood Technical Memorandum Documenting a Cobalt Leaching Evaluation at the BAP
Appendix L	Wood Technical Memorandum Documenting a Dewatering Projection for the BAP
Appendix M	Site CCR Groundwater Monitoring System Notifications
Appendix N	Wood Semiannual Report Documenting Progress of Remedy Selection for the FAP and the BAP

List of Acronyms and Abbreviations

§	Section
Annual Report	Annual Groundwater Monitoring and Corrective Action Report
ACM	Assessment of Corrective Measures
ADWR	Arizona Department of Water Resources
AMEC	AMEC Environment & Infrastructure, Inc.
amsl	above mean sea level
APS	Arizona Public Service
ASD	Alternative Source Demonstration
BAM	Bottom Ash Monofill
BAP	Bottom Ash Pond
BTV(s)	Background Threshold Value(s)
CCR	coal combustion residuals
CCR units	CCR landfills and surface impoundments
CFR	Code of Federal Regulations
Cholla	Cholla Power Plant
CSM	Conceptual Site Model
FAP	Fly Ash Pond
ft	foot, feet
GWPS(s)	Groundwater Protection Standard(s)
I-40	Interstate 40
MCL	Maximum Contaminant Level
mg/L	milligrams per liter
SAP	Sampling and Analysis Plan
SEDI	Sedimentation Pond
SSI(s)	statistically significant increase(s)
SSL(s)	statistically significant level(s)
TestAmerica	Eurofins TestAmerica Laboratories, Inc.
USEPA	United States Environmental Protection Agency
Wood	Wood Environment & Infrastructure Solutions, Inc.



GROUNDWATER MONITORING AND CORRECTIVE ACTION PROGRAM OVERVIEW				
Facility Name:	Arizona Public Service Cholla Power Plant		Annual Report Date:	1/31/2021
Location:	Navajo County, Arizona		Reporting Period:	1/1/2020 – 12/31/2020
Groundwater Monitoring Program Status				
CCR Unit	Status at Beginning of Reporting Period	Status at End of Reporting Period	Date(s) of Any Program Transitions	Comments
Fly Ash Pond (FAP)	Assessment Monitoring	Assessment Monitoring	2/12/2018	Progressing Activities Supporting Remedy Selection
Bottom Ash Pond (BAP)	Assessment Monitoring	Assessment Monitoring	2/12/2018	Progressing Activities Supporting Remedy Selection
Sedimentation Pond (SEDI)	Assessment Monitoring	Assessment Monitoring	5/16/2018	-
Bottom Ash Monofill (BAM)	Detection Monitoring	Detection Monitoring	N/A	-
Groundwater Monitoring Statistical Analysis Summary				
CCR Unit	Appendix III Constituent(s) with SSLs over Background	Monitoring Wells where SSLs over Background have been Observed	Appendix IV Constituent(s) Present at SSL(s) above GWPSs	Monitoring Wells where SSLs above GWPSs have been Observed‡
Fly Ash Pond (FAP)	B, Ca, Cl, F, pH	M-50A, M-51A, W-123	As, Co*, F, Li, Mo,	M-50A, M-51A, W-123
Bottom Ash Pond (BAP)	B, Ca, F, pH, SO ₄ , TDS	M-52A, M-53A, W-305, W-306, W-314	Co, Li*	M-52A, M-53A, W-305, W-306, W-314
Sedimentation Pond (SEDI)	B, pH, SO ₄	M-56A, M-57A	None	None
Bottom Ash Monofill (BAM)	None	None	None	None
Corrective Action Summary				
CCR Unit	Dates when the ACM was Initiated and Completed	Date of Public Meeting Discussing the ACM	Date when Remedy was Selected	Dates when Remedy was Initiated and Completed
Fly Ash Pond (FAP)	2/13/2019; 6/14/2019	N/A	N/A	N/A
Bottom Ash Pond (BAP)	2/13/2019; 6/14/2019	N/A	N/A	N/A
Sedimentation Pond (SEDI)	N/A	N/A	N/A	N/A
Bottom Ash Monofill (BAM)	N/A	N/A	N/A	N/A
<u>Abbreviations:</u> ACM – Assessment of Corrective Measures CCR – Coal Combustion Residuals GWPS – Groundwater Protection Standard SSI – statistically significant increase SSL – statistically significant level N/A – Not Applicable				
* Removed as a constituent of concern based on a successful Alternative Source Demonstration ‡ Only includes wells where statistical analyses have been performed (i.e., CCR Monitoring Wells)				

1.0 INTRODUCTION

This *Annual Groundwater Monitoring and Corrective Action Report for 2020* (Annual Report) was prepared on behalf of Arizona Public Service (APS) by Wood Environment & Infrastructure Solutions, Inc. (Wood) for the Cholla Power Plant (Cholla or the Site) located in Navajo County, Arizona. The Annual Report summarizes groundwater monitoring and corrective action data collected to support compliance with coal combustion residuals (CCR) groundwater monitoring and corrective action requirements detailed in 40 Code of Federal Regulations (CFR) Sections (§) 257.90 through 257.98 (herein referred to as the CCR Rule) (Federal Register, 2018).

The CCR Rule became effective on October 19, 2015 and established standards for the disposal of CCR in landfills and surface impoundments (CCR units). In particular, the CCR Rule set forth groundwater monitoring and corrective action requirements for CCR units. The CCR Rule includes the requirement that an “annual groundwater monitoring and corrective action report” be prepared by January 31 for the preceding calendar year (the reporting period). This Annual Report prepared for the 2020 calendar year is intended to document the status of the groundwater monitoring and corrective action programs for each CCR unit, summarize key actions completed, and forecast key activities for 2021. APS additionally considers this report to meet the semiannual reporting requirement of 40 CFR §257.97(a) for selecting and designing remedies pursuant to the CCR Rule during the last half of 2020.

The remainder of this section (Section 1.0) provides a summary description of the power generating facility, the CCR units present at the facility, and the facility’s environmental setting which forms the basis for assessment of underlying groundwater conditions. Sections 2.0 and 3.0 present groundwater monitoring and corrective action activities performed during the reporting period, respectively. Key activities identified for the upcoming year are presented in Section 4.0. Section 5.0 presents report references.

1.1 Site Background

1.1.1 Facility and CCR Unit Description

Facility Description. Cholla is a coal-fired power plant that had three electric generating units (Units 1, 3, and 4) in operation during 2020. Units 1 and 3 with a combined nameplate capacity of 425.9 megawatts are owned and operated by APS. PacifiCorp owns Unit 4 with a nameplate capacity of 414 megawatts; this unit was retired as of December 24, 2020. Coal burned at the plant was previously sourced from the McKinley Mine in New Mexico. When the McKinley Mine closed in 2009, the source of coal switched to the Lee Ranch and El Segundo mines near Grants, New Mexico.

Facility Location. The plant and associated infrastructure are located on land owned/leased by APS adjacent to Interstate 40 (I-40) between the City of Winslow and the City of Holbrook in Navajo County, Arizona (Figure 1-1). The plant sits next to Cholla Reservoir, a cooling pond for Unit 1 and water storage reservoir for the plant that was originally constructed in the early 1900s by the Joseph City Irrigation Company (Shilling, 2005) but was more recently configured in its current location and design by APS in 1961. Cholla Reservoir receives deliveries of groundwater pumped from the nearby Cholla Well Field extracting from the Coconino Sandstone Aquifer. The typical water surface elevation of Cholla Reservoir is 5,022 feet (ft) above mean sea level (amsl).

CCR Unit Description. Plant infrastructure includes four single CCR units referred to as the Fly Ash Pond (FAP), Bottom Ash Pond (BAP), Bottom Ash Monofill (BAM), and Sedimentation Pond (SEDI). All the CCR units except the SEDI are located north of I-40 (Figure 1-2). The SEDI was the first of the CCR Units placed

into service in 1976. The FAP and BAP dams were completed in 1978, and the BAM came into operation in the late 1990s. Table 1-1 summarizes the location, function, operation, size/construction, and history of each unit. The boundaries of CCR units depicted in Figure 1-2 are based on available historical plans for the units.

1.1.2 Environmental Setting

Unless otherwise noted, the following information is abstracted from Montgomery & Associates (2011), Montgomery & Associates (2017), and AMEC Environment & Infrastructure, Inc. (2012).

Climate. The plant is located in an arid climate within the Little Colorado River Basin. The area receives an average of 6 to 12 inches of precipitation annually. The evaporation rate exceeds the rate of precipitation by an order of magnitude.

Topography. Cholla is located at an average elevation of approximately 5,025 ft amsl in the Colorado Plateau physiographic province of northeastern Arizona. This area is characterized by canyons, high elevations, and narrow, widely spaced riverbeds. The topography of the plant area is characterized by rolling terrain, open vistas, and incised drainages/arroyos. In the vicinity of the plant, the ground surface gently slopes towards the Little Colorado River to the south at approximately 60 ft per mile; however, surface drainage immediately near Cholla Reservoir flows towards the reservoir. About two miles north and south of the plant, the ground surface rises out of the alluvial floodplain to an elevation of 5,100 to 5,200 ft amsl.

Surface Water Hydrology. The plant is located north of the Little Colorado River within the Middle Little Colorado watershed. The Little Colorado River is a meandering, perennial stream with intermittent reaches in a large alluvial floodplain.

Site Geology. The Colorado Plateau, on which the plant is located, is typified by horizontal layered sequences of sedimentary rock, primarily sandstones, siltstones, and claystones. At the plant and nearby CCR units, the uppermost geologic units that are expected to influence groundwater flow and contribute to variations in naturally occurring constituent concentrations across the site are as follows (in descending order):

- Little Colorado River and Tanner Wash Alluviums: These quaternary surface alluviums overlie the bedrock formations in localized areas at Cholla and surrounding CCR units. The alluvium is unconsolidated, heterogeneous, and consists of clay, silt, sand, and gravel. In general, the Tanner Wash Alluvium is finer grained than the Little Colorado River Alluvium. The alluvium ranges in thickness from non-existent to approximately 200 ft, and in general is thickest underneath the plant and Cholla Reservoir. Around the CCR units, the alluvium ranges from approximately 50 ft thick in the vicinity of the FAP Dam to 100 ft thick in the vicinity of the southern BAP Dam.
- Moenkopi Formation: The Moenkopi Formation is the uppermost geologic unit beneath the plant and the CCR units (as depicted in Figure 1-2) and is present at land surface in areas where the alluvium is non-existent. The thickness of the Moenkopi Formation near the plant ranges from non-existent to over 300 ft; where it is sufficiently thick, the Moenkopi Formation acts as an aquitard between the shallow alluvial aquifer and the underlying Coconino Sandstone Aquifer. The Moenkopi Formation consists of three members, described below:
 - Holbrook Member: this is a relatively permeable, well-consolidated sandstone. The Holbrook Member is the uppermost member of the Moenkopi Formation and is not known to be present in the subsurface in the vicinity of the plant.

- Moqui Member: this is the primary confining unit within the Moenkopi Formation and consists of maroon and greenish mudstone with abundant gypsum. The Moqui Member is approximately 250 to 300 ft thick near the plant.
- Wupatki Member: this is the lowest member of the Moenkopi Formation and is approximately 30 to 50 ft thick. The Wupatki Formation is comprised of relatively permeable sandstone and is in hydraulic connection with the underlying Coconino Sandstone.
- Coconino Sandstone: The Permian-age Coconino Sandstone is the principal lithologic unit of the C-aquifer, a regionally important aquifer for water supply. It is composed of very fine- to fine-grained sandstone with variable permeability depending on the degree of fracturing and cementation. The unit is approximately 375 to 400 ft thick in the vicinity of the plant.
- Schnebly Hill Formation: The Schnebly Hill Formation is a very fine-grained, reddish sandstone that is about 300 to 350 ft thick near the plant. It is part of the C-aquifer, but its hydraulic conductivity is about 10 to 28 percent that of the Coconino Sandstone.
- Supai Formation: The Pennsylvanian to Lower Permian Supai Formation underlies the Coconino Sandstone. It has minimal impact on the surface operations of Cholla, other than containing an approximately 600-ft thick deposit of halite and anhydrite in the Cholla well field area that impacts groundwater quality both regionally and in the vicinity of the plant.

Applicable Hydrostratigraphy. Two hydrostratigraphic units are conceptualized beneath the plant and associated CCR units. These units form the basis for the hydrogeologic Conceptual Site Model (CSM) developed by Montgomery & Associates (2011 and 2017) for the purpose of evaluating compliance wells for the CCR Groundwater Monitoring System.

The first hydrogeologic unit, the Lower Colorado and Tanner Wash Alluvial Aquifers, is present under the plant area, Cholla Reservoir, and the Tanner Wash and Little Colorado River drainage channels adjacent to the BAP and FAP, respectively. The alluvial aquifer in this area receives recharge from the Little Colorado River, Tanner Wash, and any leakage through anthropogenic features such as the reservoir and the nearby Joseph City Canal. The alluvial aquifer is not used as a drinking water supply but does support a riparian habitat along natural surface water channels. Depth to water in the alluvial aquifers ranges from several ft to several tens of ft below land surface in the Cholla area, varying spatially based on proximity to recharge sources and topography, and seasonally based on rainfall-runoff patterns. Where present, groundwater flows generally in the downstream direction of the drainages under which it is present, that is, east to west in the Little Colorado River alluvium and north to south in the Tanner Wash alluvium. Groundwater flow in the Little Colorado River alluvial aquifer is also influenced by deeper paleochannels that may not coincide with the present river channel.

The second hydrogeologic unit is the C-aquifer, which consists of the Coconino Sandstone and Schnebly Hill Formation in the vicinity of the plant. Groundwater in this aquifer is under confined conditions in areas north of the Little Colorado River where the Moqui member of the Moenkopi Formation acts as a confining bed. Groundwater movement in the C-aquifer is generally to the north. However, the Cholla well field (southwest of the plant) has created a cone of depression that has made the localized groundwater flow in a westerly direction in that area. Near the FAP, the inferred flow of the groundwater in the C-aquifer is to the west or northwest, possibly due to the broad, northwest-trending anticline that extends from the vicinity of the FAP to near Joseph City.

The alluvial aquifer and the C-aquifer are separated by the Moenkopi Formation, a regional aquitard that creates a barrier between the two aquifers in the vicinity of Cholla where the unit is sufficiently thick. In areas where the C-aquifer in the Coconino Sandstone is confined (primarily north of the Little Colorado River), the Wupatki member of the Moenkopi has been observed to be water-bearing; however, the Moqui member, which is generally 250 to 300 ft thick in the vicinity of the plant, prevents hydraulic connection between the alluvial aquifer and the C-aquifer and is effectively bedrock when considering water quality conditions and groundwater movement in a significant portion of the alluvial aquifer. Investigations recently conducted by APS have indicated limited saturation occurs in the uppermost portions of the Moqui downgradient of the BAP and FAP.

Uppermost Aquifer by CCR Unit. The CCR Rule requires that the uppermost aquifer underlying each CCR unit be monitored to evaluate potential impacts from the unit. At Cholla, the uppermost aquifer by unit is as follows:

- FAP (Little Colorado River Alluvium): The FAP is constructed primarily on the relatively impermeable Moenkopi Formation; however, alluvial sediments are present in the vicinity of the FAP. The FAP dam has a clay core that extends through the alluvium to bedrock where the alluvium was less than 20 ft thick at the time of dam construction. In the middle where the alluvium was greater than 20 ft thick, a cutoff wall was constructed that generally extended to bedrock. Groundwater at the toe of the FAP dam flows west-southwest primarily through shallow alluvial sediments (which are fairly fine grained) and then merges with the Little Colorado River Alluvium where the predominant direction of groundwater flow is to the west. Localized saturation also occurs in the uppermost portion of the Moenkopi Moqui near the FAP dam.
- BAP (Tanner Wash Alluvium): The BAP is located in the Tanner Wash drainage area. The northern and western abutments of the BAP dam are constructed on the Moenkopi Formation, whereas the length of the southern portion of the dam is constructed predominantly on alluvial material. The BAP dams have a clay core that extend through the alluvium to bedrock where the alluvium was less than 20 ft thick at the time of dam construction. In regions where the alluvium was greater than 20 ft thick, a cutoff wall was constructed that generally extended to bedrock. Due to the depths involved, the cutoff wall does not extend to bedrock in the middle of the channel underlying the southern dam. There is an approximately 10 to 20-ft thick layer of alluvium below the base of the cutoff wall in this region (at an elevation of 4,980 ft above mean sea level). Groundwater near the BAP flows south-southwest primarily through the Tanner Wash Alluvium to its confluence with the Little Colorado River Alluvium. Near the southern BAP dam, groundwater flows within the weathered uppermost portion of the Moenkopi Moqui.
- BAM (Coconino Sandstone): The BAM is a CCR landfill constructed in the Tanner Wash watershed. It is constructed on the Moenkopi Formation where no saturated alluvium is present; water levels from nearby wells indicate that the Moenkopi is unsaturated beneath the BAM. Therefore, the uppermost hydrogeologic unit at the BAM is the Coconino Sandstone Aquifer which exists under confined conditions more than 300 ft bgs in the vicinity of the BAM. Groundwater in the Coconino Aquifer beneath the BAM flows to the north-northwest.
- SEDI (Little Colorado River Alluvium): The SEDI is constructed on the Little Colorado River Alluvium. Groundwater near the SEDI flows parallel to the direction of Little Colorado River surface flows, approximately to the southwest.

1.2 CCR Groundwater Monitoring System

Multiple monitoring well systems are in place at Cholla to monitor groundwater conditions beneath the four site CCR units and support ongoing assessment of impacts from potential leakage. Table 1-2 identifies each well with associated CCR unit information, the date of well installation, and well construction details. Figure 1-2 presents a map of the well locations.

Installation of these networks is summarized in the *Cholla Power Plant Coal Combustion Residuals Program – Design, Installation, and Evaluation of Completeness of Groundwater Monitoring Networks* (CCR Groundwater Monitoring System Certification Report) and is identified as compliant with 40 CFR §257.91(a) through (e) (Montgomery & Associates, 2017). Per the CCR Rule, site monitoring systems are required to evaluate groundwater quality that is representative of background (i.e., groundwater that has not been affected by leakage from a CCR unit) and groundwater passing the downgradient boundary of each CCR unit in the uppermost water-bearing hydrostratigraphic unit underlying the CCR unit.

1.2.1 Monitoring System Description

Background Groundwater Monitoring Wells. Background groundwater quality at the site can be established by a single monitoring well or a group of monitoring wells. If a group of monitoring wells is used, these wells should be screened within the same lithologic unit, exhibit similar groundwater chemistry, illustrate similar statistical merits, and be supported by the CSM. The grouping and adequacy of background wells identified for Cholla to assess background water quality are assumed adequate until proven otherwise.

Per the *CCR Groundwater Monitoring System Certification Report*, the following monitoring wells are designated as “background monitoring wells” for the respective geologic and hydrostratigraphic conditions underlying Cholla (Montgomery & Associates, 2017):

- Background Wells for the FAP and the BAP (Little Colorado River and Tanner Wash Alluvium): The upgradient boundary of the FAP rests on a thick section of the Moenkopi Formation; there is no saturated alluvium present in the area upgradient from the FAP boundary. Therefore, background well M-64A was installed west of the plant in the Little Colorado River floodplain to serve as a background well for FAP. The BAP, in the Tanner Wash alluvium, discharges to and is hydraulically connected to the Little Colorado River alluvium. Because hydrogeologic conditions at the BAP prevented installation of an upgradient background well (as they did at the FAP), M-64A also serves as the background well for the BAP. Travel time calculations performed for the *CCR Groundwater Monitoring System Certification Report* (Montgomery & Associates, 2017) indicated that M-64A is located far enough downgradient from the FAP and the BAP to represent unimpacted groundwater; however, it is notable that selection of this background well location is not ideal and has the potential to promote spatial heterogeneity issues in statistical data analysis.
- Background Wells for the SEDI (Little Colorado River Alluvium): The groundwater flow direction in the vicinity of the SEDI is to the west-southwest. Background well M-62A is installed in the alluvium on the east (upgradient) side of the SEDI.
- Background Wells for the BAM (Coconino Sandstone): The groundwater flow direction in the Coconino Sandstone Aquifer in the vicinity of the BAM is to the north-northwest. Background well M-54 is installed in the Coconino Sandstone on the southeast (upgradient) side of the BAM.

Due to the natural heterogeneity of the geologic and hydrogeologic conditions underlying Cholla, background constituent concentrations are expected to be spatially heterogeneous (varying) across the site.

The site is also expected to exhibit both spatial and temporal heterogeneity attributable to local climatic regimes, potential leakage from Cholla Reservoir, and potential operational activity at the site. The groundwater monitoring well networks, respective to sampling coverage and frequency, appear to adequately represent this spatial and temporal heterogeneity, pending further review.

Downgradient CCR Monitoring Wells. A total of 17 CCR compliance wells are in place at the site to monitor the downgradient groundwater conditions of each CCR unit (Table 1-2). Twelve of these monitoring wells are installed in either the Little Colorado River or Tanner Wash Alluvium. Two of these monitoring wells, W-123 and M-52A, were previously identified as alluvial monitoring wells but are now inferred to be partially completed in the Moqui Member of the Moenkopi Formation based on site investigations conducted in 2019 and 2020 (Section 3.3). The three remaining downgradient wells are completed in the Coconino Sandstone. The grouping of monitoring wells, spatial density, and coverage of the monitoring well network is assumed representative and adequate until proven otherwise (Figure 1-2). These wells are grouped by respective CCR unit, as described below:

- **FAP Downgradient Wells (Little Colorado River Alluvium):** The groundwater flow direction in the alluvium downgradient of the FAP dam (i.e., the waste boundary) is west-southwest. The alluvial thickness in this area is limited; in some places it may be up to 50 ft thick but in others it is non-existent. On this basis, three downgradient wells were initially designated for the FAP boundary. The three downgradient boundary wells are named W-123, M-50A, and M-51A. A cone penetrometer test investigation conducted at the FAP during the reporting period suggests that W-123 is partially completed in the Moqui Member of the Moenkopi Formation (Section 3.3). In 2018, three additional wells were installed to evaluate groundwater conditions downgradient of the FAP. These wells are identified as MW-65A, MW-66A, and MW-67A. With the exception of W-123, the FAP downgradient wells are screened within the Little Colorado River Alluvium.
- **SEDI Downgradient Wells (Little Colorado River Alluvium):** The groundwater flow direction in the alluvium underlying the SEDI is to the west-southwest. Three downgradient wells were designated for the SEDI: M-56A, M-57A, and M-58A; these are screened within the Little Colorado River Alluvium.
- **BAP Downgradient Wells (Tanner Wash Alluvium and Moenkopi Moqui):** The groundwater flow direction in the alluvium underlying the BAP is generally to the southwest along Tanner Wash; however, there is a radial component of groundwater flow towards the east-southeast due to hydraulic head from the BAP. Five downgradient monitoring wells are designated for the BAP: M-52A, M-53A, W-305, W-306, and W-314; these are identified as screened in the Tanner Wash Alluvium based on well log information, but a drilling investigation conducted in 2019 indicated that M-52A is partially completed in the weathered upper portion of the Moenkopi Moqui (Wood, 2020a).
- **BAM Downgradient Wells (Coconino Sandstone):** The uppermost hydrogeologic unit underlying the BAM is the C-aquifer in the Coconino Sandstone, which flows towards the north-northwest in this vicinity. Three downgradient monitoring wells were installed to monitor the quality of groundwater passing the waste boundary of the BAM. These wells are named M-59, M-60, and M-61, and they are completed in the Coconino Sandstone.

Supplementary Site Monitoring Wells. There are many groundwater monitoring wells at the site that are not part of the CCR groundwater monitoring system but may provide useful information to the program, particularly in the region downgradient of the FAP and BAP. Figure 1-2 identifies these wells.

1.2.2 Implemented Changes to Monitoring System

Although not identified as monitoring wells, four new extraction wells were installed at the southeastern toe of the FAP in December 2020 that will provide additional groundwater quality information in this vicinity. The new wells will be incorporated into the FAP seepage intercept system. The new extraction wells are discussed further in Section 3.3.

2.0 GROUNDWATER MONITORING PROGRAM

The groundwater monitoring and corrective action process defined in the CCR Rule includes a phased approach to groundwater monitoring, leading (if applicable) to the establishment of groundwater protection standards (GWPSs) for each CCR unit. Exceedances of the GWPSs that are determined to be statistically significant can trigger requirements for additional groundwater characterization and corrective action assessment followed by implementation.

The first phase of groundwater monitoring is the detection monitoring phase. This phase focuses on a set of constituents (listed in Appendix III of the CCR Rule) that are the more mobile constituents associated with CCR and therefore represent indicators of possible impacts from CCR in groundwater. If statistically significant increases (SSIs) over Appendix III constituent background threshold values (BTVs) are detected in the downgradient boundary wells and cannot be demonstrated to be associated with a source other than the CCR unit, then groundwater monitoring moves into the second phase, assessment monitoring. Table 2-1 summarizes the Appendix III constituent BTVs established for site CCR units.

The second phase of groundwater monitoring focuses on the constituents listed in Appendix IV of the CCR Rule. The Appendix IV constituents generally are less mobile and occur at lower concentrations in groundwater than the Appendix III constituents. Concentrations of Appendix IV constituents in downgradient wells are compared to GWPSs. The GWPSs, established for Appendix IV constituents only, are the higher of either the federal Safe Drinking Water Act Maximum Contaminant Level (MCL), alternative risk-based GWPSs established in the CCR Rule, or the background concentration for each constituent. Table 2-1 summarizes the Appendix IV constituent GWPSs established for site CCR units.

If exceedances of the GWPSs are determined to be occurring in the downgradient boundary wells at statistically significant levels (SSLs) and no alternative sources for the exceedances can be demonstrated, then both additional groundwater characterization and assessment of corrective actions are initiated. Following assessment of corrective measures, a remedy (or set of remedial activities) is selected and implemented as the groundwater corrective action program for the CCR unit. According to the CCR Rule, groundwater corrective action will continue until compliance with the GWPSs has been attained in all impacted wells and sustained for a period of three consecutive years.

2.1 Program Status

2.1.1 Summary of Key Actions Completed

A summary of key actions conducted at the Site in 2020 to address CCR Rule requirements is as follows:

- Documentation of Groundwater Monitoring Activities Conducted in 2019 - 40 CFR §257.90(e) requires that an Annual Groundwater Monitoring and Corrective Action Report for applicable sites be prepared for existing CCR units annually on January 31 of the following year. During the reporting period, APS prepared the *Annual Groundwater Monitoring and Corrective Action Report*

for 2019 (Wood, 2020a), placed the report in the facility's operating record, and posted the report to APS's CCR information webpage in accordance with 40 CFR §257.105(h)(1) and 40 CFR §257.106(h)(1).

- Continuation of the Detection Monitoring Program at the BAM – 40 CFR §257.94(b) requires the continuation of detection monitoring at a semiannual frequency for Appendix III constituents at CCR units where statistical analysis of Appendix III constituent data do not indicate an SSI over background. Section 2.2 summarizes detection monitoring activities conducted during the reporting period.
- Statistical Analyses of Appendix III Constituents at the BAM – For CCR units in the detection monitoring program, 40 CFR §257.93(h) requires the evaluation of groundwater monitoring data for SSIs over background of Appendix III constituents no later than 90 days after completing the associated sampling and analysis. During the reporting period, APS performed two statistical analyses using updated analytical data for Appendix III constituents at BAM monitoring wells. The statistical analyses are summarized in Section 2.3.1.
- Continuation of the Assessment Monitoring Program at the SEDI - 40 CFR §257.95(b) and (d)(1) require the continuation of assessment monitoring annually for Appendix IV constituents and semiannually for Appendix III and detected Appendix IV constituents at CCR units where statistical analysis of Appendix III constituents indicate an SSI over background. Section 2.2 summarizes assessment monitoring activities conducted during the reporting period.
- Statistical Analyses of Appendix IV Constituents at the SEDI – For CCR units in the assessment monitoring program, 40 CFR §257.93(h) requires the statistical evaluation of groundwater monitoring data for exceedances of Appendix IV constituents no later than 90 days after completing the associated sampling and analysis. During the reporting period, APS performed two statistical analyses using updated Appendix IV constituent data collected from SEDI monitoring wells. The statistical analyses are summarized in Section 2.3.2.
- Characterization of the Nature and Extent of Releases from the FAP and the BAP – 40 CFR §257.95(g)(1) requires characterization of the nature and extent of releases from CCR units where one or more Appendix IV constituents exceed GWPSs at SSLs. Section 3.1 summarizes characterization activities performed during the reporting period to address this requirement.
- Pre-Design Studies Necessary for Remedy Selection – During the reporting period, APS performed several pre-design studies necessary to support the selection and design of remedies for the FAP and the BAP. The pre-design studies are summarized in Section 3.3.
- Preparation of a Semiannual Progress Report on Remedy Selection for the FAP and the BAP - 40 CFR §257.97(a) requires the preparation of semiannual reports which document the progress of remedy selection for CCR units that have impacted groundwater. During the reporting period, APS prepared the third semiannual report to fulfill this requirement in July 2020 (Section 3.6).
- Initiation of SEDI Closure – During the reporting period, APS initiated closure of the SEDI pond in accordance with 40 CFR §257.101. Closure activities included a revision of the closure plan, the construction of a SEDI replacement tank, cessation of flows to the SEDI, and partial excavation of CCR from the SEDI. The SEDI closure activities are discussed further in Section 3.7.
- Preparation of an Alternative Closure Demonstration – APS plans to cease coal-fired boiler operations at the Plant no later than April 2025 and close the FAP and BAP by October 17, 2028. Pursuant to 40 CFR §257.103(f)(2), APS prepared a demonstration supporting a site-specific deadline to initiate closure of the FAP and BAP during the reporting period. The demonstration,

which documents that all applicable criteria are met for qualification under the alternative closure provision, was submitted to the United States Environmental Protection Agency (USEPA) on November 30, 2020.

2.1.2 Problems Encountered and Resolutions to Problems

Problems encountered during the reporting period and associated resolutions include:

- Elevated Reporting Limits for Lithium at the SEDI – For the second quarterly CCR groundwater monitoring event at the SEDI, the analytical laboratory did not achieve lithium reporting limits below the GWPS established for lithium at the SEDI. To resolve this issue, APS has communicated the minimum requirements for reporting limits to the analytical laboratory and will ensure the laboratory achieves adequate reporting limits during future analyses of groundwater samples.

2.1.3 Groundwater Monitoring Program Transitions

No CCR unit monitoring program transitions occurred during the reporting period.

2.1.4 Alternative Source Demonstrations

No alternative source demonstrations (ASDs) were performed during the reporting period.

2.2 Monitoring Data Collected

APS conducted two CCR groundwater monitoring events at Cholla during the reporting period in accordance with the Sampling and Analysis Plan (SAP) developed for the Site (Montgomery & Associates, 2015). The SAP documents the methods and procedures used to conduct groundwater sampling, analyze collected samples for CCR constituents, and assess associated analytical data for quality assurance purposes. APS also collected supplementary groundwater and seep water samples as part of pre-design studies performed during the reporting period (Section 3.3) which include:

- Groundwater samples collected during aquifer tests at FAP monitoring wells (Section 3.3);
- Seepage water samples collected from seepage collection sumps and seepage extraction wells at the FAP (Section 3.3);
- A seep water sample collected from Tanner Wash Seep at the BAP.

As with the CCR groundwater samples, the additional samples were collected and analyzed using industry-standard procedures and in accordance with the SAP.

The following sections summarize results of the monitoring activities conducted in 2020. Table 2-1 identifies when monitoring occurred, and which units were monitored. During the reporting period, detection monitoring included evaluation of collected samples for Appendix III constituents on a semiannual basis (40 CFR §257.94[b]) and assessment monitoring included evaluation of collected samples for all Appendix IV constituents on an annual basis (40 CFR §257.95[b]) and detected Appendix IV constituents as well as all Appendix III constituents on a semiannual basis (40 CFR §257.95[d][1]).

2.2.1 Water Level Monitoring

Figures 2-1 and 2-2 present potentiometric surface maps created using water-level measurements collected prior to the second quarter (April 2020) and fourth quarter (October 2020) groundwater monitoring events. Groundwater elevations collected from monitoring wells at each CCR unit are evaluated and plotted independently based on the CSM. The estimated flow directions inferred from the groundwater elevation data are depicted on the figures. As indicated, groundwater in the alluvium appears to flow south to southwest from the FAP and the drainage area associated with Tanner Wash (where the BAP is located), towards the Little Colorado River, where groundwater generally flows to the west (consistent with surface water flows). Groundwater in the C-aquifer underlying the BAM flows to the north.

Appendix A presents hydrographs of groundwater elevations measured at CCR compliance wells over time. The groundwater elevations measured during the reporting period are relatively stable and consistent with historical observations. In general, seasonal fluctuations are apparent from the water-level data, with higher water levels occurring in the spring (e.g., March through May) and lower water levels occurring in late-summer through fall (e.g., August through October).

Notable observations for groundwater conditions at each CCR unit are discussed below.

- FAP: There is a fairly steep hydraulic gradient at the edges of the FAP dam where no cutoff wall is present. Farther downgradient, groundwater elevations in M-46A, MW-67A, and MW-63A indicate that the hydraulic gradient begins to flatten with increased distance from the FAP. Wells M-49A and W-127 were noted to be dry in April and October 2020.
- BAP: Groundwater elevations at M-53A (located at the western abutment of the southern BAP dam) and W-314 (located downgradient of the eastern side of the BAP dam) are approximately 10 ft higher than groundwater elevations in wells located towards the central portion of the southern BAP dam (i.e. M-52A, W-305, and W-306), indicating a steep hydraulic gradient near the edge of the BAP. A decreasing trend in water levels is occurring at W-314 relative to the other BAP wells.
- BAM: Groundwater elevations in the C-aquifer monitoring wells continue to indicate a slightly increasing trend over time.
- SEDI: The hydraulic gradient beneath the SEDI is relatively flat in comparison to the FAP and the BAP, and a slightly increasing trend in groundwater elevations is apparent from the water-level data.

2.2.2 Groundwater Flow Rate Estimation

The CCR Rule requires that groundwater flow rates beneath CCR units be estimated during each monitoring event. The water levels measured in April and October 2020 (Figures 2-1 and 2-2) were used to calculate the direction and magnitude of the hydraulic gradient in the vicinity of each unit using a spreadsheet tool available on the USEPA website (USEPA, 2014). Darcy's Equation for flow through porous media was then used with site data (where available) and/or literature-based hydraulic conductivity and effective porosity values for hydrogeologic units to estimate average linear groundwater flow velocities. Table 2-2 identifies the wells, hydraulic conductivities, and porosities used in the analysis and presents the calculated groundwater flow directions, gradients, and flow velocities.

For the Tanner Wash Alluvium downgradient of the BAP, the hydraulic gradient was relatively consistent during the reporting period, ranging from 0.015 to 0.016 ft per ft. The direction of groundwater flow from

the BAP was south (185 to 186 degrees from north), and the corresponding groundwater flow rate for both monitoring events was 0.11 ft per day.

For the alluvial aquifer downgradient of the FAP, the hydraulic gradient and flow direction were also relatively stable. The hydraulic gradient ranged from 0.021 and 0.022 ft per ft and the direction of groundwater flow was to the southwest towards the Little Colorado River (240 to 242 degrees from north). The corresponding groundwater flow rates for April and October 2020 were 0.0052 and 0.0054 ft per day, respectively. The hydraulic conductivity value of 0.0032 ft per day for the FAP which was used in the groundwater flow rate calculation will be evaluated and potentially updated in 2021 based on the results of aquifer testing conducted at the FAP in 2020 and 2021 (Section 3.3).

For the Little Colorado River Alluvium downgradient of the SEDI, the hydraulic gradients and flow directions were more variable than the other units, although the range in water level elevations between the compliance and background CCR wells is less pronounced. The magnitude of the hydraulic gradient ranged from 0.0006 to 0.001 ft per ft during the reporting period, and the direction of groundwater flow was generally west to southwest towards the Little Colorado River (230 to 274 degrees from north). The corresponding groundwater flow rates were 0.28 to 0.52 ft per day for April and October 2020, respectively.

For the C-Aquifer underlying the BAM, the hydraulic gradient and flow direction were stable during the reporting period. The magnitude of the hydraulic gradient was 0.0086 ft per ft and the direction of groundwater flow for April and October 2020 was to the north (358 degrees from north). The corresponding groundwater flow rate for April and October 2020 was 1.8 ft per day.

2.2.3 Sample Collection

APS collected, labeled, preserved, and shipped groundwater samples per the SAP (Montgomery & Associates, 2015). In accordance with 40 CFR §257.93(i), groundwater samples collected for statistical analysis of Appendix III and IV constituents were not field filtered prior to analysis. Pursuant to the SAP, quality control samples (i.e., field duplicates, field blanks and extra sample volume for matrix spike samples) were collected during each groundwater monitoring event. These samples are noted on associated chain-of-custody documentation.

2.2.4 Sample Analysis and Data Validation

APS submitted groundwater samples to Eurofins TestAmerica Laboratories, Inc. (TestAmerica) and Radiation Safety Engineering, Inc. (Radiation Safety) located in Phoenix, Arizona for analysis. TestAmerica evaluated samples for all constituents other than radium, while Radiation Safety performed radium analyses. Both TestAmerica and Radiation Safety are Arizona Department of Health Services-licensed laboratories (AZ0728 and AZ0462, respectively). Appendix B presents the associated Laboratory Reports of Analysis organized by CCR unit.

Table 2-1 identifies the analytes evaluated during each monitoring event and field investigation. Analytes varied based on the monitoring program (i.e., detection vs. assessment monitoring) or field investigation. The SAP identifies Appendix III and Appendix IV constituents with associated analytical methods.

Following receipt of final laboratory reports of analysis, the reports and associated sample data collected during detection and assessment monitoring were evaluated for quality assurance purposes. The scope of the review was a USEPA Stage 2A validation. Appendix C presents the *2020 Data Validation Report* which

documents these reviews. There were no notable data validation qualifiers or reason codes added to the 2020 data. All data qualifiers and reason codes are included in 2020 Data Validation Report (Appendix C).

2.2.5 Sample Results

Appendix D presents the groundwater sampling results for 2020 along with historical groundwater quality data for the site. The groundwater quality data collected during the reporting period are discussed further in Section 3.1. The sampling coverage and frequency of the groundwater monitoring system is assumed representative and adequate of spatial and temporal heterogeneity until proven otherwise.

2.3 Statistical Analysis of Monitoring Data

Statistical analyses of Appendix III and Appendix IV constituent data were conducted during the reporting period to evaluate whether collected monitoring data indicate site CCR units have adversely impacted underlying groundwater. These analyses were conducted pursuant to the Statistical Data Analysis Work Plan (SDAWP) developed for the Site (Wood, 2018).

2.3.1 Evaluation of Appendix III Constituent Data

The BAM was the only site CCR unit that remained in the detection monitoring program at the end of 2019 and required statistical evaluations of Appendix III constituent data during the reporting period.

A statistical analysis of Appendix III constituent data collected at the BAM through October 2019 was completed in April 2020 (Appendix E). The statistical analysis indicated no SSLs over Appendix III constituent BTVs. An initial exceedance identified in 2019 for pH at CCR well M-59 was declared statistically insignificant based on a 1 of 2 resampling strategy, thereby nullifying the initial exceedance.

A statistical analysis of Appendix III constituent data collected at the BAM through May 2020 was completed in October 2020 (Appendix F). The statistical analysis identified initial exceedances over the fluoride BTV at CCR wells M-59, M-60, and M-61. In accordance with the SDAWP, APS resampled these wells using the 1 of 3 resampling strategy during the October 2020 detection monitoring event at the BAM. The initial exceedances will be evaluated as part of a statistical analysis for the BAM to be completed in the first quarter of 2021.

2.3.2 Evaluation of Appendix IV Constituent Data

The SEDI was the only site CCR unit that remained in the assessment monitoring program without declared exceedances of GWPSs at the end of 2019 and required statistical evaluations of collected Appendix IV constituent data during the reporting period.

APS performed two statistical analyses of Appendix IV constituent data collected from SEDI wells through November 2019 and April 2020 (Appendices G and H, respectively). Both analyses indicated that no GPWSs were exceeded at SSLs. On the basis that one or more Appendix III constituents continued to exceed BTVs and the statistical assessment indicated that Appendix IV constituent concentrations did not exceed applicable GWPSs at SSLs, APS continued assessment monitoring at the SEDI in accordance with 40 CFR §257.95(f).

3.0 CORRECTIVE ACTION PROGRAM

Based on the declaration that one or more Appendix IV constituents are present at SSLs above GWPSs downgradient of the FAP and the BAP, these units are currently in the corrective action program. Notification of exceedances occurred on November 14, 2018 and were documented in the Annual Groundwater Monitoring and Corrective Action Report for 2018 (Wood, 2019a).

Summaries of corrective action program activities performed during the reporting period are presented in the following sections.

3.1 Characterization of Potential Releases from CCR Units

To characterize releases from CCR units, 40 CFR §257.95(g)(1) requires: (i) the installation of wells to define the extent of contaminant plumes, (ii) collection of data on the nature and estimated quantity of material released, (iii) installation of at least one well at the facility boundary in the direction of contaminant migration, and (iv) sampling of these wells to characterize the nature and extent of the release.

APS documented initial efforts to address the requirements of 40 CFR §257.95(g)(1) in the *Hydrogeologic Investigation of the Fly Ash Pond and Bottom Ash Pond* (Wood, 2020b). However, due to duration required to adequately characterize complex groundwater impacts, work supporting characterization of potential releases from CCR units is ongoing. Activities conducted during the reporting period to address CCR Rule release characterization requirements downgradient of the FAP and BAP include:

- The collection of groundwater quality data from FAP and BAP monitoring wells (Section 2.2);
- Delineation of the nature and extent of releases from the FAP and BAP in the form of plume maps and geologic cross sections derived from the groundwater sampling results.

Findings from the characterization activities are summarized as follows and discussed in the following sections.

- Arsenic, fluoride, lithium, and molybdenum are present at concentrations above respective GWPSs in groundwater downgradient of the FAP, with the inferred extent of each constituent depicted on Figures 3-1 through 3-4 respectively. Fluoride, lithium, and molybdenum all exceed the respective GWPSs in groundwater beneath downgradient properties. Although the plumes have migrated beyond the extent of APS property directly adjacent to the FAP, the plumes have migrated back onto APS property where the downgradient extent has been defined. Arsenic, fluoride, lithium, and molybdenum are present in pond water in the FAP at concentrations exceeding the GWPSs. The approximate extent of inferred groundwater impacts resulting from the FAP is also depicted on geologic cross sections included as Figures 3-5 through 3-8.
- Cobalt is present at concentrations above the GWPS in groundwater downgradient of the BAP, with the inferred extent of cobalt depicted on Figure 3-9. Cobalt is elevated above the GWPS in groundwater beneath downgradient properties. Although the plume has migrated beyond the extent of APS property directly adjacent to the BAP, the plumes are defined by wells located on downgradient APS property. The cobalt concentration in pond water in the BAP is below both the GWPS and concentrations observed in groundwater (Section 3.3). The approximate extent of inferred groundwater impacts resulting from the BAP is also depicted on geologic cross sections included as Figures 3-10 through 3-14.

An increase in lithium concentrations was noted in groundwater samples collected from FAP downgradient wells M-50A, M-51A, W-123, W-126, MW-65A, MW-66A, and BAP downgradient wells W-306, W-308, W-309, W-314 during the April 2020 monitoring event. The cause of the lithium increase is unknown but may be related to a longer duration of low-flow sampling during the April 2020 sampling event. The longer sampling duration was necessary for the collection of supplemental water samples for a groundwater oxidation/reduction (redox) evaluation (Section 3.3). It is possible that the longer low-flow pumping duration created an atypical hydraulic gradient which accessed zones in the aquifer that are not normally interrogated during typical low-flow sampling.

3.2 Exposure Pathway Analysis and Risk Mitigation Plan

During the reporting period, APS prepared an exposure pathway analysis for impacted groundwater downgradient of the FAP and BAP and completed a risk evaluation to assess potential human health risks if exposure pathways were to become complete. Potential exposure pathways include a surface water pathway, an alluvial groundwater pathway, and a C-Aquifer groundwater pathway. These exposure pathways are currently incomplete (i.e., no receptors are being exposed to contamination), and APS plans to implement risk mitigation measures to ensure they will remain incomplete. The exposure pathway analysis, risk evaluation, and risk mitigation measures are presented in the *Risk Mitigation Plan for the Fly Ash Pond and the Bottom Ash Pond* (Risk Mitigation Plan) (Wood, 2020c).

One of the risk mitigation measures outlined in the Risk Mitigation Plan includes an ongoing quarterly review of the Arizona Department of Water Resources (ADWR) Wells 55 database to assess if groundwater production wells have been installed in impacted aquifers downgradient of the FAP and the BAP. The first two ADWR Wells 55 database reviews occurred on October 15, 2020 and January 15, 2021 and are documented as Appendix I.

3.3 Corrective Measures Pre-Design Studies

In response to GWPS exceedances at the FAP and the BAP and pursuant to 40 CFR §257.96(a), APS prepared an Assessment of Corrective Measures in 2019 (ACM) (Wood, 2019b) to evaluate the performance of several combined corrective measures to address groundwater impacts resulting from the FAP and the BAP. Since completing the ACM, APS has conducted several pre-design studies to support the selection and design of remedies for the FAP and the BAP. The pre-design studies completed to date are described below.

- *Moenkopi Moqui Investigation at the FAP.* To investigate potential saturation in the Moqui member of the Moenkopi Formation downgradient of the FAP, a well (MW-68M) was drilled into the Moqui near CCR well MW-65A in 2019. Observations made during the MW-68M drilling indicated the Moqui is unsaturated in this area, and that groundwater primarily flows within relatively permeable alluvial sediments located directly above the alluvial-bedrock contact. The MW-68M well screen was installed within the dry Moqui member to detect any potential future migration of groundwater in the Moqui. However, the annular well seal failed to prevent migration of alluvial water into the well screen, and the well was subsequently abandoned. Documentation of the MW-68M well installation is provided in the 2019 GMCAR (Wood, 2020a).
- *Preparation of Alternative Source Demonstrations for Arsenic and Cobalt at the FAP.* An ASD to evaluate GWPS exceedances for arsenic and cobalt at the FAP was prepared in 2019 and is documented in the 2019 GMCAR (Wood, 2020a). The ASD concluded that the cobalt exceedance was a false positive because the statistical method used to evaluate the cobalt data had to rely on

the use of an elevated laboratory reporting limit value which exceeded the cobalt GWPS as the criterion for comparison to the GWPS. The ASD for arsenic was inconclusive but suggested that the inconsistent spatial distribution of arsenic downgradient of the FAP may be related to redox reactions in groundwater. Accordingly, a groundwater redox evaluation was performed during the reporting period, which is discussed below.

- *Preparation of an Alternative Source Demonstration for Lithium at the BAP.* An ASD was prepared in 2019 to evaluate an exceedance of the lithium GWPS at the BAP. The ASD determined that the GWPS exceedance was not due to a release from the BAP. Rather, the exceedance resulted from natural spatial variations in groundwater quality.
- *Pre-Design Studies Report for the FAP.* Appendix J presents a report which summarizes several pre-design studies conducted during the reporting period necessary for the selection and design of remedies for the FAP. The pre-design studies include the following:
 - *Groundwater Redox Evaluation at the FAP.* An investigation was conducted to assess whether reducing conditions in groundwater are causing the inconsistent concentrations of arsenic observed at CCR well MW-67A. Groundwater samples collected from FAP monitoring wells were analyzed for several constituents which are useful in assessing groundwater redox conditions, including iron, manganese, ammonia, nitrate, nitrite, and organic carbon. The evaluation indicates that reducing conditions in groundwater near MW-67A (likely associated with localized surface water infiltration upgradient of the well) are causing the mobilization of arsenic from aquifer sediments. The evaluation also indicated that the reducing conditions (and associated elevated arsenic concentrations) are not caused by seepage from the FAP. The arsenic iso-concentration contour map (Figure 3-1) was updated during the reporting period accordingly.
 - *Aquifer Testing Downgradient of the FAP.* Aquifer tests were conducted at FAP downgradient wells W-123, W-126, and MW-66A in March 2020. Aquifer properties such as hydraulic conductivity and transmissivity were calculated from the aquifer test data. Water-level data collected during the aquifer tests noted a connection between the operation of seepage extraction well Hunt B and water levels at W-126.
 - *Cone Penetrometer Test Investigation at the FAP.* A cone penetrometer test (CPT) investigation was conducted along the toe of the FAP during the reporting period to identify preferential flow paths in the alluvial aquifer and evaluate the depth to bedrock. Vibrating wireline piezometers were also installed along the toe of the FAP to collect pore pressure and potentiometric surface data. The results of the CPT study assisted in the siting of four new extraction wells which were installed in December 2020 (discussed below) and indicated that CCR compliance well W-123 is partially completed in the Moenkopi Moqui.
 - *Seepage Intercept System Evaluation, Optimization, and Testing.* The existing seepage intercept system at the FAP was inspected during the reporting period to evaluate the influence the system has on intercepting seepage discharges and to assess seepage system optimization strategies. Results of the evaluation indicate limited effectiveness of the Geronimo seepage extraction wells, which led to the installation of the four extraction wells discussed below.

- *Installation and Aquifer Testing of Extraction Wells Downgradient of the FAP.* In December 2020, APS installed four new extraction wells along the southeastern toe of the FAP to contain seepage from the FAP and evaluate an extraction well network as part of the potential remedy for the FAP. The wells were sited at locations where the CPT investigation identified zones of increased sand and gravel and artesian pressures in the predominantly clayey alluvial aquifer downgradient of the FAP. Aquifer testing of the wells occurred in January 2021 to evaluate local aquifer properties, specific capacity data, and the radius of influence from pumping each well. The wells will be converted to extraction wells in 2021 (Section 3.4), and the well installation activities and aquifer tests will be documented in a Well Completion Report in 2021 (Section 4.0).
- *Stratified Water Sampling and Cobalt Leaching Evaluation at the BAP.* To investigate potential causes of elevated cobalt concentrations in groundwater downgradient of the BAP, APS collected depth-specific pond water samples from the BAP and solid matrix samples of bottom ash, alluvium, and Moenkopi Moqui in December 2019. Analyses of the collected samples suggest that the pond water in the BAP is not directly a source of elevated cobalt concentrations in groundwater downgradient of the BAP. Instead, reducing conditions promoted by introducing seepage to the aquifer from the BAP may be mobilizing cobalt from solid matrices into groundwater. To evaluate the groundwater redox conditions at the BAP, samples collected from BAP monitoring wells during the reporting period were analyzed for the same redox-sensitive constituents analyzed during the FAP redox evaluation discussed above. The cobalt leaching evaluation is included as Appendix K, and an evaluation of the collected redox data will be performed in 2021.
- *Bottom Ash Pond Dewatering Projection.* A Water Balance Model was developed during the reporting period to project pond dewatering at the BAP. The Water Balance Model was prepared to evaluate the duration of time after operations cease until the BAP no longer has ponded water and seepage from the BAP has declined to a steady state level. The water balance of the BAP accounts for precipitation, evaporation, and natural seepage through the foundation of the BAP dam. The Water Balance Model predicts that the BAP will continue to drain down to steady state seepage rates for up to 10 years using conservative assumptions. The water balance technical memorandum is included as Appendix L.

Additional pre-design studies planned for 2021 are discussed in Section 4.0.

3.4 Interim Response Measures

While additional pre-design studies necessary for remedy selection are being progressed, APS plans to implement several interim response measures at the FAP and the BAP to limit groundwater impacts in the interim. The interim response measures will also help to evaluate the effectiveness of potential remedial technologies. The interim response measures planned for implementation in 2021 are outlined in the Risk Mitigation Plan (Wood, 2020c) and summarized below.

- *Operation of Extraction Wells at the FAP* – The four new wells installed downgradient of the FAP in December 2020 (Section 3.3) will be converted to extraction wells to capture seepage from the FAP before it discharges to groundwater. The wells will be incorporated into the existing Geronimo Seepage Collection System prior to July 2021.
- *Evaluation of FAP Dewatering Strategies* – APS is evaluating several dewatering strategies for the FAP in order to close the CCR unit as soon as technically feasible. Dewatering strategies may

include extraction, treatment, and reuse of free water from the FAP. Progress of FAP dewatering will be documented in the Annual Report for 2021.

- *Installation of Extraction Wells at the BAP* – Potential extraction wells are planned for installation downgradient of the BAP in the first half of 2021. Aquifer testing will be performed at the new BAP wells after installation to determine local aquifer properties, specific capacity data, and the radius of influence from pumping each well. The wells will help to evaluate the effectiveness of an extraction well network as a part of a potential remedy for the BAP and if the wells perform well, they will be converted to extraction wells to capture seepage from the BAP near the dam.
- *Evaluation of In-Situ Remedial Technologies for the BAP* – APS will conduct laboratory- and field-scale evaluations of in-situ groundwater remedial technologies to address the elevated cobalt concentrations in groundwater downgradient of the BAP.

3.5 Notification to Landowners of Groundwater Impacts

APS notified private property owners downgradient of the FAP and the BAP of Appendix IV exceedances in groundwater per 40 CFR §257.95(g)(2) in 2019. The notifications were placed in the facility's operating record in accordance with 40 CFR §257.105(h)(8). During the reporting period, APS notified the Bureau of Land Management that groundwater underlying public property adjacent to the BAP is impacted (Appendix M). As noted in the 2019 Annual Report, APS inadvertently notified the incorrect agency responsible for managing public property adjacent to the BAP due to an error in county assessor records.

APS has also initiated property ownership reviews on a quarterly basis to ensure that the correct property owners are notified of Appendix IV exceedances in groundwater should property ownership change.

3.6 Semiannual Progress Report on Remedy Selection for the FAP and BAP

40 CFR §257.97(a) requires the preparation of semiannual reports which document the progress of remedy selection for CCR units that have potentially impacted groundwater until the remedy is selected. Accordingly, APS prepared a semiannual report on July 15, 2020 which describes the progress of remedy selection for the FAP and the BAP and is presented as Appendix N.

This Annual GMCAR for 2020 fulfills the requirements of 40 CFR §257.97(a) for a subsequent semiannual progress report by providing updates on remedy selection for the FAP and BAP as discussed in Section 3.3.

3.7 CCR Unit Closure Activities

During the reporting period, APS revised the closure plan for and initiated closure of the SEDI. The closure plan revision (published on November 4, 2020) was made to update the closure schedule for the unit given recent amendment of 40 CFR §257.101 which requires existing unlined CCR surface impoundments to close as soon as technically feasible, but no later than April 11, 2021. On October 30, 2020, APS provided notice of its intent to cease placement of waste in the SEDI and close the unit (see Appendix L for a copy of the notice).

The closure plan for the SEDI (AECOM, 2020) includes closure by removal of CCR solids in accordance with 40 CFR §257.102(c). CCR removal includes dewatering the pond, removing CCR deposits using conventional excavators and loaders, consolidation of the CCR deposits in another site CCR unit, and refilling the

excavation with clean backfill material. Since the power plant will continue to operate after SEDI closure, APS initiated construction of a new 60,000-gallon concrete tank system in August 2020 to fulfill the function of the SEDI. Closure activities were coordinated with construction of the new tank system because it is located in the northwest corner of the SEDI footprint. During the reporting period, flows to the SEDI were temporarily rerouted, the unit was dewatered, and CCR deposits were excavated from the region where the new tank system was to be constructed. CCR removal activities at the SEDI were ongoing at the end of the reporting period and are scheduled to be complete in October 2021.

4.0 KEY ACTIVITIES FOR 2021

During 2021, the following key activities will likely be conducted to support CCR groundwater monitoring and corrective action compliance at the site:

- Preparation of an Annual Groundwater Monitoring and Corrective Action Report for 2021 – Per 40 CFR §257.90(e), APS will prepare an annual report documenting groundwater monitoring and corrective action activities in 2021 no later than January 31, 2022.
- Continued Detection Monitoring at the BAM with Ongoing Statistical Evaluation for SSIs Over Background – Per 40 CFR §257.94(b), detection monitoring (including analysis of collected samples for Appendix III constituents) will continue on a semiannual basis. On an ongoing basis, APS will determine whether there has been an SSI over background at the CCR units undergoing detection monitoring within 90 days of sampling and analysis (40 CFR §257.93[h][2]).
- Initiation of Assessment Monitoring for CCR Units with an SSI over Background (as applicable) – Per 40 CFR §257.94(e)(1), within 90 days of detecting an SSI over background levels for any Appendix III constituent, an assessment monitoring program must be established.
- Continued Assessment Monitoring at the BAP, FAP, and SEDI – While corrective action evaluation progresses at the BAP and FAP, assessment monitoring (including analysis of collected samples for Appendix III and Appendix IV constituents) must be conducted on a semiannual basis per 40 CFR §257.95(b) and (d)(1). At the SEDI, assessment monitoring must be conducted for as long as concentrations of Appendix III and IV constituents exceed background values per 40 CFR §257.95(f) or closure of the unit occurs.
- Preparation of a Well Completion Report Documenting Extraction Well Installation and Testing at the FAP – A well completion report documenting the installation and testing of the four new extraction wells downgradient of the FAP will be prepared in 2021.
- Preparation of a Groundwater Redox Evaluation for the BAP – A technical memorandum documenting the results of the groundwater redox sampling conducted at the BAP during the reporting period will be prepared in 2021.
- Preparation of a Seepage System Evaluation Tech Memo for the BAP – A technical memorandum documenting the inspection and evaluation of the existing seepage collection system at the BAP will be prepared in 2021.

- Updates to the Numerical Groundwater Model – APS will update the existing numerical groundwater model for the site to assist in the evaluation and selection of remedies for the FAP and BAP.
- Development and Implementation of a Work Plan for Pre-Design Studies at the BAP – APS will develop and implement a Work Plan to evaluate potential remedial approaches for the BAP in 2021. The Work Plan will describe proposed field investigations to further evaluate: the nature and extent of elevated cobalt concentrations in groundwater, geochemical characterization of potential cobalt sources and treatability, and aquifer properties related to the suitability of an extraction well network.
- Initiation of Interim Response Measures at the FAP and BAP – In tandem with additional field investigations, APS will begin implementing the interim response measures outlined in Section 3.4 to limit the groundwater impacts from the FAP and BAP while remedies are being evaluated and selected.
- Public Meeting – Per 40 CFR §257.96(e), APS will conduct a public meeting with interested and affected parties to present the results of the ACM for the FAP and the BAP at least 30 days prior to selecting remedies for each CCR unit.
- Remedy Selection – APS will select remedies for the FAP and the BAP that meet the requirements of 40 CFR §257.97(b). Additionally, APS will prepare a remedy selection report for each unit per 40 CFR §257.97(a).
- Initiation of Remedial Activities – Per 40 CFR §257.91(f), APS will begin remedial activities at the FAP and the BAP within 90 days of selecting a remedy for each unit.

Since the nature of corrective actions is implemented in phases based on analysis of data collected during the groundwater monitoring program, the foregoing list only includes reasonably probable activities that will occur in 2021; this list is not comprehensive.

5.0 REFERENCES

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- Wood, 2019a. *Annual Groundwater Monitoring and Corrective Action Report for 2018.* Coal Combustion Residual Rule Groundwater Monitoring System Compliance, Cholla Power Plant, Navajo County, Arizona. Prepared on behalf of APS. January 31, 2019.
- Wood, 2019b. *Assessment of Corrective Measures for the Fly Ash Pond and the Bottom Ash Pond.* Coal Combustion Residual Rule and Aquifer Protection Permit Compliance, Arizona Public Service Company, Cholla Power Plant, Navajo County, Arizona. Prepared on behalf of APS. June 14, 2019.
- Wood, 2020a. *Annual Groundwater Monitoring and Corrective Action Report for 2019.* Coal Combustion Residual Rule Groundwater Monitoring System Compliance, Cholla Power Plant, Navajo County, Arizona. Prepared on behalf of APS. January 31, 2020.
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Wood, 2020c. *Risk Mitigation Plan for the Fly Ash Pond and the Bottom Ash Pond*. Coal Combustion Residuals Rule Compliance. Arizona Public Service Cholla Power Plant - Navajo County, Arizona. Report dated October 30, 2020.

TABLES

Table 1-1
Description of Coal Combustion Residual Units

CCR Unit	Function	Operation	Size/Construction	History
Fly Ash Pond (FAP)	<i>Single CCR unit</i> - surface impoundment to store slurried fly ash from the plant.	Receives a slurry from the plant that contains primarily fly ash but may also contain some bottom ash, boiler slag, flue gas emission control residuals, boiler cleaning waste, oil/water separator solids, and storm water. Periodically receives solids from the SEDI.	- 430 acres in aerial extent. - Total storage capacity of about 18,000 acre-feet. - Normal operating pool elevation of 5,114 feet amsl.	- Constructed beginning in 1976 and placed into service in 1978. - Unlined; constructed on Moenkopi bedrock and a thin veneer of alluvial sediments. - The dam is constructed of earth fill with a central clay core that extends to bedrock where bedrock is shallow. In the central portion of the dam, where bedrock is deeper, a slurry cutoff wall extends one foot into bedrock or two feet into stiff clay.
Sedimentation Pond (SEDI)	<i>Single CCR unit</i> - collects water from drains around plant site, including storm water, process water, plant water, and slurry from plant leaks.	Collects discharge from on-site secondary wastewater treatment plant, effluent from the oil/water separator, vehicle wash water, plant wash water, and FGD wastes from scrubber or scrubber feed tank upsets. Water collected in the SEDI is pumped to Cholla's general water sump for recycling as process water.	- 1.3 acres in aerial extent. - Total storage capacity of 10.5 acre-feet. - Maximum pond depth of 10 feet. - the top of the pond side slope is at 5,019 feet amsl	- Placed into service in 1976. - Lined with a 2-foot-thick layer of compacted clay. - Constructed below grade. - Discharges to the SEDI ceased as of October 2020.
Bottom Ash Pond (BAP)	<i>Single CCR unit</i> - surface impoundment to store slurried bottom ash from the plant.	Bottom ash is pumped to the BAP as a slurry. The bottom ash settles in the east and west upstream storage cells and the water is decanted to the reservoir and ultimately siphoned back to the plant for reuse. Slurry may also contain fly ash, boiler slag, flue gas emission control residuals, sedimentation pond effluent, cooling tower blowdown, oil/water separator effluent and solids, boiler cleaning waste, and storm water. Periodically receives solids from the SEDI.	- 105 acres in aerial extent. - Total storage capacity of 2,300 acre-feet. - Normal operating pool elevation of 5,117.8 feet amsl.	- Constructed beginning in 1976 and placed into service in 1978. - Unlined; constructed on Moenkopi bedrock and Tanner Wash alluvium. - Consists of a reservoir directly behind the dam and two storage cells upstream of the reservoir. - The dam is constructed of earth fill with a central clay core that extends to bedrock where bedrock is shallow. In the central portion of the dam, where bedrock is deeper, a slurry cutoff wall extends one foot into bedrock or two feet into stiff clay.
Bottom Ash Monofill (BAM)	<i>Single CCR unit</i> - landfill for bottom ash solids excavated from the BAP.	Bottom ash that has been drained of water is excavated from the BAP and permanently stored in the BAM.	- 41 acres in aerial extent.	- Placed into service in 1999.

Source:

GEI Consultants, Inc. 2009. *Final Coal Ash Impoundment Specific Site Assessment Report, Arizona Public Service, Cholla Power Plant.* Submitted to Lockheed-Martin Corporation. December 2009.

Abbreviations:

amsl - above mean sea level

BAP - Bottom Ash Pond

BAM - Bottom Ash Monofill

CCR - Coal combustion residuals

FAP - Fly Ash Pond

FGD - flue gas deulfurization

SEDI - Sedimentation Pond

Table 1-2
CCR Groundwater Monitoring System Summary

Well	CCR Unit	Well Designation	Hydrogeologic Unit	Date Installed	Borehole Depth [ft bgs]	Top of Casing Elevation [ft AMSL]	Ground Surface Elevation [ft AMSL]	Top of Screen [ft bgs]	Bottom of Screen [ft bgs]	Screen Length [ft]	Top Screen Elevation [ft AMSL]	Bottom Screen Elevation [ft AMSL]	Bottom Borehole Elevation [ft AMSL]
M-54	BAM	Background	Coconino Sandstone	10/2/2015	370	5070.71	5068.21	315	365	50	4,753.21	4,703.21	4,698.21
M-59	BAM	Downgradient	Coconino Sandstone	10/21/2015	425	5136.00	5133.86	373	423	50	4,760.86	4,710.86	4,708.86
M-60	BAM	Downgradient	Coconino Sandstone	11/1/2015	450	5151.18	5148.69	395	445	50	4,753.69	4,703.69	4,698.69
M-61	BAM	Downgradient	Coconino Sandstone	11/13/2015	420	5127.58	5124.95	365	415	50	4,759.95	4,709.95	4,704.95
M-47A	BAP	Supplementary	LCR Alluvium	1/20/2012	184	5020.34	5021.45	30.5	60	29.5	4,990.95	4,961.45	4,837.45
M-52A	BAP	Downgradient	Tanner Wash Alluvium/Moenkopi - Moqui Member	9/22/2015	83	5049.36	5047.08	20	70	50	5,027.08	4,977.08	4,964.08
M-53A	BAP	Downgradient	Tanner Wash Alluvium	9/22/2015	38	5044.68	5042.09	10	35	25	5,032.09	5,007.09	5,004.09
M-55A	BAP	Supplementary	Tanner Wash Alluvium	10/30/2015	60	5062.82	5060.06	20	55	35	5,040.06	5,005.06	5,000.06
MW-69A	BAP	Supplementary	Tanner Wash Alluvium	11/20/2019	27	5050.741	5049.25	16.6	26.6	10	5,032.65	5,022.65	5,022.25
MW-70M	BAP	Supplementary	Moenkopi Formation - Moqui Member	11/22/2019	77.5	5051.119	5049.80	45.6	75.6	30	5,004.20	4,974.20	4,972.30
W-227	BAP	Supplementary	Moenkopi Formation - Wupatki Member	11/2/1983	58	5122.820	5120.32	38	55	17	5,082.32	5,065.32	5,062.32
W-301	BAP	Supplementary	Tanner Wash Alluvium	10/4/1983	62	5033.68	5031.18	40	60	20	4,991.18	4,971.18	4,969.18
W-302	BAP	Supplementary	Tanner Wash Alluvium	11/1/1983	44	5036.42	5033.90	27	42	15	5,006.90	4,991.90	4,989.90
W-303	BAP	Supplementary	Moenkopi Formation - Moqui Member	10/26/1983	32	5039.70	5037.20	20	30	10	5,017.20	5,007.20	5,005.20
W-304	BAP	Supplementary	Tanner Wash Alluvium	10/26/1983	56	5038.60	5036.10	35	54	19	5,001.10	4,982.10	4,980.10
W-305	BAP	Downgradient	Tanner Wash Alluvium	10/7/1983	102	5046.80	5044.65	80	100	20	4,964.65	4,944.65	4,942.65
W-306	BAP	Downgradient	Tanner Wash Alluvium	10/11/1983	52	5046.74	5044.78	30	50	20	5,014.78	4,994.78	4,992.78
W-307	BAP	Supplementary	Tanner Wash Alluvium	10/21/1983	62	5045.22	5042.70	40	60	20	5,002.70	4,982.70	4,980.70
W-308	BAP	Supplementary	Tanner Wash Alluvium	10/19/1983	72	5051.54	5049.00	50	70	20	4,999.00	4,979.00	4,977.00
W-309	BAP	Supplementary	Tanner Wash Alluvium	10/14/1983	81	5062.01	5059.50	64	79	15	4,995.50	4,980.50	4,978.50
W-310	BAP	Supplementary	Moenkopi Formation - Wupatki Member	12/19/1992	240	5050.61	5048.60	218	238	20	4,830.60	4,810.60	4,808.60
W-311	BAP	Supplementary	Coconino Sandstone	12/14/1991	281	5050.03	5047.7	259	279	20	4,788.70	4,768.70	4,766.70
W-312	BAP	Supplementary	Moenkopi Formation - Wupatki Member	1/22/1992	259	5052.01	5049.3	238	258	20	4,811.30	4,791.30	4,790.30
W-313	BAP	Supplementary	Coconino Sandstone	1/27/1992	293	5051.32	5049.1	272	292	20	4,777.10	4,757.10	4,756.10
W-314	BAP	Downgradient	Tanner Wash Alluvium	1/27/1992	63	5051.10	5051.32	41	61	20	5,010.32	4,990.32	4,988.32
W-317	BAP	Supplementary	LCR Alluvium	11/10/2011	122.5	5022.27	5023.09	28.8	58.8	30	4,994.29	4,964.29	4,900.59
DM-04R	FAP	Supplementary	LCR Alluvium	11/22/2008	90	5018.43	5015.77	35	65	30	4,980.77	4,950.77	4,925.77
EW-01	FAP	Extraction	LCR Alluvium	12/10/2020	55.0	5037.36	5035.09	20.0	50.0	30	5,015.09	4,985.09	4,980.09
EW-02	FAP	Extraction	LCR Alluvium	12/11/2020	52.0	5036.64	5034.01	17.0	47.0	30	5,017.01	4,987.01	4,982.01
EW-03	FAP	Extraction	LCR Alluvium	12/12/2020	53.0	5037.71	5035.2	18.0	48.0	30	5,017.20	4,987.20	4,982.20
EW-04	FAP	Extraction	LCR Alluvium	12/10/2020	24.0	5039.93	5037.18	9.0	19.0	10	5,028.18	5,018.18	5,013.18
M-43A	FAP	Supplementary	LCR Alluvium	11/21/2008	80	5022.56	5019.87	40	70	30	4,979.87	4,949.87	4,939.87
M-44D	FAP	Supplementary	Coconino Sandstone	11/13/2008	385	5143.52	5140.94	320	380	60	4,820.94	4,760.94	4,755.94
M-44S	FAP	Supplementary	Moenkopi Formation - Wupatki Member	11/13/2008	290	5145.63	5143.01	250	280	30	4,893.01	4,863.01	4,853.01
M-45A	FAP	Supplementary	LCR Alluvium	11/12/2011	68	5025.57	5023.57	31	60	29.7	4,993.07	4,963.37	4,955.57
M-46A	FAP	Supplementary	LCR Alluvium	11/14/2011	40	5025.36	5023.36	22	34	12	5,001.36	4,989.36	4,983.36
M-49A	FAP	Supplementary	LCR Alluvium	9/17/2015	35	5024.70	5022.70	10	20	10	5,012.70	5,002.70	4,987.70
M-50A	FAP	Downgradient	LCR Alluvium	9/18/2015	32	5038.18	5035.65	9	29	20	5,026.65	5,006.65	5,003.65

Table 2-1
Appendix III Constituent BTVs and Appendix IV Constituent GWPSs for Cholla CCR Units

	Constituent	BAM		SEDI			FAP			BAP		
		BTV [mg/L]	Reference	BTV [mg/L]	GWPS [mg/L]	Reference	BTV [mg/L]	GWPS [mg/L]	Reference	BTV [mg/L]	GWPS [mg/L]	Reference
Appendix III Constituents	Boron	0.55	5	0.23	N/A	1	1.3	N/A	1	1.3	N/A	1
	Calcium	100	5	600		1	740		1	740		1
	Chloride	1,600	1	3,700		1	5,700		1	5,700		1
	Fluoride	1.4 (M-59) 1.5 (M-60, M-61)	1 6	0.8		1	0.8		1	0.8		1
	pH ¹	7.3 to 7.8	5	7.5		1	7.4		1	7.4		1
	Sulfate	380	5	630		1	5,100		1	5,100		1
	TDS	3,200	5	7,800		1	15,000		1	15,000		1
Appendix IV Constituents	Antimony	N/A		0.05	0.05	4	0.004	0.006	3	0.004	0.006	2
	Arsenic			0.004	0.01	4	0.004	0.01	3	0.004	0.01	2
	Barium			0.08	2	4	0.05	2	3	0.05	2	2
	Beryllium			0.001	0.004	4	0.001	0.004	3	0.001	0.004	2
	Cadmium			0.002	0.005	4	0.0004	0.005	3	0.0004	0.005	2
	Chromium			0.004	0.1	4	0.004	0.1	3	0.004	0.1	2
	Cobalt			0.002	0.006	4	0.002	0.006	3	0.002	0.006	2
	Fluoride			0.8	4	4	0.8	4	3	0.8	4	2
	Lead			0.01	0.015	4	0.002	0.015	3	0.002	0.015	2
	Lithium			0.2	0.2	4	0.31	0.31	3	0.31	0.31	2
	Mercury			0.0002	0.002	4	0.0002	0.002	3	0.0002	0.002	2
	Molybdenum			0.011	0.1	4	0.0061	0.1	3	0.0061	0.1	2
	Selenium			0.01	0.05	4	0.002	0.05	3	0.002	0.05	2
	Thallium			0.0004	0.002	4	0.0014	0.002	3	0.0014	0.002	2
	Combined Radium ²			1.1	5	4	1.6	5	3	1.6	5	2

Notes and Abbreviations:

¹Units are standard units
²Units are picocuries per liter
BAM - Bottom Ash Monofill
BAP - Bottom Ash Pond
BTV - Background Threshold Value
FAP - Fly Ash Pond
GWPS - Groundwater Protection Standard
mg/L - milligrams per liter
N/A - not applicable
SEDI - Sedimentation Pond

References:

1 - Montgomery & Associates, 2018. *Cholla Power Plant Coal Combustion Residuals Program – Statistical Analysis of Baseline Groundwater Monitoring Data November 2015 through September 2017*. Prepared for Arizona Public Service. January 12, 2018. Revised May 22, 2018.
2 - Wood Environment & Infrastructure Solutions, Inc. (Wood), 2018. *CCR Groundwater Assessment Monitoring Statistical Analysis and Results for the Bottom Ash Pond*. Arizona Public Service Cholla Power Plant – Navajo County, Arizona. Technical Memorandum. Prepared on behalf of Arizona Public Service. October 15, 2018.
3 - Wood, 2018. *CCR Groundwater Assessment Monitoring Statistical Analysis and Results for the Fly Ash Pond*. Arizona Public Service Cholla Power Plant – Navajo County, Arizona. Technical Memorandum. Prepared on behalf of Arizona Public Service. October 15, 2018.
4 - Wood, 2019. *CCR Groundwater Assessment Monitoring Statistical Analysis and Results for the Sedimentation Pond*. Arizona Public Service Cholla Power Plant – Navajo County, Arizona. Technical Memorandum. Prepared on behalf of Arizona Public Service. January 14, 2019.
5 - Wood, 2019. *CCR Groundwater Detection Monitoring Statistical Analysis and Results for the Bottom Ash Monofill*. Arizona Public Service Cholla Power Plant – Navajo County, Arizona. Technical Memorandum. Prepared on behalf of Arizona Public Service. April 15, 2019.
6 - Wood, 2020. *CCR Groundwater Detection Monitoring Statistical Analysis and Results for the Bottom Ash Monofill Appendix III Constituent Data Collected through May 2020*. Arizona Public Service Cholla Power Plant - Navajo County, Arizona. Technical Memorandum dated October 13, 2020.

Table 2-2
Monitoring Event Summary for 2020

CCR UNIT	Monitoring Location	Monitoring Location Type	Sampling Date (Monitoring Program)										Number of Field Original Samples Collected in 2020 ^(c)
			Mar 5, 2020 (Characterization)	Apr 16, 2020 (Assessment)	Apr 16-19, 2020 (Assessment)	May 4-7, 2020 (Assessment)	May 7, 2020 (Detection)	May 8, 2020 (Characterization)	July 21, 2020 (Characterization)	Oct 20-21, 2020 (Assessment)	Oct 21, 2020 (Detection)	Oct 21-26, 2020 (Assessment)	
BAP	M-52A	CCR Well	---	---	X	---	---	---	---	---	---	X	2
	M-53A	CCR Well	---	---	X	---	---	---	---	---	---	X	2
	M-55A	Supplementary Well	---	---	X	---	---	---	---	---	---	X	2
	M-64A ^(a)	CCR Well	---	---	---	X	---	---	---	---	---	X	2
	MW-69A	Supplementary Well	---	---	X	---	---	---	---	---	---	X	2
	MW-70M	Supplementary Well	---	---	X	---	---	---	---	---	---	X	2
	W-301	Supplementary Well	---	---	X	---	---	---	---	---	---	X	2
	W-302	Supplementary Well	---	---	X	---	---	---	---	---	---	X	2
	W-303	Supplementary Well	---	---	X	---	---	---	---	---	---	X	2
	W-304	Supplementary Well	---	---	X	---	---	---	---	---	---	X	2
	W-305	CCR Well	---	---	X	---	---	---	---	---	---	X	2
	W-306	CCR Well	---	---	X	---	---	---	---	---	---	X	2
	W-307	Supplementary Well	---	---	X	---	---	---	---	---	---	X	2
	W-308	Supplementary Well	---	---	X	---	---	---	---	---	---	X	2
	W-309	Supplementary Well	---	---	---	X	---	---	---	---	---	X	2
	W-314	CCR Well	---	---	X	---	---	---	---	---	---	X	2
	W-317	CCR Well	---	---	X	---	---	---	---	---	---	X	2
	Tanner Wash Seep	Surface Water Seep	---	---	---	---	---	X	---	---	---	---	1
BAM	M-54	CCR Well	---	---	---	---	X	---	---	---	X	---	2
	M-59	CCR Well	---	---	---	---	X	---	---	---	X	---	2
	M-60	CCR Well	---	---	---	---	X	---	---	---	X	---	2
	M-61	CCR Well	---	---	---	---	X	---	---	---	X	---	2
SEDI	M-56A	CCR Well	---	X	---	---	---	---	---	X	---	---	2
	M-57A	CCR Well	---	X	---	---	---	---	---	X	---	---	2
	M-58A	CCR Well	---	X	---	---	---	---	---	X	---	---	2
	M-62A	CCR Well	---	X	---	---	---	---	---	X	---	---	2
FAP	M-43A	Supplementary Well	---	---	---	X	---	---	---	---	---	X	2
	M-44D	Supplementary Well	---	---	---	X	---	---	---	---	---	X	2
	M-46A	Supplementary Well	---	---	---	X	---	---	---	---	---	X	2
	M-50A	CCR Well	---	---	---	X	---	---	---	---	---	X	2
	M-51A	CCR Well	---	---	---	X	---	---	---	---	---	X	2
	M-65A	CCR Well	---	---	---	X	---	---	---	---	---	X	2
	M-66A	CCR Well	X ^(d)	---	---	X	---	---	---	---	---	X	16
	M-67A	CCR Well	---	---	---	X	---	---	---	---	---	X	2
	W-123	CCR Well	---	---	---	X	---	---	---	---	---	X	2
	W-125	Supplementary Well	---	---	---	X	---	---	---	---	---	X	2
	W-126	Supplementary Well	---	---	---	X	---	---	---	---	---	X	2
	Geronimo B	Seepage Extraction Well	X	---	---	---	---	---	---	---	---	---	1
	Geronimo C	Seepage Collection Sump	X	---	---	---	---	---	X	---	---	---	2
	Geronimo D	Seepage Collection Sump	---	---	---	---	---	---	X	---	---	---	1
	Hunt B	Seepage Extraction Well	X	---	---	---	---	---	---	---	---	---	1
Analyzed Constituents			App III, App IV, Additional Constituents	App III and App IV	App III and Detected App IV	App III and Detected App IV	App III	App III, App IV, Additional Constituents	App III, App IV, Additional Constituents	App III and Detected App IV	App III	App III and App IV	87

Notes and Abbreviations:

- ^(a) Background well for both the BAP and FAP.

^(b) Well scheduled for monitoring but not monitored.

^(c) Totals exclude field duplicate samples.

^(d) 14 samples collected at this well during March 2020 aquifer test.
- X - Well Monitored

--- - Well Not Monitored
- App - Appendix

BAM - Bottom Ash Monofill
- BAP - Bottom Ash Pond

CCR - coal combustion residuals
- FAP - Fly Ash Pond

ID - Identification
- N/A - Not Applicable

SEDI - Sedimentation Pond

Table 2-3
Aquifer Properties and Groundwater Flow Calculations

CCR Unit (Wells Used in Calculations)	Estimated Hydraulic Conductivity [ft/d]	Estimated Effective Porosity	Monitoring Event	Calculated Hydraulic Gradient [ft/ft]	Calculated Groundwater Flow Direction [degrees from North]	Estimated Groundwater Flow Rate [ft/d]
BAP (M-52A, M-53A, W-301, W-302, W-304, W-306, W-307)	0.96 ^(a)	0.13 ^(a)	April 2020	0.016	186	0.11
			October 2020	0.015	185	0.11
FAP (M-50A, M-51A, W-123, W-126, MW-65A, MW-66A, MW-67A)	0.032 ^(a)	0.13 ^(a)	April 2020	0.021	242	0.0052
			October 2020	0.022	240	0.0054
SEDI (MW-56A, MW-58A, MW-62A)	66 ^(a)	0.13 ^(a)	April 2020	0.00102	230	0.52
			October 2020	0.00056	274	0.28
BAM (M-54, M-59, M61)	31 ^(a)	0.15 ^(a)	April 2020	0.0086	358	1.8
			October 2020	0.0086	358	1.8

Abbreviations:

BAM - Bottom Ash Monofill
 BAP - Bottom Ash Pond
 CCR - Coal Combustion Residuals
 d - day
 FAP - Fly Ash Pond
 ft - feet
 SEDI - Sedimentation Pond

References:

^(a) Montgomery & Associates, 2018. *Annual Groundwater Monitoring and Corrective Action Report for Cholla Power Plant Coal Combustion Residuals Program, November 2015 - December 2017*. Navajo County, Arizona. Document # CH_GW_ANCAR_020_20180131. January 30, 2018.

FIGURES



0 0.75 1.5 3
Miles



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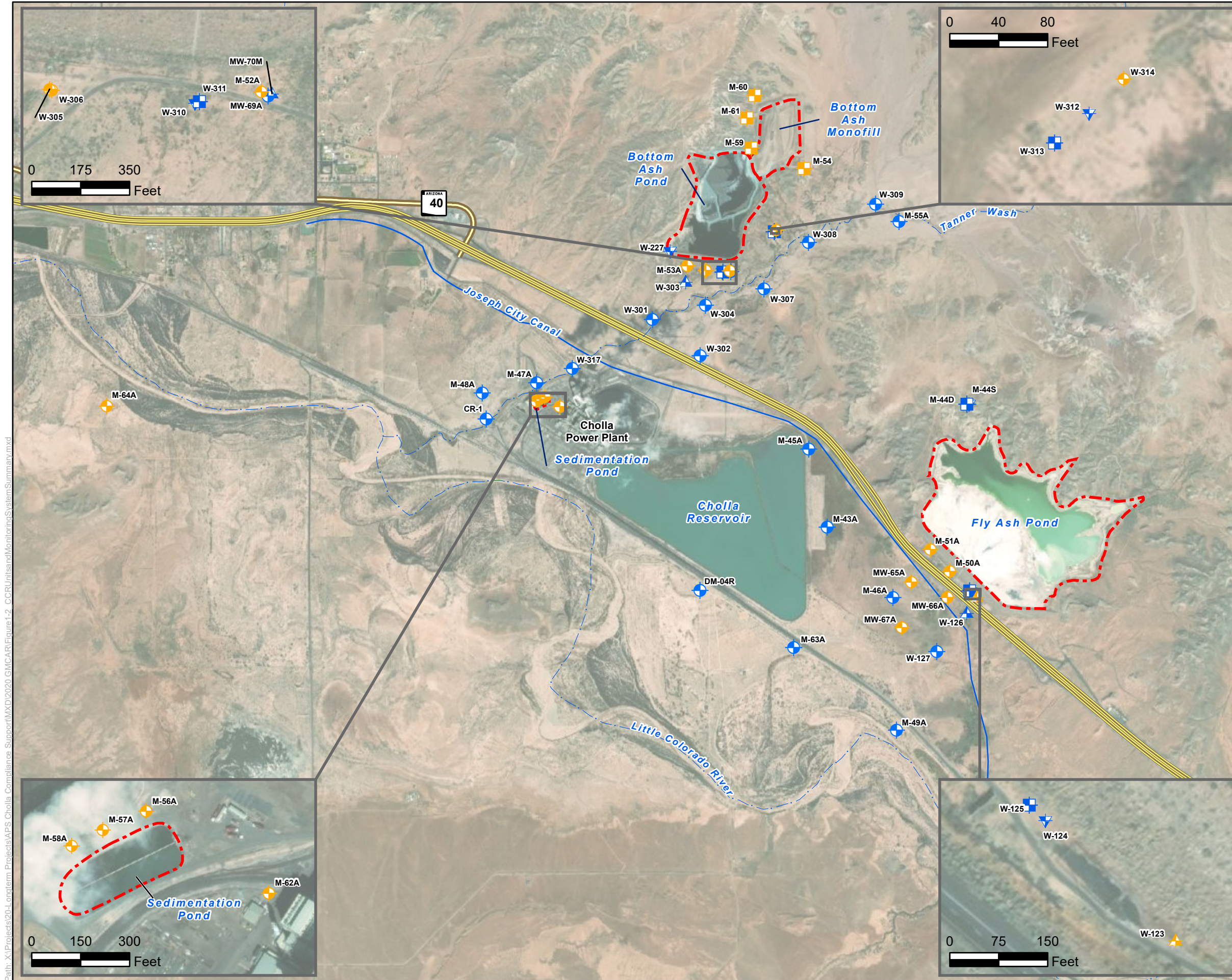
Arizona Public Service
Cholla Power Plant
Navajo County, Arizona

Site Location Map

FIGURE
1-1

wood.

Job No. 14-2018-2040
PM: MBH
Date: 1/31/2021
Scale: 1" = 1.5 miles



Legend

CCR Monitoring Well Location

- Alluvial Monitoring Well
- C-Aquifer Monitoring Well
- Moenkopi Formation (Moqui Member) Monitoring Well

Supplementary Site Monitoring Well Location

- Alluvial Monitoring Well
- C-Aquifer Monitoring Well
- Moenkopi Formation (Moqui Member) Monitoring Well
- Moenkopi Formation (Wupatki Member) Monitoring Well

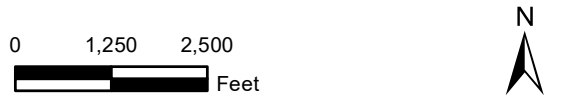
— Ephemeral Surface Water Feature

— Canal

— Approximate Extent of CCR Unit

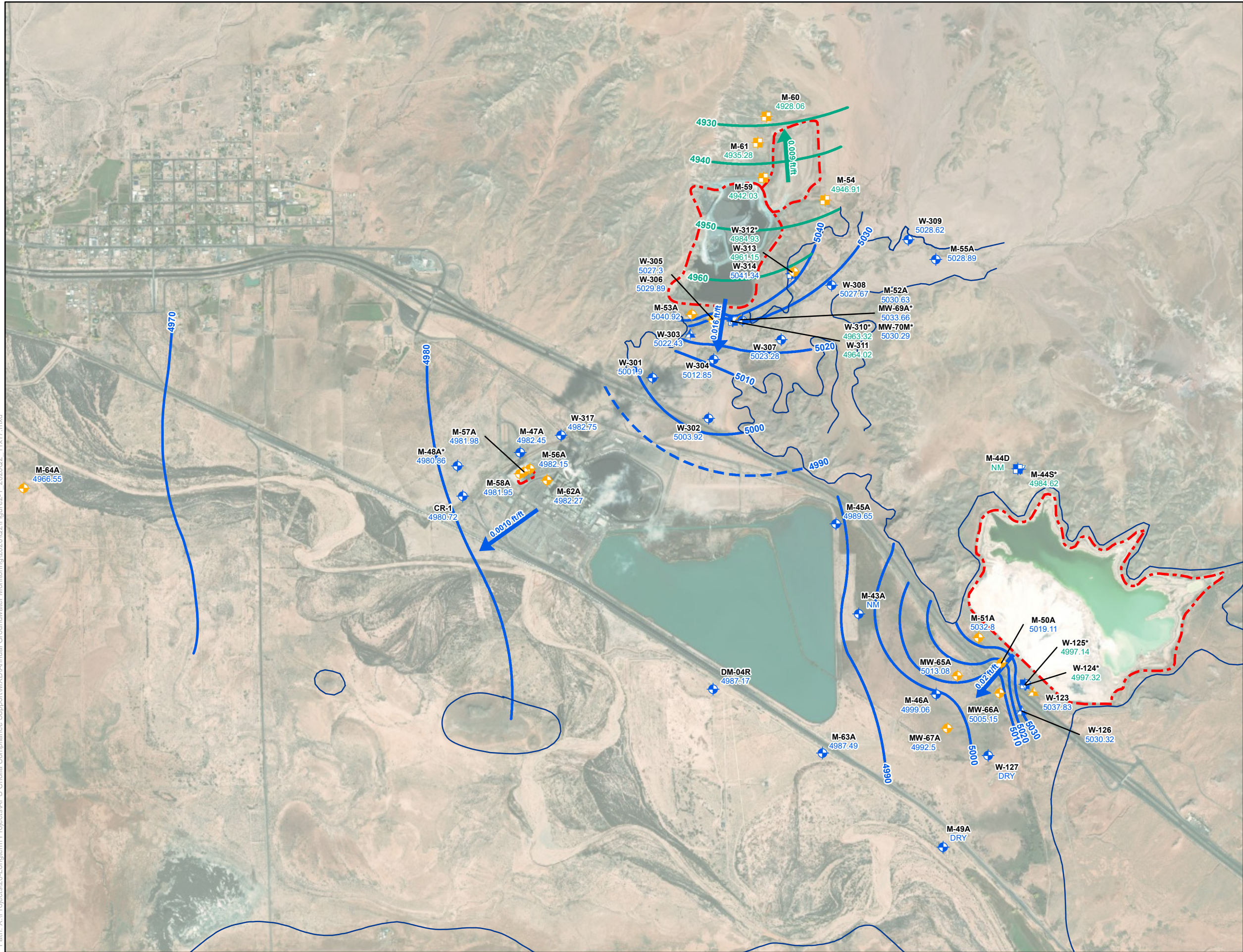
Notes:

CCR Coal Combustion Residuals



Arizona Public Service Cholla Power Plant Navajo County, Arizona	
FIGURE 1-2	CCR Units and Monitoring System Summary
<div>Job No. 1420182040 PM: MBH Date: 1/31/2021 Scale: 1"= 2500'</div> <div>wood.</div>	
<small>The map shown here has been created with all due and reasonable care and is strictly for use with Wood Environment & Infrastructure Solutions, Inc. Project Number 1420182040. This map has not been certified by a licensed land surveyor, and any third party use of this map comes without warranties of any kind. Wood Environment & Infrastructure Solutions, Inc. assumes no liability, direct or indirect, whatsoever for any such third party or unintended use.</small>	

Path: X:\Projects\20-Longterm Projects\APS Cholla Compliance Support\WXD\Annual Groundwater Monitoring\2020\Q2\Figure2-1_2020Q2_11x17.mxd



Legend

CCR Monitoring Well Location

- Alluvial Monitoring Well
- Moenkopi Formation (Moqui Member) Monitoring Well
- C-Aquifer Monitoring Well

Supplementary Site Monitoring Well Location

- Alluvial Monitoring Well
- Moenkopi Formation (Moqui Member) Monitoring Well
- Moenkopi Formation (Wupatki Member) Monitoring Well
- C-Aquifer Monitoring Well

- Groundwater Elevation Contour (ft amsl)
Alluvial Aquifer; dashed where inferred
- Groundwater Elevation Contour (ft amsl)
C-Aquifer
- Groundwater Flow Direction
- Extent of Alluvial
- Approximate Extent of CCR Unit

Notes and Abbreviations:

MW-65A	Well Identification
5013.08	Alluvial/ Moenkopi Moqui Groundwater Elevation (ft amsl)
4997.32	C-Aquifer/Moenkopi Wupatki Groundwater Elevation (ft amsl)
*	Well not used in potentiometric surface mapping
NM	Not Measured
ft amsl	Feet above mean sea level
CCR	Coal Combustion Residuals

0 1,050 2,100
Feet



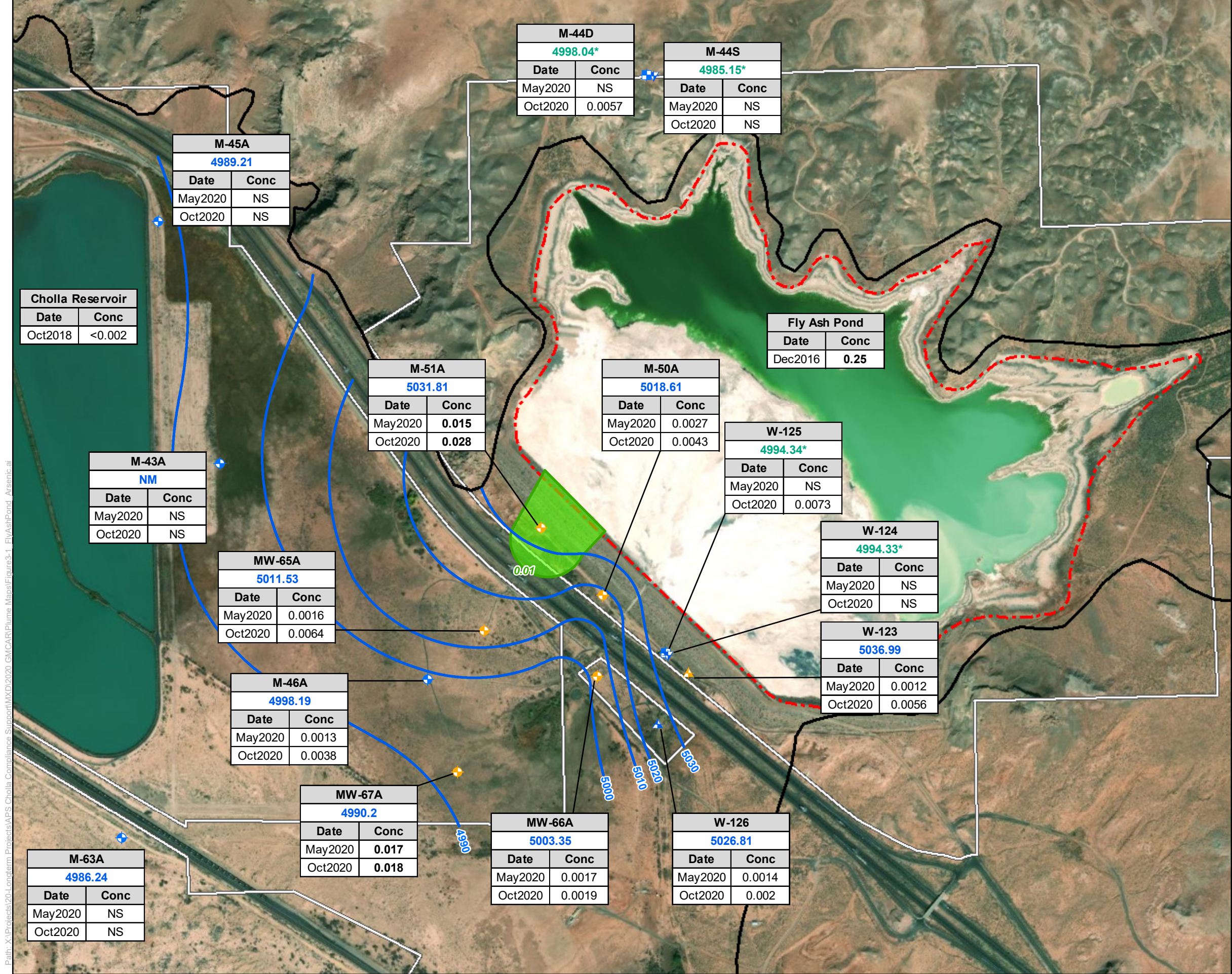
Arizona Public Service
Cholla Power Plant
Navajo County, Arizona

Figure 2-1 Potentiometric Surface Map
April 2020

Job No. 14-2018-2040
PM: MBH
Date: 1/28/2021
Scale: 1"= 2,100'

wood.

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Legend

CCR Monitoring Well Location

Alluvial Monitoring Well

Moenkupi Formation (Moqui Member) Monitoring Well

Supplementary Site Monitoring Well Location

Alluvial Monitoring Well

Moenkupi Formation (Moqui Member) Monitoring Well

Moenkupi Formation (Wupatki Member) Monitoring Well

C-Aquifer Monitoring Well

Estimated Alluvial Extent

Approximate Extent of CCR Unit

APS Land Ownership

Alluvial Aquifer Potentiometric Surface (October 2020)

Groundwater Elevation (Dashed Where Inferred)

Arsenic Concentration in Groundwater (October 2020)

>0.01 mg/L

GWPS (0.01 mg/L; Dashed Where Inferred)

Notes:

W-123 Well Identification
5036.99 Alluvial/Moenkupi Moqui Groundwater elevation (ft amsl) measured in October 2020
4994.34 C-Aquifer/Moenkupi Wupatki Groundwater elevation (ft amsl) measured in October 2020
NM Not Measured
***** Well not used in potentiometric surface mapping

0.0012 Arsenic concentration (mg/L) (Bolded values exceed GWPS)
NS Not Sampled
ft amsl Feet above mean sea level
mg/L Milligrams per liter
CCR Coal Combustion Residuals
GWPS Groundwater Protection Standard

0400800

Feet

N

Arizona Public Service

Cholla Power Plant

Navajo County, Arizona

Figure 3-1

Arsenic Iso-Concentration Map for the Fly Ash Pond

Job No. 1420182040

PM: MBH

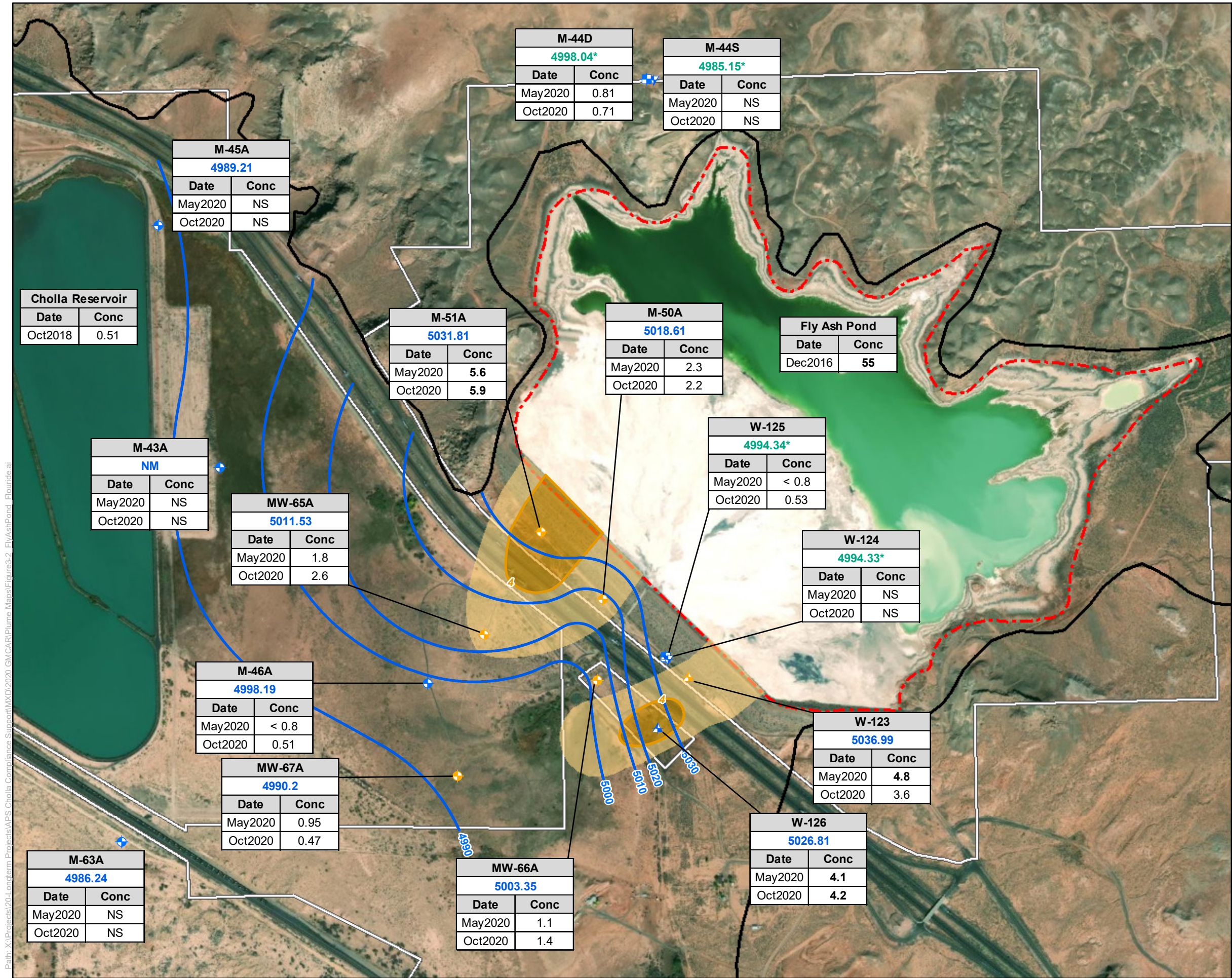
Date: 1/28/2021

Scale: 1"= 800'

wood.

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Path: X:\Projects\20-L Longterm Projects\APS Cholla Compliance Support\MXD\2020 GIMCAR\Plume Maps\Figure3-2 FlyAshPond_Fluoride.ai



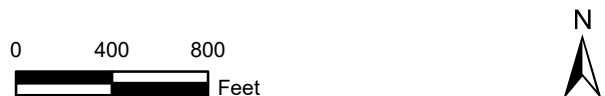
Legend

- CCR Monitoring Well Location**
- Alluvial Monitoring Well
 - Moenkupi Formation (Moqui Member) Monitoring Well
- Supplementary Site Monitoring Well Location**
- Alluvial Monitoring Well
 - Moenkupi Formation (Moqui Member) Monitoring Well
 - Moenkupi Formation (Wupatki Member) Monitoring Well
 - C-Aquifer Monitoring Well
- Estimated Alluvial
- Approximate Extent of CCR Unit
- APS Land Ownership
- Alluvial Aquifer Potentiometric Surface (October 2020)**
- Groundwater Elevation (Dashed Where Inferred)
- Fluoride Concentration in Groundwater (October 2020)**
- 2 mg/L
 - 4 mg/L
 - GWPS (4 mg/L; Dashed Where Inferred)

Notes:

M-44D
4998.04
4994.34
NM
*
0.81
NS
ft amsl
mg/L
CCR
GWPS

Well Identification
Alluvial/Moenkupi Moqui Groundwater elevation (ft amsl) measured in October 2020
C-Aquifer/Moenkupi Wupatki Groundwater elevation (ft amsl) measured in October 2020
Not Measured
Well not used in potentiometric surface mapping
Fluoride concentration (mg/L)
(Bolded values exceeded GWPS)
Not Sampled
Feet above mean sea level
Milligrams per liter
Coal Combustion Residuals
Groundwater Protection Standard

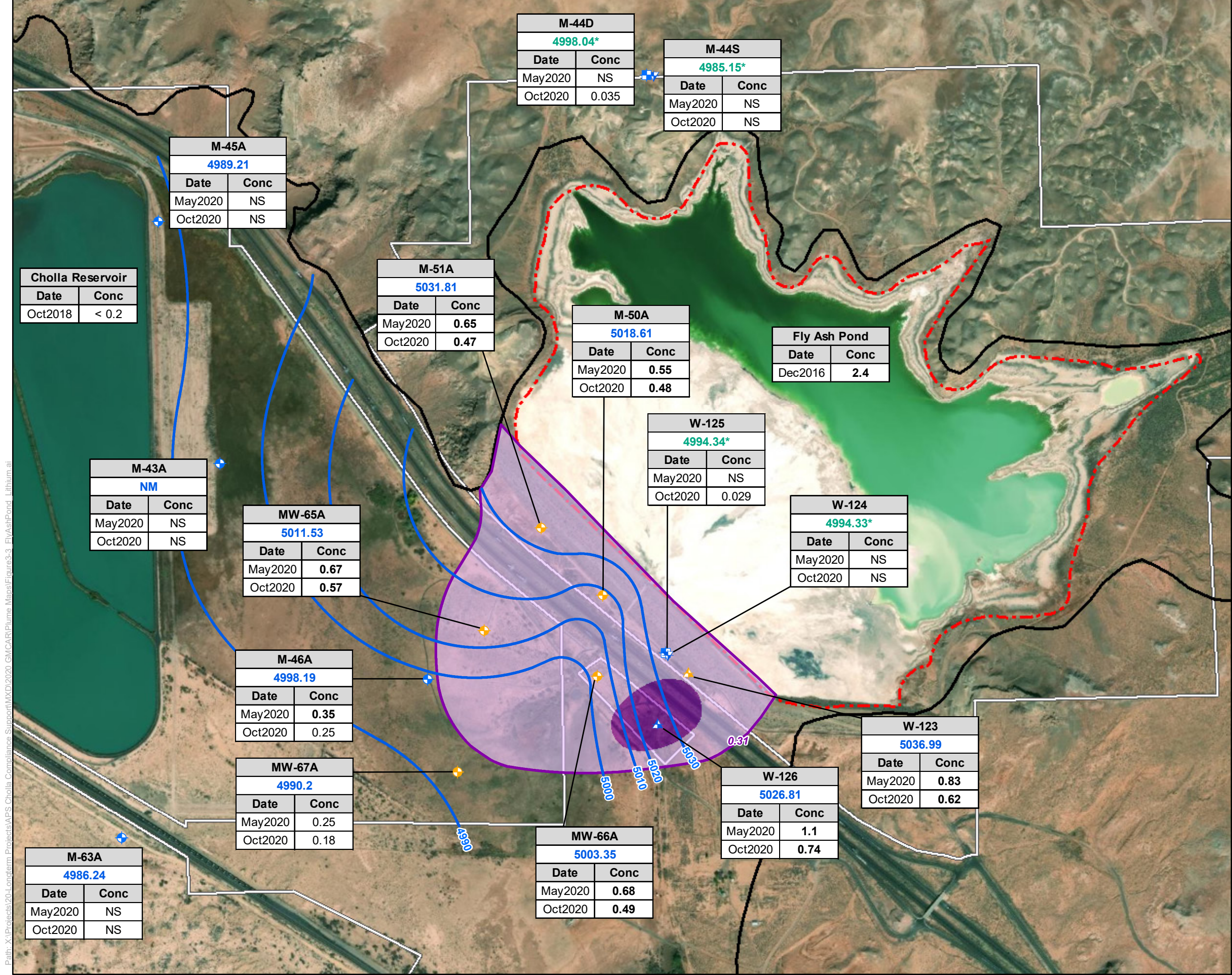


Arizona Public Service
Cholla Power Plant
Navajo County, Arizona

Figure 3-2
**Fluoride Iso-Concentration Map
for the Fly Ash Pond**

Job No. 1420182040
PM: MBH
Date: 1/28/2021
Scale: 1"= 800'

wood.
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Legend

CCR Monitoring Well Location

- Alluvial Monitoring Well
- Moenkupi Formation (Moqui Member) Monitoring Well

Supplementary Site Monitoring Well Location

- Alluvial Monitoring Well
- Moenkupi Formation (Moqui Member) Monitoring Well
- Moenkupi Formation (Wupatki Member) Monitoring Well
- C-Aquifer Monitoring Well

Estimated Alluvial Extent

Approximate Extent of CCR Unit

APS Land Ownership

Alluvial Aquifer Potentiometric Surface (October 2020)

Groundwater Elevation (Dashed Where Inferred)

Lithium Concentration in Groundwater (October 2020)

- >0.31 mg/L
- >0.62 mg/L
- GWPS (0.31 mg/L; Dashed Where Inferred)

Notes:

- M-46A**
4998.19
4994.34
NM
*
Well Identification
Alluvial/Moenkupi Moqui Groundwater elevation (ft amsl) measured in October 2020
C-Aquifer/Moenkupi Wupatki Groundwater elevation (ft amsl) measured in October 2020
Not Measured
Well not used in potentiometric surface mapping
- 0.25
Lithium concentration (mg/L)
(Bolded values exceed GWPS)
- NS
Not Sampled
- ft amsl
Feet above mean sea level
- mg/L
Milligrams per liter
- CCR
Coal Combustion Residuals
- GWPS
Groundwater Protection Standard

0 400 800
Feet

N

Figure 3-3

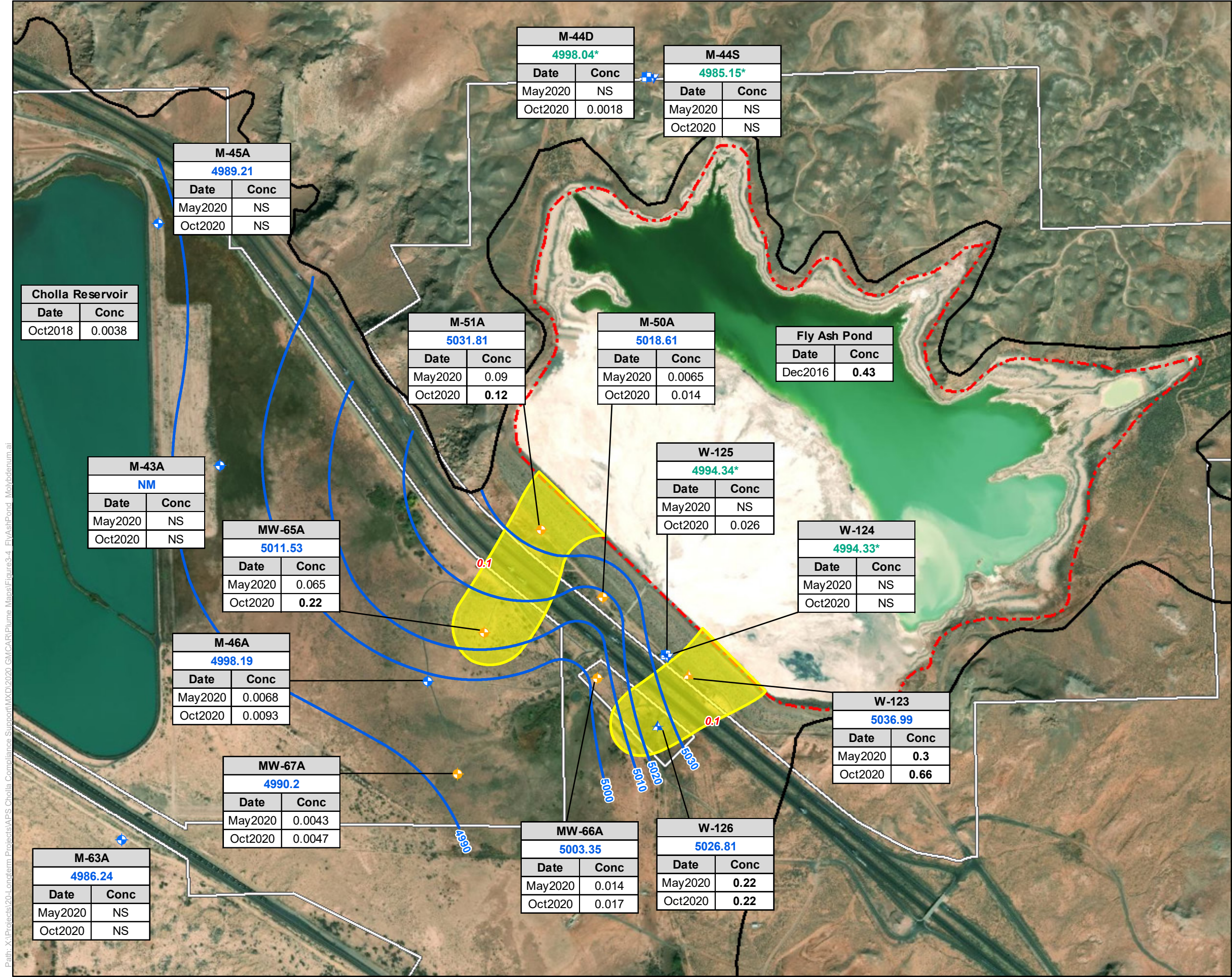
Lithium Iso-Concentration Map for the Fly Ash Pond

Job No. 1420182040
PM: MBH
Date: 1/28/2021
Scale: 1"= 800'

wood.

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Path: X:\Projects\20-L Longterm Projects\APS Cholla Compliance Support\MXD\2020 GIMCAR\Plume Maps\Figure3-3 FlyAshPond_Lithium.ai



Legend

CCR Monitoring Well Location

- Alluvial Monitoring Well
- Moenkupi Formation (Moqui Member) Monitoring Well

Supplementary Site Monitoring Well Location

- Alluvial Monitoring Well
- Moenkupi Formation (Moqui Member) Monitoring Well
- Moenkupi Formation (Wupatki Member) Monitoring Well
- C-Aquifer Monitoring Well

Estimated Alluvial

Approximate Extent of CCR Unit

APS Land Ownership

Alluvial Aquifer Potentiometric Surface (October)

Groundwater Elevation (Dashed Where Inferred)

Molybdenum Concentration in Groundwater (October 2020)

- >0.1 mg/L
- GWPS (0.1 mg/L; Dashed Where Inferred)

Notes:

MW-67A Well Identification

4990.2 Alluvial/Moenkupi Moqui Groundwater elevation (ft amsl) measured in October 2020

4994.34 C-Aquifer/Moenkupi Wupatki Groundwater elevation (ft amsl) measured in October 2020

NM Not Measured

***** Well not used in potentiometric surface mapping

0.0047 Molybdenum concentration (mg/L) (Bolded values exceed GWPS)

NS Not Sampled

ft amsl Feet above mean sea level

mg/L Milligrams per liter

CCR Coal Combustion Residuals

GWPS Groundwater Protection Standard

0 400 800 Feet

N

Arizona Public Service
Cholla Power Plant
Navajo County, Arizona

Figure 3-4

Molybdenum Iso-Concentration Map for the Fly Ash Pond

Job No.	1420182040
PM:	MBH
Date:	1/28/2021
Scale:	1"= 800'

wood.

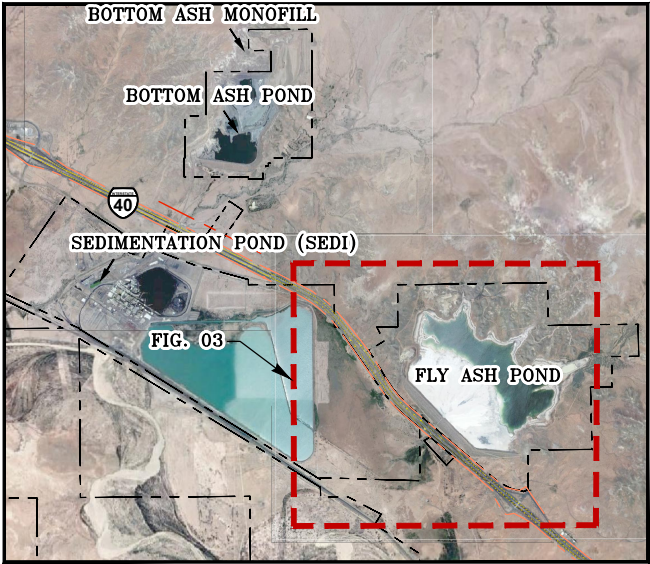
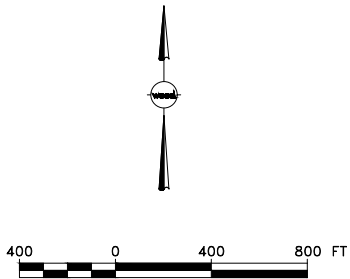
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Path: X:\Projects\20-L Longterm Projects\APS Cholla Compliance Support\MXD\2020 GIMCAR\Plume Maps\Figure3-4 FlyAshPond_Molybdenum.ai

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- LEGEND:
- EXISTING GROUND SURFACE CONTOUR EL, FEET
 - MONITORING WELLS
 - EXISTING FENCE
 - PROPERTY BOUNDARY
 - ADOT RIGHT-OF-WAY



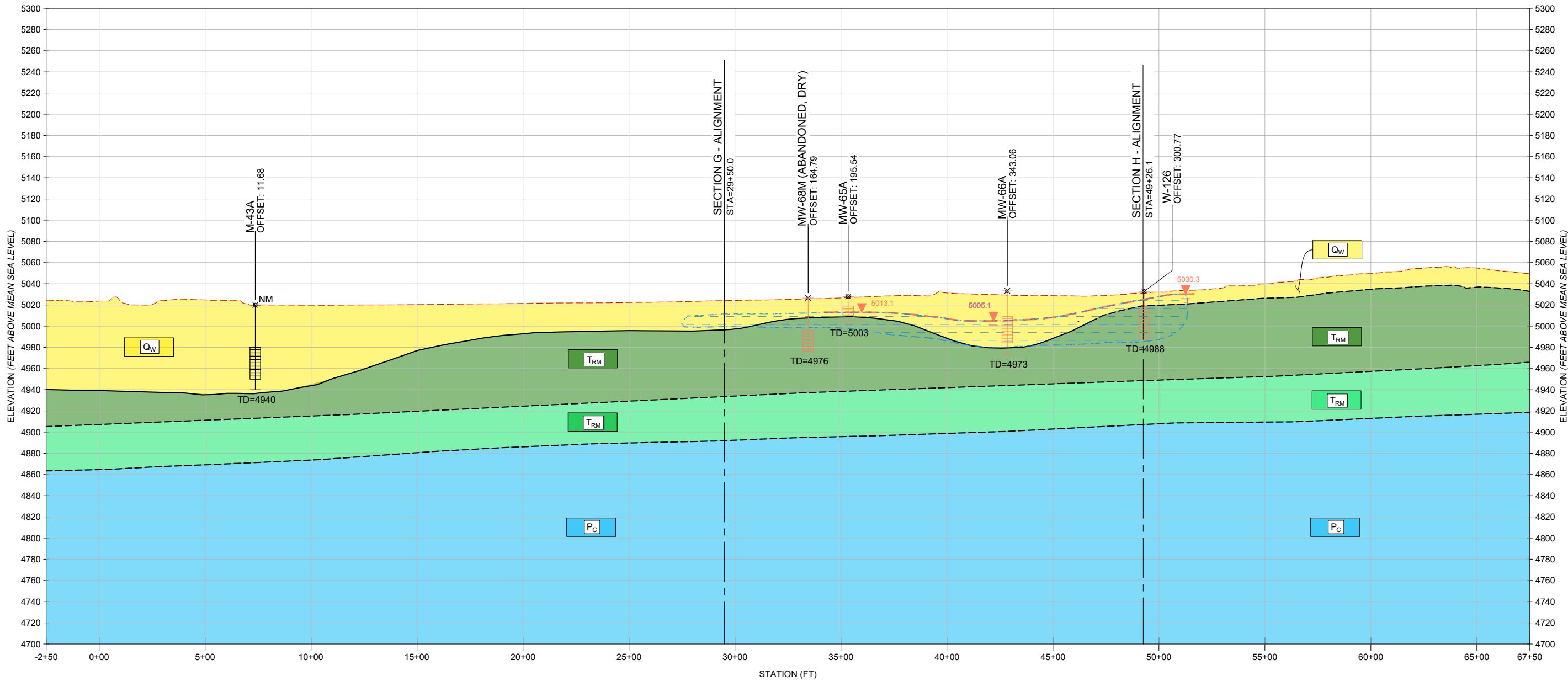
SITE LOCATION MAP

3000 0 3000 6000 FT

CLIENT					
PROJECT		CHOLLA POWER PLANT			
TITLE		PLAN VIEW FOR FAP			
DESIGNED BY	JP	CHECKED BY	DA	ISSUED FOR	
DRAWN BY	PM	APPROVED BY	MH	FINAL	
FILENAME		FIGURE No.	REV	PROJECT NO.	
2040-X-Sections		3-5	0	14-2018-2040	



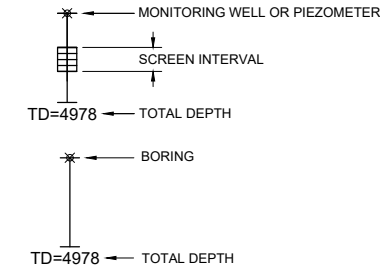
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SECTION F
FIG 3-6

LEGEND:

- EXISTING GROUND SURFACE
- ORIGINAL GROUND SURFACE
- CONTACT BETWEEN UNITS
- CONTACT DASH WHERE INFERRED



- ALLUVIUM
- MOQUI (MEMBER OF MOENKOPI)
- WUPATKI (MEMBER OF MOENKOPI)
- COCONINO SANDSTONE

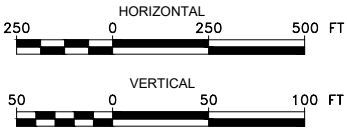


WATER LEVEL APRIL, 2020

- ALLUVIUM
- MOQUI (MEMBER OF MOENKOPI)
- NM NOT MEASURED

POTENTIOMETRIC SURFACE

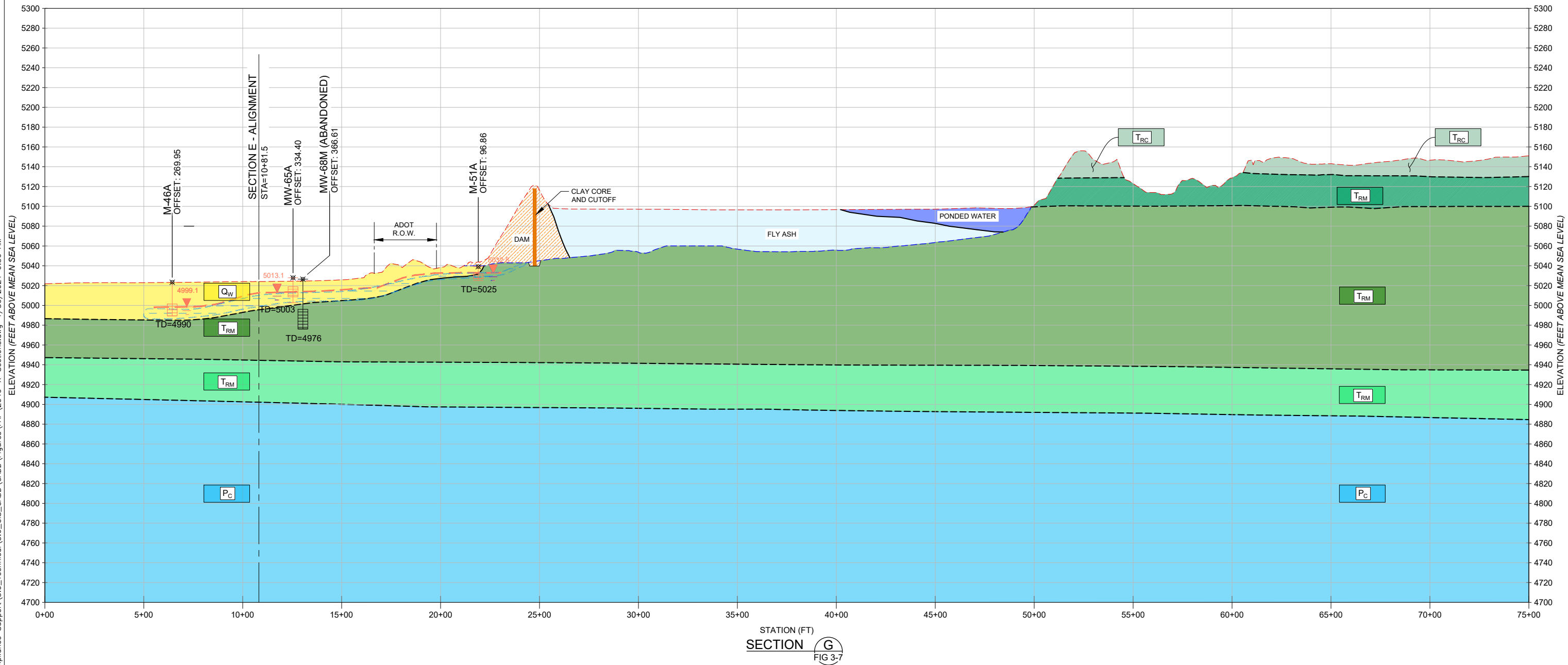
- ALLUVIUM
- MOQUI (MEMBER OF MOENKOPI)



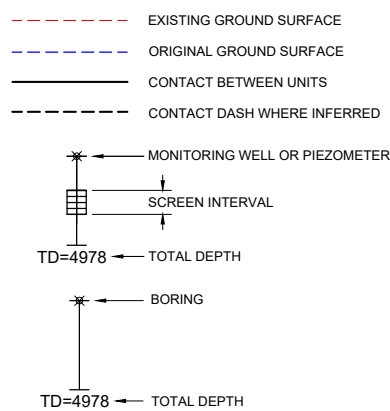
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PROJECT				
TITLE				
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DESIGNED BY	JP	CHECKED BY	DA	ISSUED FOR
DRAWN BY	PM	APPROVED BY	MH	FINAL
FILENAME		FIGURE No.	REV	PROJECT NO.
2040-X-Sections		3-6	0	14-2018-2040

wood.

G:\Environmental-Development\2018 Projects\14-2018-2040 APS Cholla Compliance Support\5.0_Technical\14-2018-2040 APS Cholla Compliance Support\5.6_GIS_CADD\CADD\Figures\FAP_2040-X-Sections.dwg-1/30/2021 9:56 AM

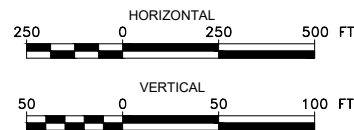


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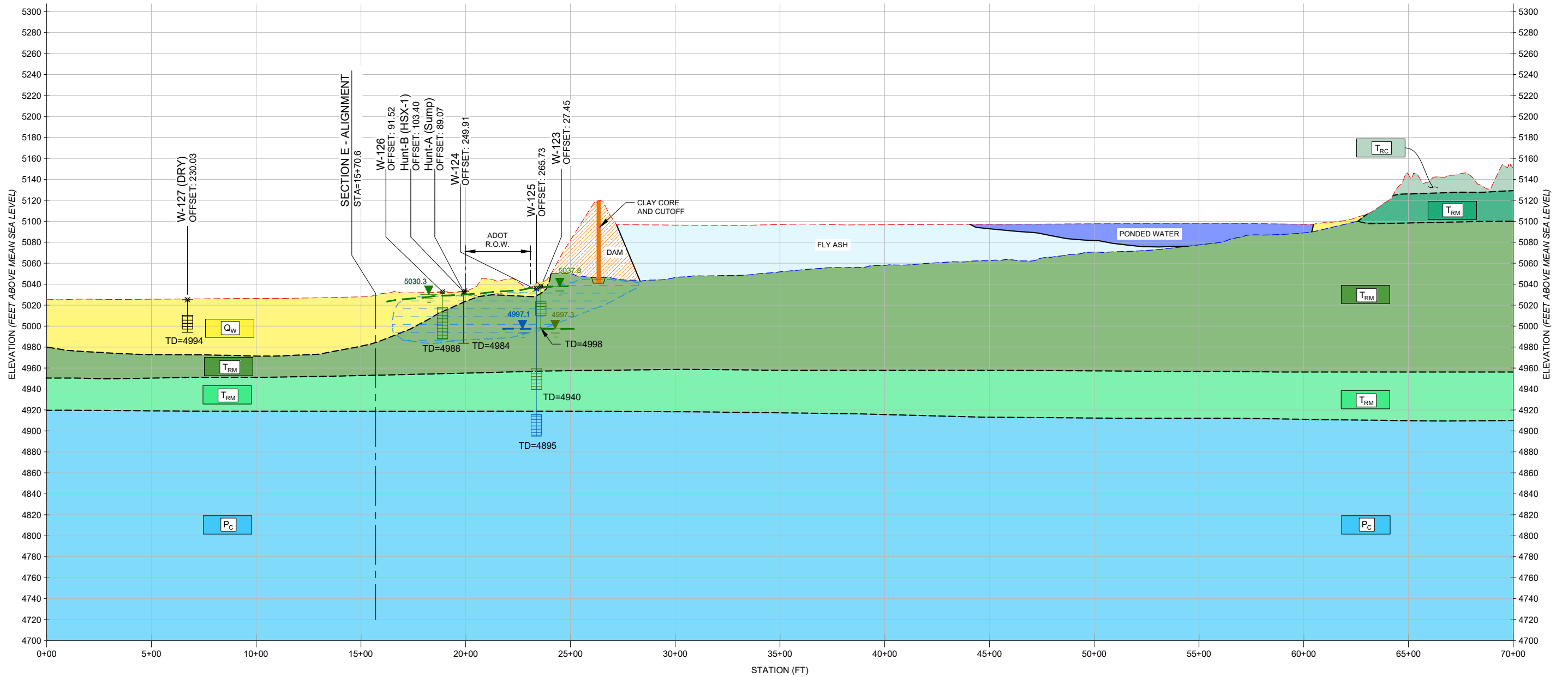
- Q_w** ALLUVIUM
- T_{RC}** CHINLE FORMATION
- T_{RM}** HOLBROOK (MEMBER OF MOENKOPI)
- T_{RM}** MOQUI (MEMBER OF MOENKOPI)
- T_{RM}** WUPATKI (MEMBER OF MOENKOPI)
- P_C** COCONINO SANDSTONE
- DAM** DAM
- FLY ASH** FLY ASH

- APPROXIMATE EXTENT OF GROUNDWATER IMPACTS**
- WATER LEVEL APRIL, 2020**
- POTENTIOMETRIC SURFACE**
- ALLUVIUM**
- MOQUI (MEMBER OF MOENKOPI)**

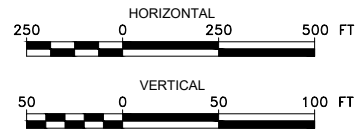
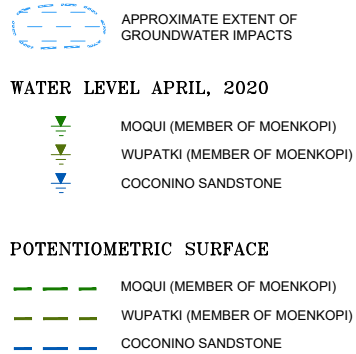
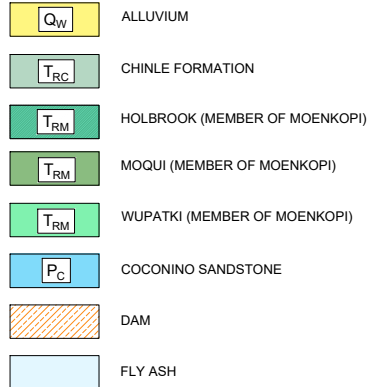
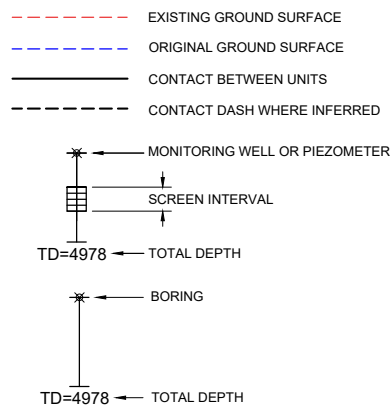


CLIENT				
PROJECT				
TITLE				
FAP CROSS SECTION G				
DESIGNED BY	JP	CHECKED BY	DA	ISSUED FOR
DRAWN BY	PM	APPROVED BY	MH	FINAL
FILENAME		FIGURE No.	REV	PROJECT NO.
2040-X-Sections		3-7	0	14-2018-2040

wood.



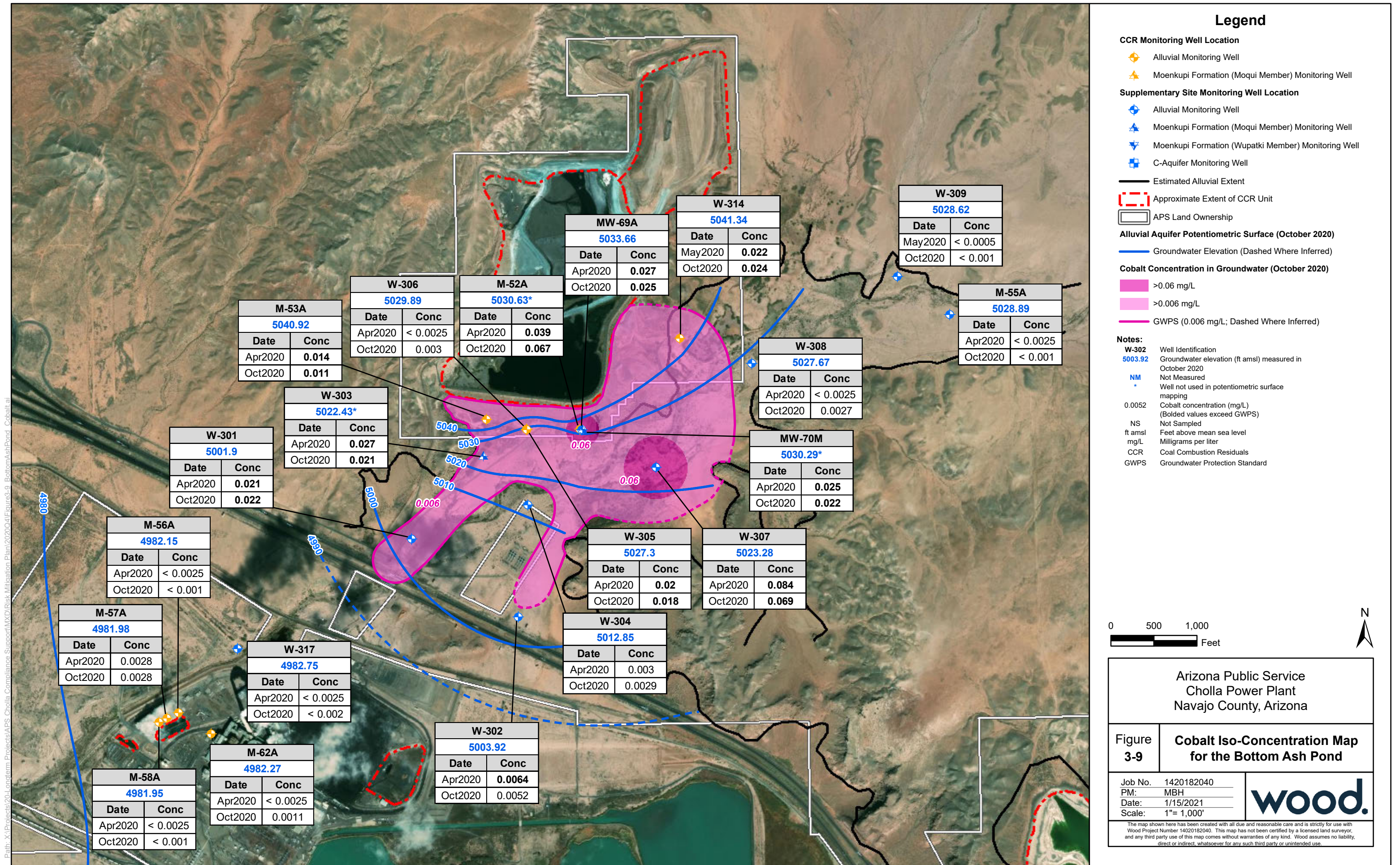
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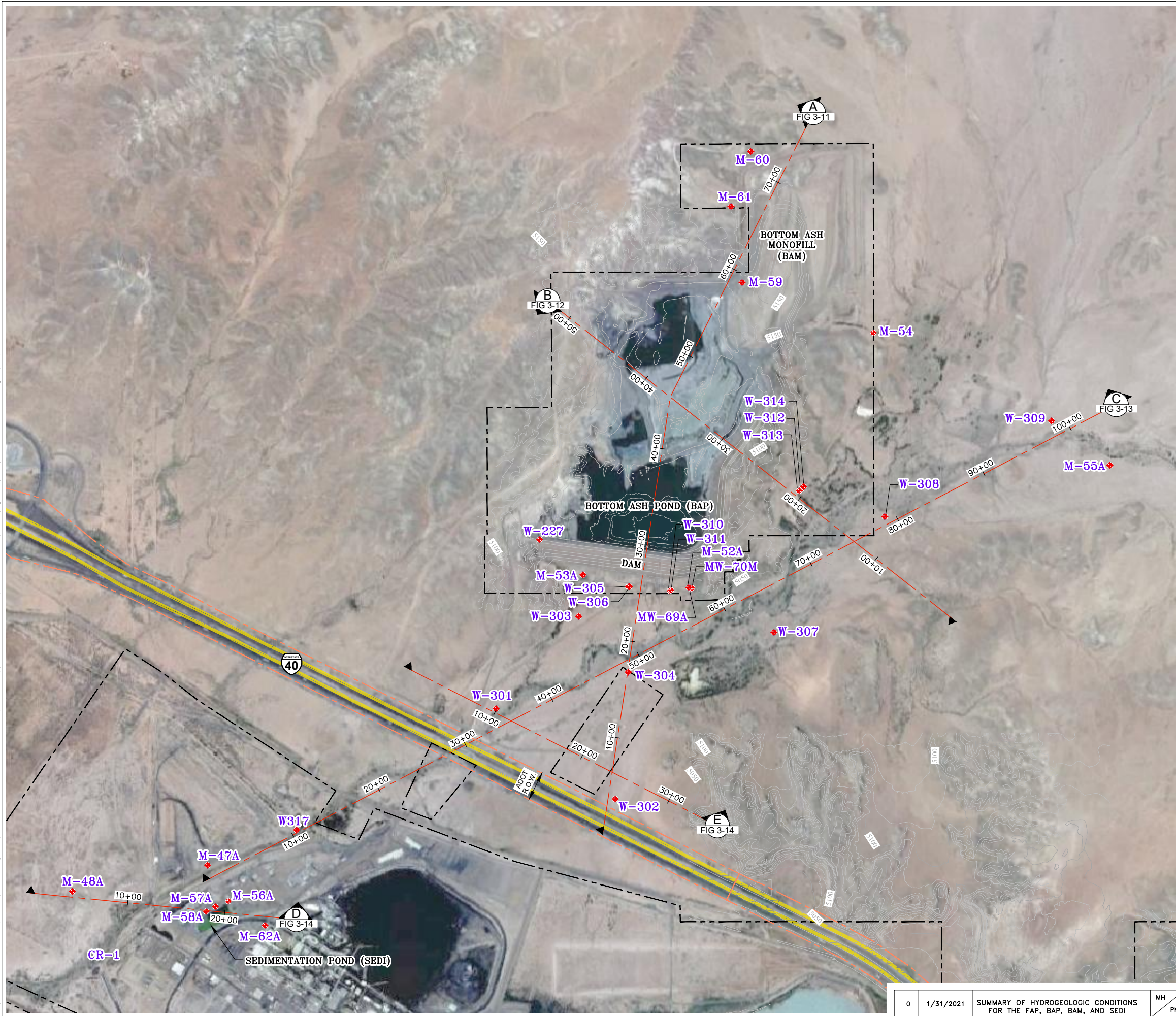
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PROJECT				
TITLE				
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DRAWN BY	PM	APPROVED BY	MH	FINAL
0		1/31/2021		SUMMARY OF HYDROGEOLOGIC CONDITIONS FOR THE FAP, BAP, BAM, AND SEDI
2040-X-Sections		FIGURE No. 3-8		REV 0
2040-X-Sections		PROJECT NO. 14-2018-2040		

wood.

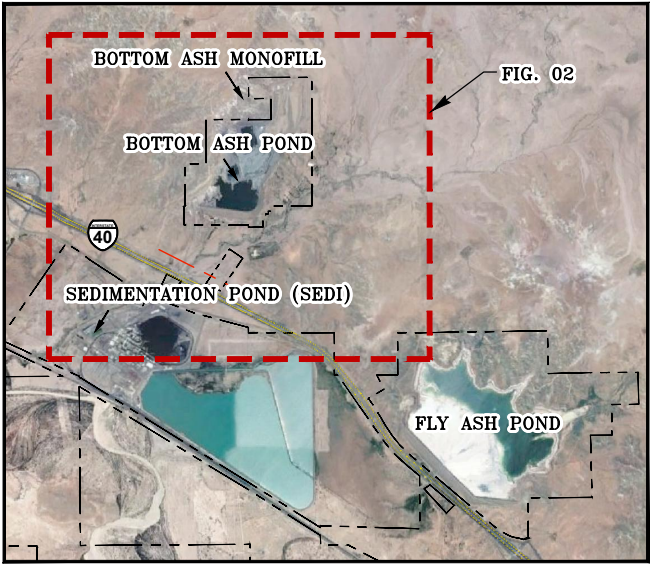
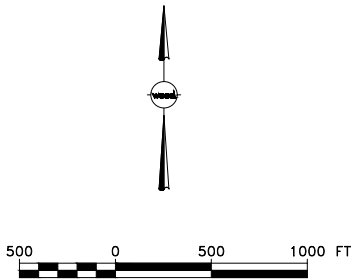
Path: X:\Projects\20-L Longterm Projects\APS Cholla Compliance Support\MXD\Risk Mitigation Plan\2020\04\Figure3-9 BottomAshPond Cobalt.ai



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- LEGEND:
- EXISTING GROUND SURFACE CONTOUR EL, FEET
 - MONITORING WELLS
 - EXISTING FENCE
 - PROPERTY BOUNDARY
 - ADOT RIGHT-OF-WAY



SITE LOCATION MAP

3000 0 3000 6000 FT

CLIENT					
PROJECT		CHOLLA POWER PLANT			
TITLE		PLAN VIEW FOR BAP, BAM AND SEDI			
DESIGNED BY	JP	CHECKED BY	DA	ISSUED FOR	
DRAWN BY	PM	APPROVED BY	MH	FINAL	
FILENAME		FIGURE No.	REV	PROJECT NO.	
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






wood.

0	1/31/2021	SUMMARY OF HYDROGEOLOGIC CONDITIONS FOR THE FAP, BAP, BAM, AND SEDI	MH PM
---	-----------	--	----------

- - - - - EXISTING GROUND SURFACE
 - - - - - ORIGINAL GROUND SURFACE
 ————— CONTACT BETWEEN UNITS
 - - - - - CONTACT DASH WHERE INFERRED





* ← MONITORING WELL OR PIEZOMETER
 ↓ SCREEN INTERVAL
 TD=4978 ← TOTAL DEPTH

* ← BORING
 TD=4978 ← TOTAL DEPTH

	ALLUVIUM
	CHINLE FORMATION
	HOLBROOK (MEMBER OF MOENKOPI)
	MOQUI (MEMBER OF MOENKOPI)
	WUPATKI (MEMBER OF MOENKOPI)
	COCONINO SANDSTONE
	DAM
	BOTTOM ASH

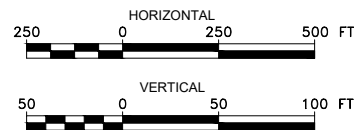



APPROXIMATE EXTENT OF
GROUNDWATER IMPACTS


	ALLUVIUM
	MOQUI (MEMBER OF MOENKOPI)
	WUPATKI (MEMBER OF MOENKOPI)
	COCONINO SANDSTONE

— ALLUVIUM
— MOQUI (MEMBER OF MOENKOPI)
— WUPATKI (MEMBER OF MOENKOPI)
— COCONINO SANDSTONE

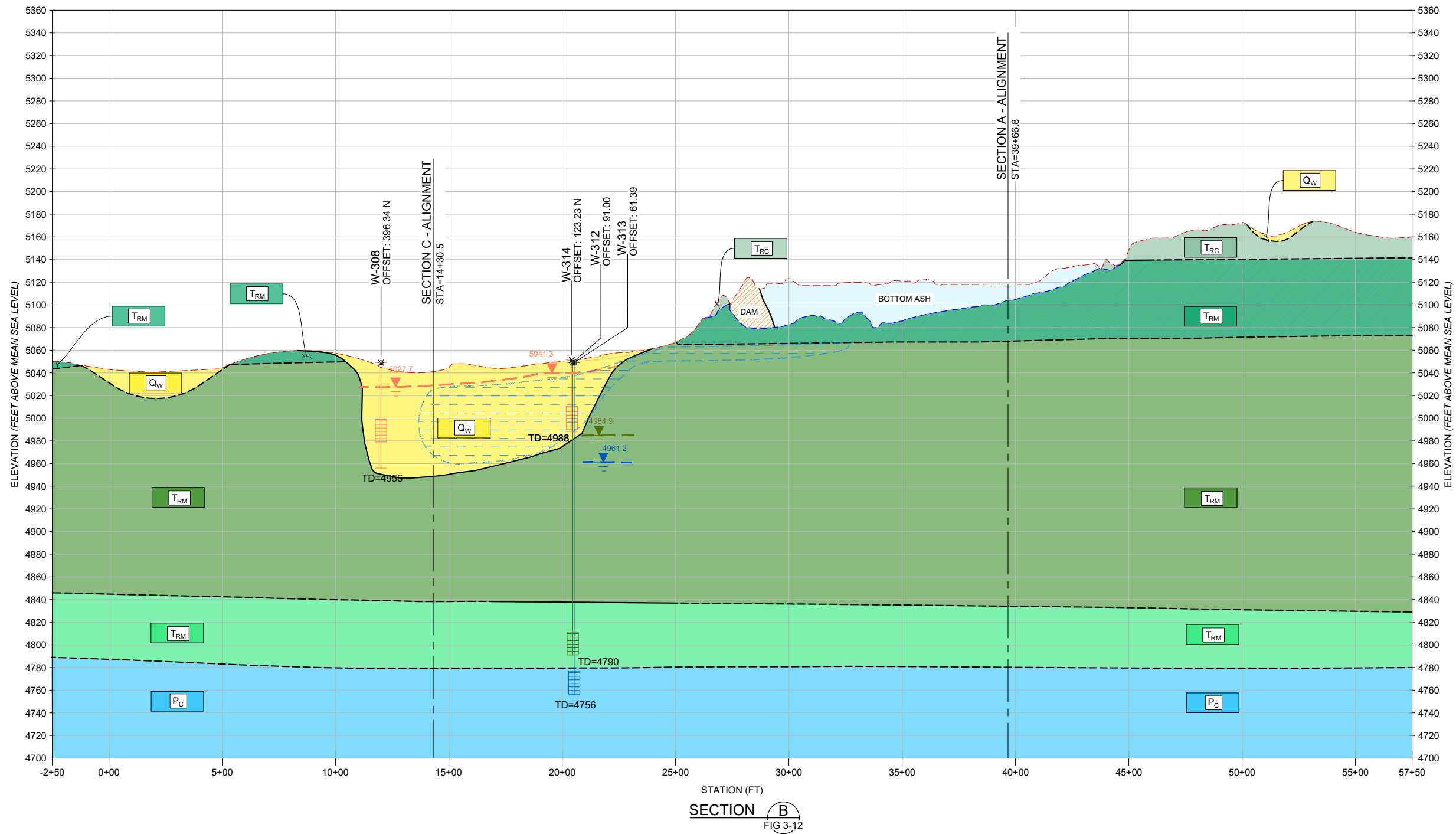
SECTION A
FIG 3-11



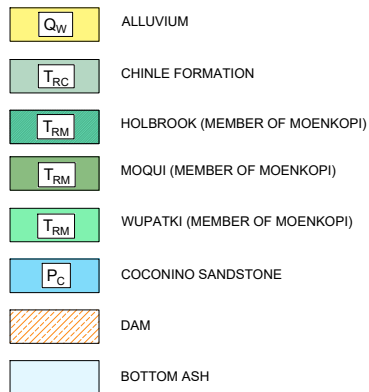
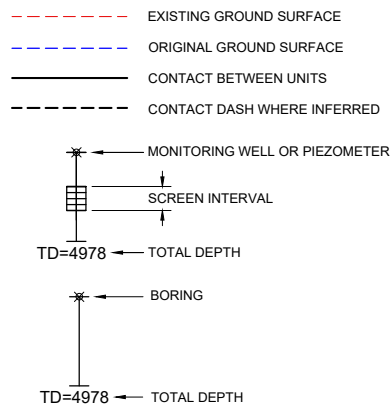
CLIENT				
PROJECT		CHOLLA POWER PLANT		
TITLE		BAP AND BAM CROSS SECTION A		
DESIGNED BY	JP	CHECKED BY	DA	ISSUED FOR
DRAWN BY	PM	APPROVED BY	MH	FINAL
FILENAME		FIGURE No.	REV	PROJECT NO.
2040-X-Sections		3-11	0	14-2018-2040



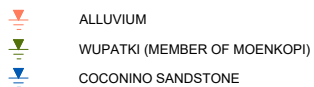
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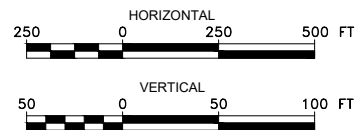
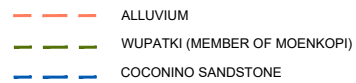
LEGEND:



WATER LEVEL APRIL, 2020



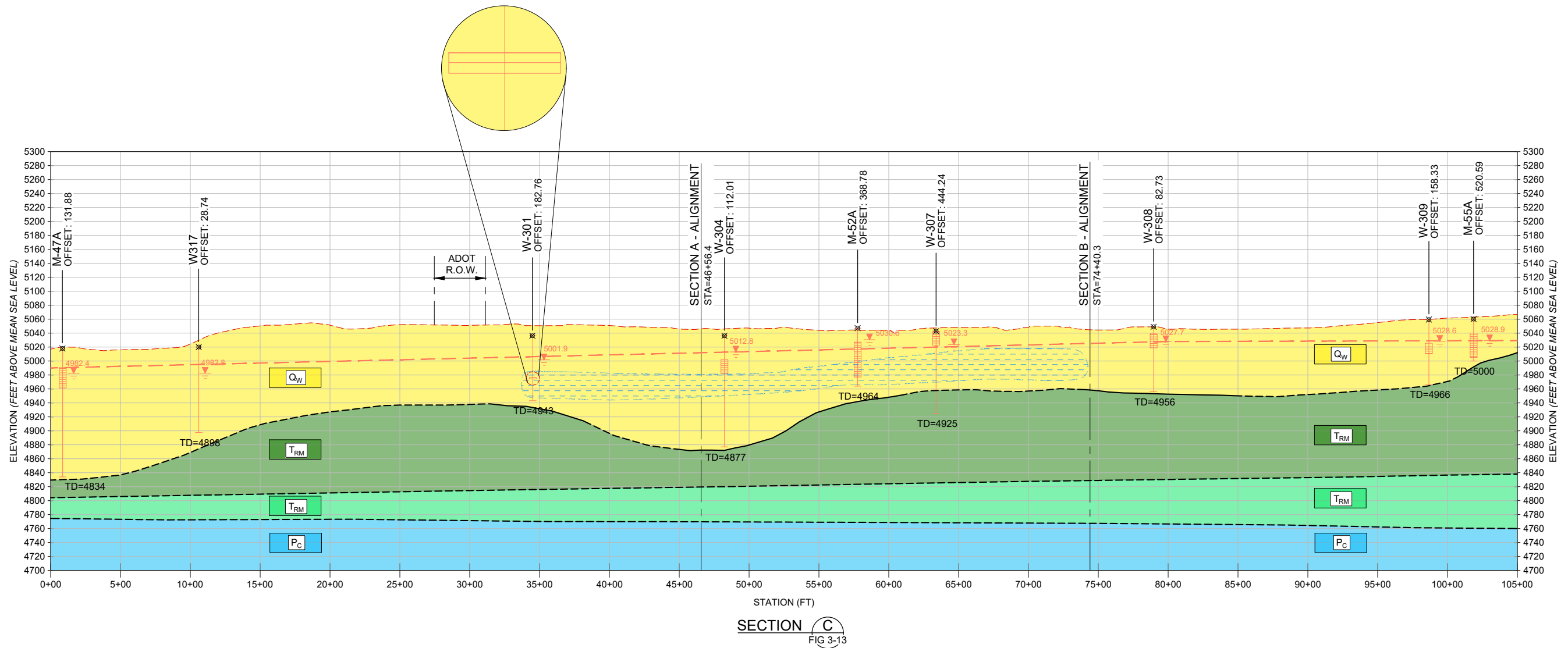
POTENTIOMETRIC SURFACE



CLIENT				
PROJECT				
CHOLLA POWER PLANT				
TITLE				
BAP CROSS SECTION B				
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DRAWN BY	PM	APPROVED BY	MH	FINAL
0		1/31/2021		SUMMARY OF HYDROGEOLOGIC CONDITIONS FOR THE FAP, BAP, BAM, AND SEDI
MH		PM		FIGURE No. 3-12
2040-X-Sections		REV 0		PROJECT NO. 14-2018-2040

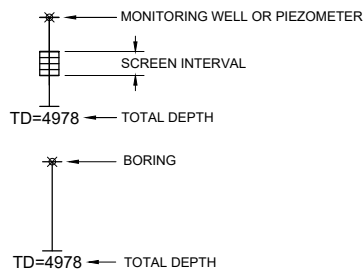
wood.

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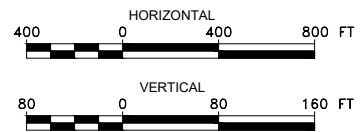
LEGEND:

- EXISTING GROUND SURFACE
- ORIGINAL GROUND SURFACE
- CONTACT BETWEEN UNITS
- CONTACT DASH WHERE INFERRED



- Q_w** ALLUVIUM
- T_{RM}** MOQUI (MEMBER OF MOENKOPI)
- T_{RM}** WUPATKI (MEMBER OF MOENKOPI)
- P_c** COCONINO SANDSTONE

- APPROXIMATE EXTENT OF GROUNDWATER IMPACTS
- WATER LEVEL APRIL, 2020**
- ALLUVIUM
- POTENTIOMETRIC SURFACE**
- ALLUVIUM



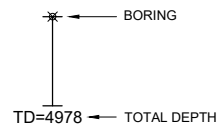
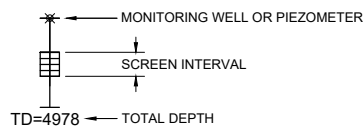
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PROJECT				
TITLE				
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DRAWN BY	PM	APPROVED BY	MH	FINAL
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2040-X-Sections		FIGURE No. 3-13		REV 0
PROJECT NO. 14-2018-2040				

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LEGEND:

- EXISTING GROUND SURFACE
- CONTACT BETWEEN UNITS
- - - CONTACT DASH WHERE INFERRED



- Q_w** ALLUVIUM
- T_{RM}** MOQUI (MEMBER OF MOENKOPI)
- T_{RM}** WUPATKI (MEMBER OF MOENKOPI)
- P_c** COCONINO SANDSTONE
- SEDIMENT

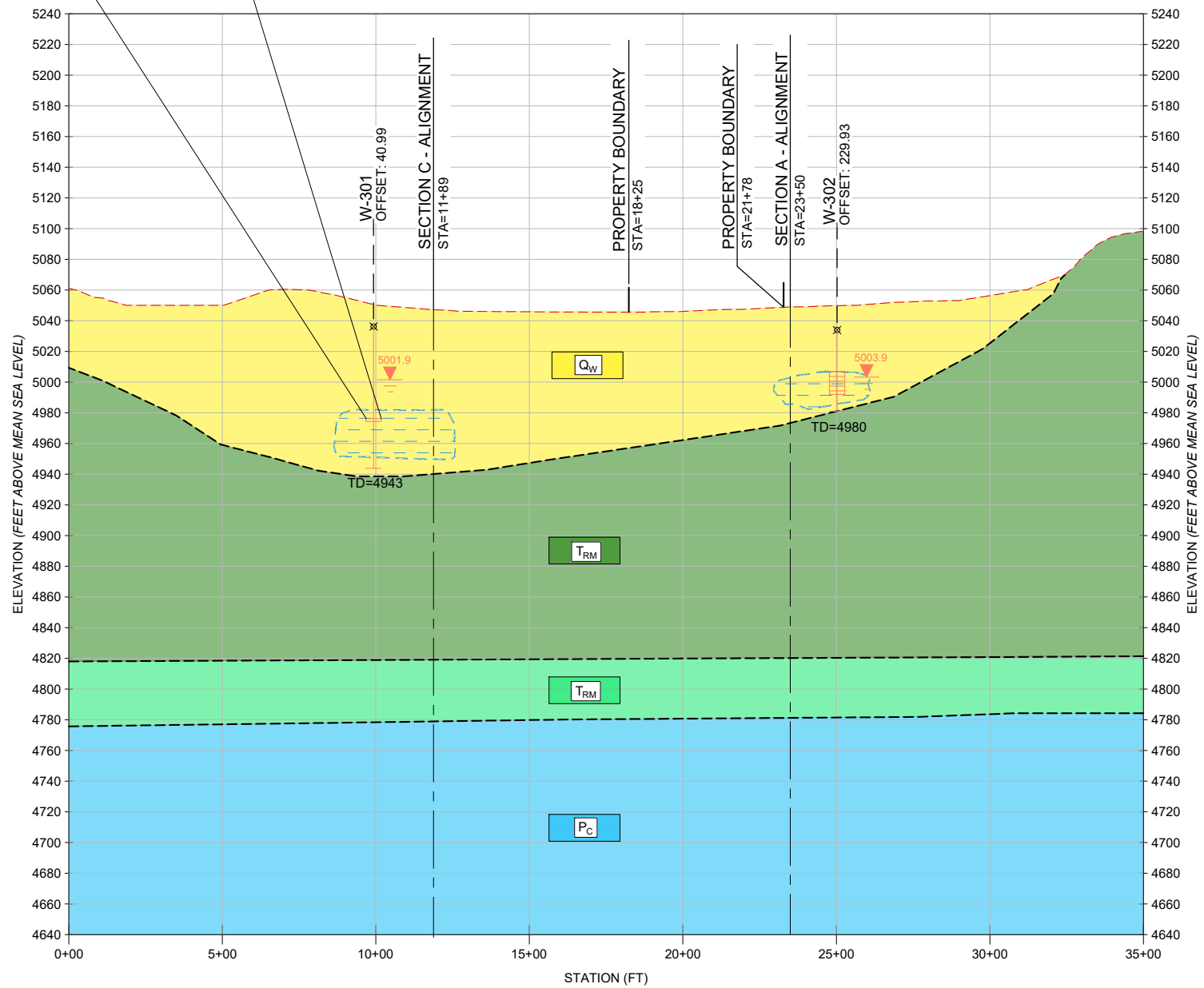


WATER LEVEL APRIL, 2020

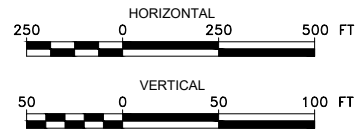
- ALLUVIUM

POTENTIOMETRIC SURFACE

- ALLUVIUM



SECTION **E**
FIG 3-14



CLIENT				
PROJECT				
TITLE				
BAP CROSS SECTION E				
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DRAWN BY	PM	APPROVED BY	MH	FINAL
0		1/31/2021		SUMMARY OF HYDROGEOLOGIC CONDITIONS FOR THE FAP, BAP, BAM, AND SEDI
2040-X-Sections		FIGURE No. 3-14		REV 0
14-2018-2040		PROJECT NO.		14-2018-2040

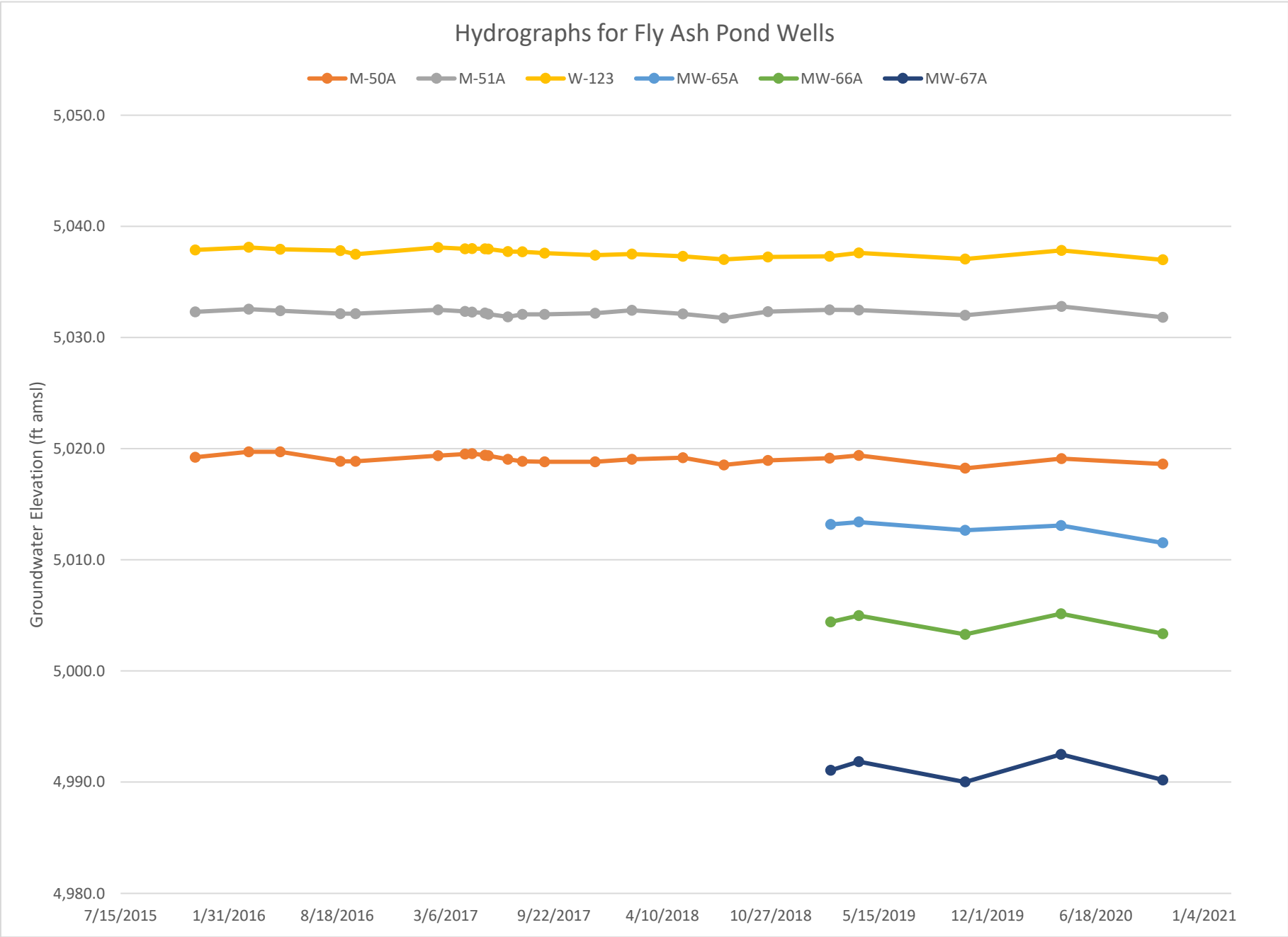


CHOLLA POWER PLANT

wood.

APPENDIX A

GROUNDWATER ELEVATION DATA AND HYDROGRAPHS



Appendix A - Groundwater Elevation Data and Hydrographs

M-50A				
Date of Measurement	Measuring Pt Elevation [ft AMSL]	Water Level [ft bmp]	GW Elevation [ft AMSL]	Well TD
11/30/2015	5038.18	18.95	5019.23	
3/8/2016	5038.18	18.47	5019.71	
5/5/2016	5038.18	18.46	5019.72	
8/24/2016	5038.18	19.32	5018.86	
9/21/2016	5038.18	19.33	5018.85	
2/20/2017	5038.18	18.81	5019.37	
4/11/2017	5038.18	18.66	5019.52	
4/24/2017	5038.18	18.62	5019.56	
5/18/2017	5038.18	18.77	5019.41	
5/24/2017	5038.18	18.81	5019.37	
6/29/2017	5038.18	19.13	5019.05	
7/26/2017	5038.18	19.33	5018.85	
9/5/2017	5038.18	19.37	5018.81	
12/7/2017	5038.18	19.36	5018.82	
2/13/2018	5038.18	19.13	5019.05	
5/18/2018	5038.18	18.99	5019.19	
8/2/2018	5038.18	19.65	5018.53	
10/22/2018	5038.18	19.23	5018.95	
2/13/2019	5038.18	19.03	5019.15	
4/8/2019	5038.18	18.79	5019.39	
10/21/2019	5038.18	19.94	5018.24	
4/16/2020	5038.18	19.07	5019.11	
10/20/2020	5038.18	19.57	5018.61	

Maximum Observed: 5019.72 ft AMSL

Minimum Observed: 5018.24 ft AMSL

Range: 1.48 ft

Appendix A - Groundwater Elevation Data and Hydrographs

M-51A				
Date of Measurement	Measuring Pt Elevation [ft AMSL]	Water Level [ft bmp]	GW Elevation [ft AMSL]	Well TD
11/30/2015	5041.77	9.47	5032.30	
3/8/2016	5041.77	9.23	5032.54	
5/5/2016	5041.77	9.37	5032.40	
8/24/2016	5041.77	9.62	5032.15	
9/21/2016	5041.77	9.63	5032.14	
2/20/2017	5041.77	9.29	5032.48	
4/11/2017	5041.77	9.42	5032.35	
4/24/2017	5041.77	9.48	5032.29	
5/18/2017	5041.77	9.57	5032.20	
5/24/2017	5041.77	9.66	5032.11	
6/29/2017	5041.77	9.91	5031.86	
7/26/2017	5041.77	9.68	5032.09	
9/5/2017	5041.77	9.7	5032.07	
12/7/2017	5041.77	9.58	5032.19	
2/13/2018	5041.77	9.33	5032.44	
5/18/2018	5041.77	9.64	5032.13	
8/2/2018	5041.77	10.01	5031.76	
10/22/2018	5041.77	9.44	5032.33	
2/13/2019	5041.77	9.28	5032.49	
4/8/2019	5041.77	9.3	5032.47	
10/21/2019	5041.77	9.78	5031.99	
4/16/2020	5041.77	8.97	5032.8	
10/20/2020	5041.77	9.96	5031.81	

Maximum Observed: 5032.80 ft AMSL

Minimum Observed: 5031.76 ft AMSL

Range: 1.04 ft

Appendix A - Groundwater Elevation Data and Hydrographs

W-123				
Date of Measurement	Measuring Pt Elevation [ft AMSL]	Water Level [ft bmp]	GW Elevation [ft AMSL]	Well TD
11/30/2015	5039.84	1.97	5037.87	
3/8/2016	5039.84	1.73	5038.11	
5/5/2016	5039.84	1.90	5037.94	
8/24/2016	5039.84	2.02	5037.82	
9/21/2016	5039.84	2.35	5037.49	
2/20/2017	5039.84	1.74	5038.10	
4/11/2017	5039.84	1.86	5037.98	
4/24/2017	5039.84	1.85	5037.99	
5/18/2017	5039.84	1.87	5037.97	
5/24/2017	5039.84	1.88	5037.96	
6/29/2017	5039.84	2.11	5037.73	
7/26/2017	5039.84	2.12	5037.72	
9/5/2017	5039.84	2.25	5037.59	
12/7/2017	5039.84	2.43	5037.41	
2/13/2018	5039.84	2.34	5037.50	
5/18/2018	5039.84	2.53	5037.31	
8/2/2018	5039.84	2.82	5037.02	
10/22/2018	5039.84	2.60	5037.24	
2/13/2019	5039.84	2.53	5037.31	
4/8/2019	5039.84	2.24	5037.60	
10/21/2019	5039.84	2.78	5037.06	
4/16/2020	5039.84	2.01	5037.83	
10/20/2020	5039.84	2.85	5036.99	

Maximum Observed: 5038.11 ft AMSL

Minimum Observed: 5036.99 ft AMSL

Range: 1.12 ft

Appendix A - Groundwater Elevation Data and Hydrographs

MW-65A				
Date of Measurement	Measuring Pt Elevation [ft AMSL]	Water Level [ft bmp]	GW Elevation [ft AMSL]	Well TD
2/15/2019	5027.86	14.67	5013.19	
4/8/2019	5027.86	14.45	5013.41	
10/21/2019	5027.86	15.21	5012.65	
4/15/2020	5027.86	14.78	5013.08	
10/20/2020	5027.86	16.33	5011.53	

Maximum Observed: 5013.41 ft AMSL

Minimum Observed: 5012.65 ft AMSL

Range: 0.76 ft

Appendix A - Groundwater Elevation Data and Hydrographs

MW-66A				
Date of Measurement	Measuring Pt Elevation [ft AMSL]	Water Level [ft bmp]	GW Elevation [ft AMSL]	Well TD
2/15/2019	5033.35	28.93	5004.42	
4/8/2019	5033.35	28.36	5004.99	
10/21/2019	5033.35	30.05	5003.30	
4/15/2020	5033.35	28.2	5005.15	
10/20/2020	5033.35	30	5003.35	

Maximum Observed: 5004.99 ft AMSL

Minimum Observed: 5004.42 ft AMSL

Range: 0.57 ft

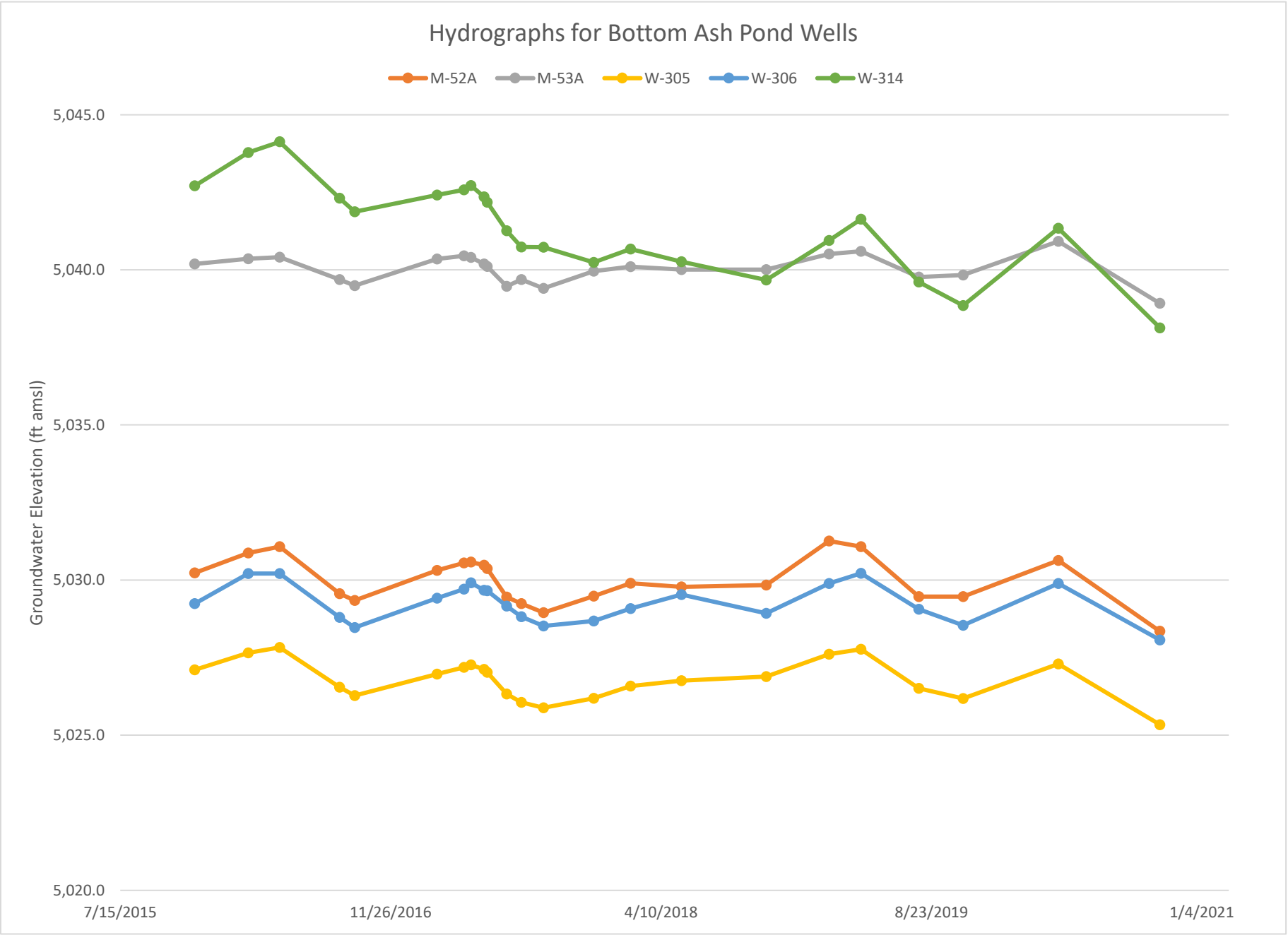
Appendix A - Groundwater Elevation Data and Hydrographs

MW-67A				
Date of Measurement	Measuring Pt Elevation [ft AMSL]	Water Level [ft bmp]	GW Elevation [ft AMSL]	Well TD
2/15/2019	5025.38	34.32	4991.06	
4/8/2019	5025.38	33.54	4991.84	
10/21/2019	5025.38	35.36	4990.02	
4/15/2020	5025.38	32.88	4992.5	
10/20/2020	5025.38	35.18	4990.2	

Maximum Observed: 4991.84 ft AMSL

Minimum Observed: 4991.06 ft AMSL

Range: 0.78 ft



Appendix A - Groundwater Elevation Data and Hydrographs

M-52A				
Date of Measurement	Measuring Pt Elevation [ft AMSL]	Water Level [ft bmp]	GW Elevation [ft AMSL]	Well TD
11/30/2015	5049.36	19.13	5030.23	
3/8/2016	5049.36	18.49	5030.87	
5/5/2016	5049.36	18.28	5031.08	
8/24/2016	5049.36	19.80	5029.56	
9/21/2016	5049.36	20.02	5029.34	
2/20/2017	5049.36	19.05	5030.31	
4/11/2017	5049.36	18.81	5030.55	
4/24/2017	5049.36	18.78	5030.58	
5/18/2017	5049.36	18.88	5030.48	
5/24/2017	5049.36	18.99	5030.37	
6/29/2017	5049.36	19.91	5029.45	
7/26/2017	5049.36	20.12	5029.24	
9/5/2017	5049.36	20.41	5028.95	
12/7/2017	5049.36	19.88	5029.48	
2/13/2018	5049.36	19.46	5029.90	
5/18/2018	5049.36	19.58	5029.78	
10/22/2018	5049.36	19.52	5029.84	
2/15/2019	5049.36	18.10	5031.26	
4/15/2019	5049.36	18.28	5031.08	
7/31/2019	5049.36	19.89	5029.47	
10/21/2019	5049.36	19.89	5029.47	
4/14/2020	5049.36	18.73	5030.63	
10/19/2020	5049.36	21.01	5028.35	

Maximum Observed: 5031.26 ft AMSL

Minimum Observed: 5028.95 ft AMSL

Range: 2.31 ft

Appendix A - Groundwater Elevation Data and Hydrographs

M-53A				
Date of Measurement	Measuring Pt Elevation [ft AMSL]	Water Level [ft bmp]	GW Elevation [ft AMSL]	Well TD
11/30/2015	5044.68	4.49	5040.19	
3/8/2016	5044.68	4.32	5040.36	
5/5/2016	5044.68	4.27	5040.41	
8/24/2016	5044.68	4.99	5039.69	
9/21/2016	5044.68	5.19	5039.49	
2/20/2017	5044.68	4.33	5040.35	
4/11/2017	5044.68	4.23	5040.45	
4/24/2017	5044.68	4.28	5040.40	
5/18/2017	5044.68	4.49	5040.19	
5/24/2017	5044.68	4.57	5040.11	
6/29/2017	5044.68	5.21	5039.47	
7/26/2017	5044.68	4.99	5039.69	
9/5/2017	5044.68	5.28	5039.40	
12/7/2017	5044.68	4.72	5039.96	
2/13/2018	5044.68	4.58	5040.10	
5/18/2018	5044.68	4.67	5040.01	
10/22/2018	5044.68	4.67	5040.01	
2/15/2019	5044.68	4.17	5040.51	
4/15/2019	5044.68	4.08	5040.60	
7/31/2019	5044.68	4.91	5039.77	
10/21/2019	5044.68	4.85	5039.83	
4/14/2020	5044.68	3.76	5040.92	
10/19/2020	5044.68	5.76	5038.92	

Maximum Observed: 5040.92 ft AMSL

Minimum Observed: 5038.92 ft AMSL

Range: 2.00 ft

Appendix A - Groundwater Elevation Data and Hydrographs

W-305				
Date of Measurement	Measuring Pt Elevation [ft AMSL]	Water Level [ft bmp]	GW Elevation [ft AMSL]	Well TD
11/30/2015	5046.80	19.69	5027.11	
3/8/2016	5046.80	19.15	5027.65	
5/5/2016	5046.80	18.97	5027.83	
8/24/2016	5046.80	20.25	5026.55	
9/21/2016	5046.80	20.52	5026.28	
2/20/2017	5046.80	19.83	5026.97	
4/11/2017	5046.80	19.61	5027.19	
4/24/2017	5046.80	19.53	5027.27	
5/18/2017	5046.80	19.68	5027.12	
5/24/2017	5046.80	19.77	5027.03	
6/29/2017	5046.80	20.47	5026.33	
7/26/2017	5046.80	20.74	5026.06	
9/5/2017	5046.80	20.92	5025.88	
12/7/2017	5046.80	20.61	5026.19	
2/13/2018	5046.80	20.22	5026.58	
5/18/2018	5046.80	20.04	5026.76	
10/22/2018	5046.80	19.91	5026.89	
2/15/2019	5046.80	19.19	5027.61	
4/15/2019	5046.80	19.03	5027.77	
7/31/2019	5046.80	20.29	5026.51	
10/21/2019	5046.80	20.62	5026.18	
4/14/2020	5046.80	19.5	5027.3	
10/19/2020	5046.80	21.46	5025.34	

Maximum Observed: 5027.83 ft AMSL

Minimum Observed: 5025.34 ft AMSL

Range: 2.49 ft

Appendix A - Groundwater Elevation Data and Hydrographs

W-306				
Date of Measurement	Measuring Pt Elevation [ft AMSL]	Water Level [ft bmp]	GW Elevation [ft AMSL]	Well TD
11/30/2015	5046.74	17.50	5029.24	
3/8/2016	5046.74	16.53	5030.21	
5/5/2016	5046.74	16.53	5030.21	
8/24/2016	5046.74	17.94	5028.80	
9/21/2016	5046.74	18.27	5028.47	
2/20/2017	5046.74	17.32	5029.42	
4/11/2017	5046.74	17.03	5029.71	
4/24/2017	5046.74	16.83	5029.91	
5/18/2017	5046.74	17.07	5029.67	
5/24/2017	5046.74	17.08	5029.66	
6/29/2017	5046.74	17.58	5029.16	
7/26/2017	5046.74	17.92	5028.82	
9/5/2017	5046.74	18.22	5028.52	
12/7/2017	5046.74	18.06	5028.68	
2/13/2018	5046.74	17.66	5029.08	
5/18/2018	5046.74	17.21	5029.53	
10/22/2018	5046.74	17.81	5028.93	
2/15/2019	5046.74	16.85	5029.89	
4/15/2019	5046.74	16.52	5030.22	
7/31/2019	5046.74	17.68	5029.06	
10/21/2019	5046.74	18.2	5028.54	
4/14/2020	5046.74	16.85	5029.89	
10/19/2020	5046.74	18.67	5028.07	

Maximum Observed: 5030.22 ft AMSL

Minimum Observed: 5028.07 ft AMSL

Range: 2.15 ft

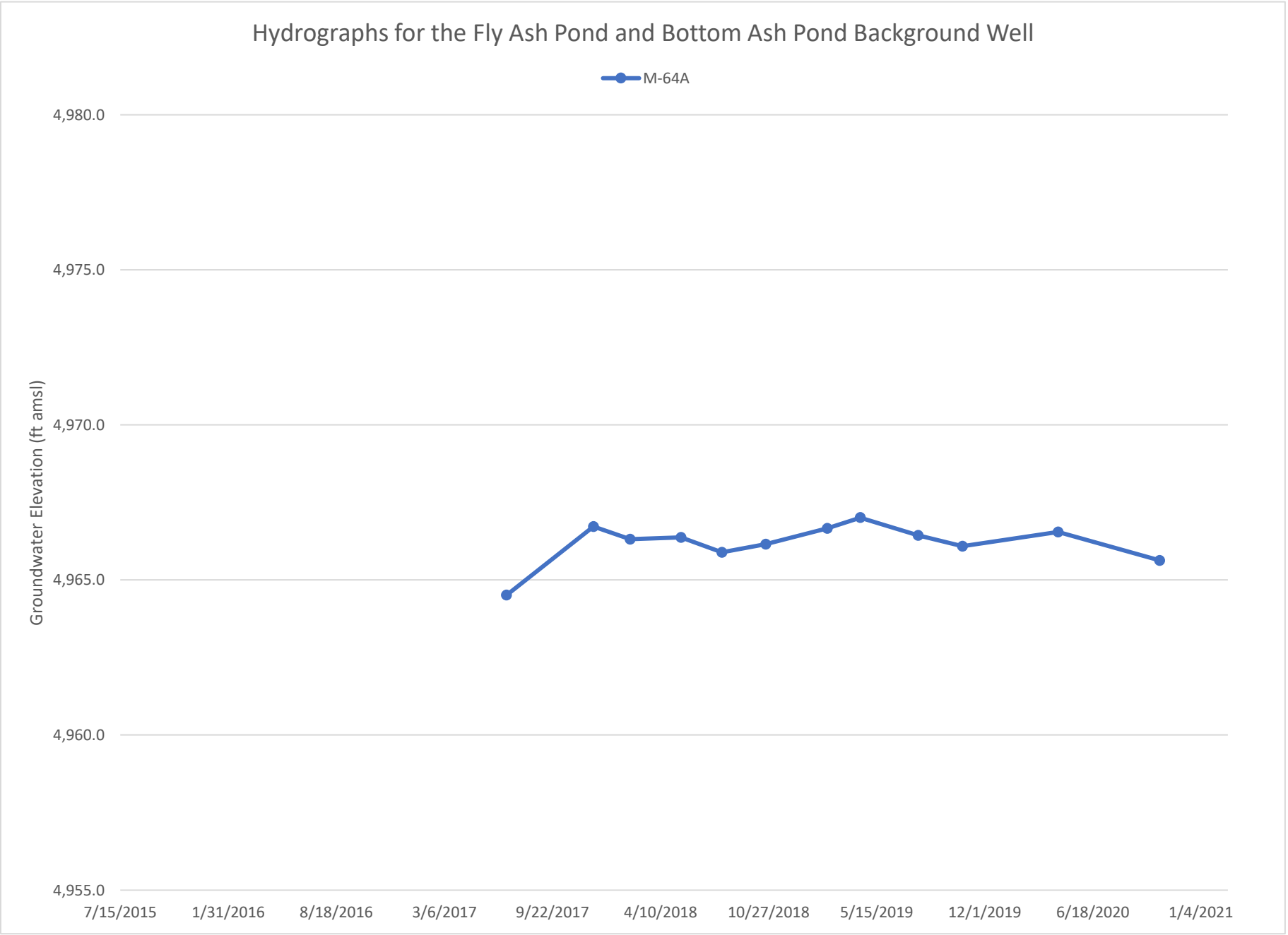
Appendix A - Groundwater Elevation Data and Hydrographs

W-314				
Date of Measurement	Measuring Pt Elevation [ft AMSL]	Water Level [ft bmp]	GW Elevation [ft AMSL]	Well TD
11/30/2015	5051.10	8.39	5042.71	
3/8/2016	5051.10	7.32	5043.78	
5/5/2016	5051.10	6.97	5044.13	
8/24/2016	5051.10	8.79	5042.31	
9/21/2016	5051.10	9.23	5041.87	
2/20/2017	5051.10	8.69	5042.41	
4/11/2017	5051.10	8.52	5042.58	
4/24/2017	5051.10	8.38	5042.72	
5/18/2017	5051.10	8.75	5042.35	
5/24/2017	5051.10	8.92	5042.18	
6/29/2017	5051.10	9.84	5041.26	
7/26/2017	5051.10	10.36	5040.74	
9/5/2017	5051.10	10.37	5040.73	
12/7/2017	5051.10	10.86	5040.24	
2/13/2018	5051.10	10.43	5040.67	
5/18/2018	5051.10	10.84	5040.26	
10/22/2018	5051.10	11.43	5039.67	
2/15/2019	5051.10	10.15	5040.95	
4/15/2019	5051.10	9.47	5041.63	
7/31/2019	5051.10	11.49	5039.61	
10/21/2019	5051.10	12.25	5038.85	
4/14/2020	5051.10	9.76	5041.34	
10/19/2020	5051.10	12.97	5038.13	

Maximum Observed: 5044.13 ft AMSL

Minimum Observed: 5038.13 ft AMSL

Range: 6.00 ft



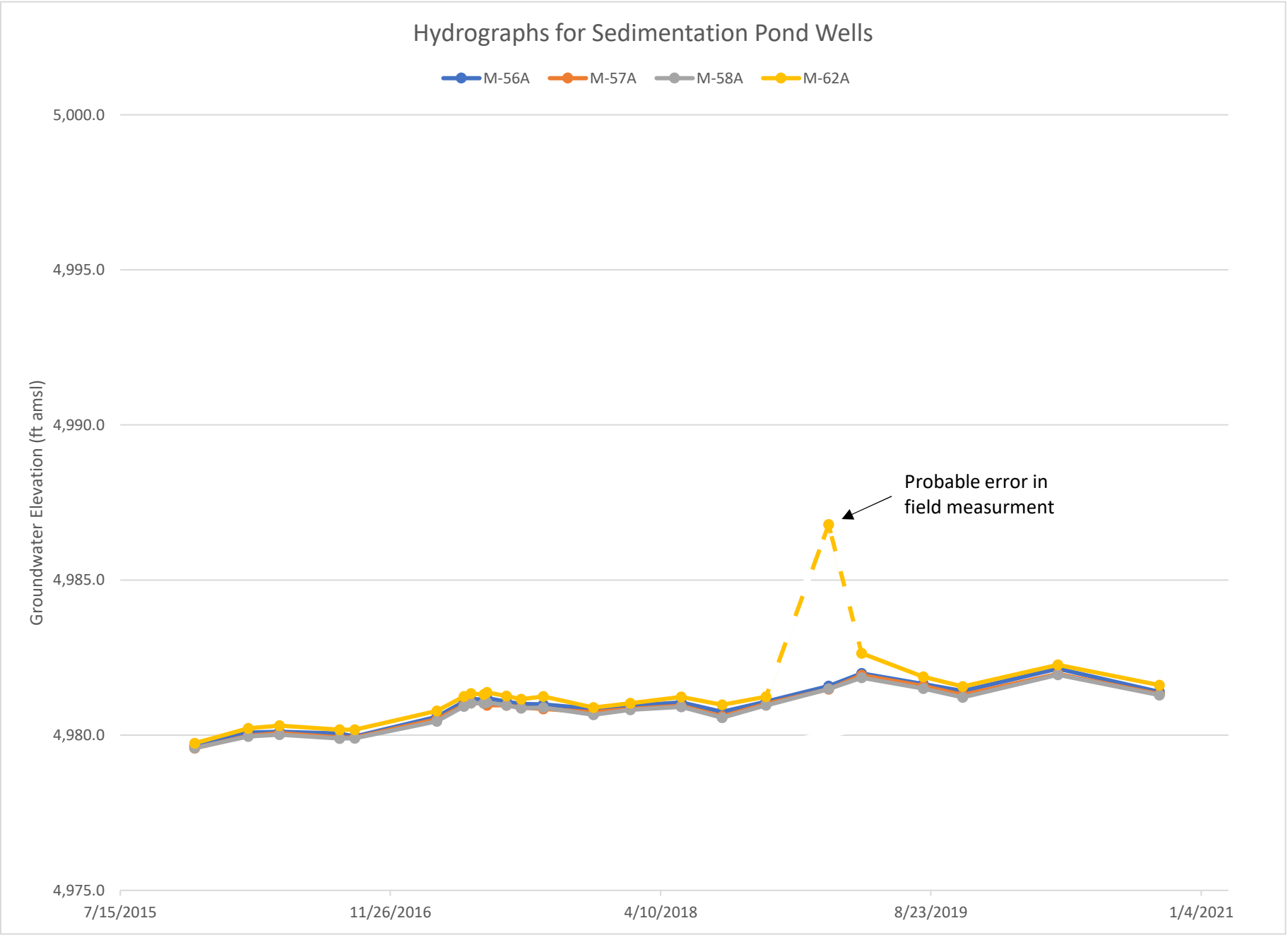
Appendix A - Groundwater Elevation Data and Hydrographs

M-64A				
Date of Measurement	Measuring Pt Elevation [ft AMSL]	Water Level [ft bmp]	GW Elevation [ft AMSL]	Well TD
6/29/2017	4991.90	27.39	4964.51	
12/7/2017	4991.90	25.18	4966.72	
2/13/2018	4991.90	25.59	4966.31	
5/18/2018	4991.90	25.53	4966.37	
8/2/2018	4991.90	26.01	4965.89	
10/22/2018	4991.90	25.75	4966.15	
2/13/2019	4991.90	25.24	4966.66	
4/15/2019	4991.90	24.89	4967.01	
7/31/2019	4991.90	25.46	4966.44	
10/21/2019	4991.90	25.81	4966.09	
4/15/2020	4991.90	25.35	4966.55	
10/20/2020	4991.90	26.27	4965.63	

Maximum Observed: 4967.01 ft AMSL

Minimum Observed: 4964.51 ft AMSL

Range: 2.50 ft



Appendix A - Groundwater Elevation Data and Hydrographs

M-56A				
Date of Measurement	Measuring Pt Elevation [ft AMSL]	Water Level [ft bmp]	GW Elevation [ft AMSL]	Well TD
11/30/2015	5023.17	43.52	4979.65	
3/8/2016	5023.17	43.09	4980.08	
5/5/2016	5023.17	43.06	4980.11	
8/24/2016	5023.17	43.12	4980.05	
9/21/2016	5023.17	43.21	4979.96	
2/20/2017	5023.17	42.58	4980.59	
4/11/2017	5023.17	42.09	4981.08	
4/24/2017	5023.17	42.01	4981.16	
5/18/2017	5023.17	42.02	4981.15	
5/24/2017	5023.17	41.97	4981.20	
6/29/2017	5023.17	42.09	4981.08	
7/26/2017	5023.17	42.16	4981.01	
9/5/2017	5023.17	42.18	4980.99	
12/7/2017	5023.17	42.32	4980.85	
2/13/2018	5023.17	42.23	4980.94	
5/18/2018	5023.17	42.11	4981.06	
8/2/2018	5023.17	42.42	4980.75	
10/22/2018	5023.17	42.09	4981.08	
2/15/2019	5023.17	41.59	4981.58	
4/17/2019	5023.17	41.18	4981.99	
8/9/2019	5023.17	41.52	4981.65	
10/21/2019	5023.17	41.75	4981.42	
4/14/2020	5023.17	41.02	4982.15	
10/19/2020	5023.17	41.78	4981.39	

Maximum Observed: 4982.15 ft AMSL

Minimum Observed: 4979.65 ft AMSL

Range: 2.50 ft

Appendix A - Groundwater Elevation Data and Hydrographs

M-57A				
Date of Measurement	Measuring Pt Elevation [ft AMSL]	Water Level [ft bmp]	GW Elevation [ft AMSL]	Well TD
11/30/2015	5023.82	44.24	4979.58	
3/8/2016	5023.82	43.84	4979.98	
5/5/2016	5023.82	43.75	4980.07	
8/24/2016	5023.82	43.89	4979.93	
9/21/2016	5023.82	43.90	4979.92	
2/20/2017	5023.82	43.31	4980.51	
4/11/2017	5023.82	42.86	4980.96	
4/24/2017	5023.82	42.78	4981.04	
5/18/2017	5023.82	42.79	4981.03	
5/24/2017	5023.82	42.86	4980.96	
6/29/2017	5023.82	42.86	4980.96	
7/26/2017	5023.82	42.93	4980.89	
9/5/2017	5023.82	42.97	4980.85	
12/7/2017	5023.82	43.08	4980.74	
2/13/2018	5023.82	42.97	4980.85	
5/18/2018	5023.82	42.87	4980.95	
8/2/2018	5023.82	43.21	4980.61	
10/22/2018	5023.82	42.81	4981.01	
2/15/2019	5023.82	42.34	4981.48	
4/17/2019	5023.82	41.89	4981.93	
8/9/2019	5023.82	42.24	4981.58	
10/21/2019	5023.82	42.52	4981.30	
4/14/2020	5023.82	41.84	4981.98	
10/19/2020	5023.82	42.50	4981.32	

Maximum Observed: 4981.98 ft AMSL

Minimum Observed: 4979.58 ft AMSL

Range: 2.40 ft

Appendix A - Groundwater Elevation Data and Hydrographs

M-58A				
Date of Measurement	Measuring Pt Elevation [ft AMSL]	Water Level [ft bmp]	GW Elevation [ft AMSL]	Well TD
11/30/2015	5023.84	44.25	4979.59	
3/8/2016	5023.84	43.88	4979.96	
5/5/2016	5023.84	43.82	4980.02	
8/24/2016	5023.84	43.95	4979.89	
9/21/2016	5023.84	43.94	4979.90	
2/20/2017	5023.84	43.39	4980.45	
4/11/2017	5023.84	42.91	4980.93	
4/24/2017	5023.84	42.8	4981.04	
5/18/2017	5023.84	42.81	4981.03	
5/24/2017	5023.84	42.78	4981.06	
6/29/2017	5023.84	42.88	4980.96	
7/26/2017	5023.84	42.97	4980.87	
9/5/2017	5023.84	42.95	4980.89	
12/7/2017	5023.84	43.18	4980.66	
2/13/2018	5023.84	43.02	4980.82	
5/18/2018	5023.84	42.93	4980.91	
8/2/2018	5023.84	43.28	4980.56	
10/22/2018	5023.84	42.88	4980.96	
2/15/2019	5023.84	42.35	4981.49	
4/17/2019	5023.84	41.99	4981.85	
8/9/2019	5023.84	42.34	4981.50	
10/21/2019	5023.84	42.62	4981.22	
4/14/2020	5023.84	41.89	4981.95	
10/19/2020	5023.84	42.55	4981.29	

Maximum Observed: 4981.95 ft AMSL

Minimum Observed: 4979.59 ft AMSL

Range: 2.36 ft

Appendix A - Groundwater Elevation Data and Hydrographs

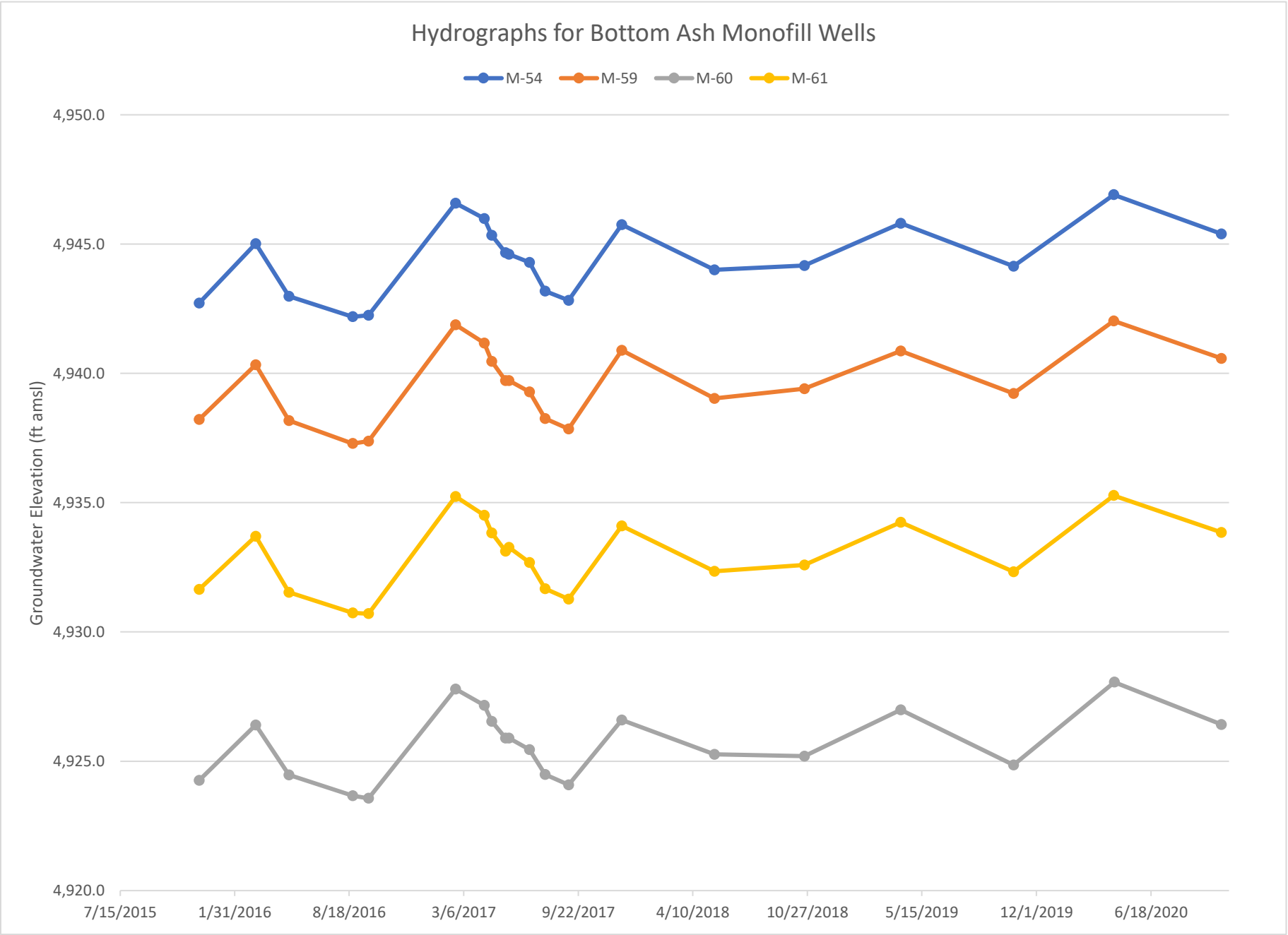
M-62A				
Date of Measurement	Measuring Pt Elevation [ft AMSL]	Water Level [ft bmp]	GW Elevation [ft AMSL]	Well TD
11/30/2015	5020.87	41.13	4979.74	
3/8/2016	5020.87	40.65	4980.22	
5/5/2016	5020.87	40.56	4980.31	
8/24/2016	5020.87	40.69	4980.18	
9/21/2016	5020.87	40.69	4980.18	
2/20/2017	5020.87	40.09	4980.78	
4/11/2017	5020.87	39.62	4981.25	
4/24/2017	5020.87	39.53	4981.34	
5/18/2017	5020.87	39.56	4981.31	
5/24/2017	5020.87	39.49	4981.38	
6/29/2017	5020.87	39.61	4981.26	
7/26/2017	5020.87	39.71	4981.16	
9/5/2017	5020.87	39.62	4981.25	
12/7/2017	5020.87	39.98	4980.89	
2/13/2018	5020.87	39.84	4981.03	
5/18/2018	5020.87	39.64	4981.23	
8/2/2018	5020.87	39.89	4980.98	
10/22/2018	5020.87	39.63	4981.24	
2/15/2019	5020.87	34.08	4986.79	
4/17/2019	5020.87	38.23	4982.64	
8/9/2019	5020.87	38.99	4981.88	
10/21/2019	5020.87	39.30	4981.57	
4/14/2020	5020.87	38.60	4982.27	
10/19/2020	5020.87	39.26	4981.61	

Maximum Observed: 4982.64 ft AMSL

Minimum Observed: 4979.74 ft AMSL

Range: 2.90 ft

Note: 2/15/2019 reading not included in maximum observed due to probable error in field measurement



Appendix A - Groundwater Elevation Data and Hydrographs

M-54				
Date of Measurement	Measuring Pt Elevation [ft AMSL]	Water Level [ft bmp]	GW Elevation [ft AMSL]	Well TD
11/30/2015	5070.71	127.99	4942.72	
3/8/2016	5070.71	125.69	4945.02	
5/5/2016	5070.71	127.73	4942.98	
8/24/2016	5070.71	128.52	4942.19	
9/21/2016	5070.71	128.46	4942.25	
2/20/2017	5070.71	124.13	4946.58	
4/11/2017	5070.71	124.72	4945.99	
4/24/2017	5070.71	125.37	4945.34	
5/18/2017	5070.71	126.04	4944.67	
5/24/2017	5070.71	126.10	4944.61	
6/29/2017	5070.71	126.42	4944.29	
7/26/2017	5070.71	127.53	4943.18	
9/5/2017	5070.71	127.89	4942.82	
12/7/2017	5070.71	124.96	4945.75	
5/18/2018	5070.71	126.71	4944.00	
10/22/2018	5070.71	126.54	4944.17	
4/8/2019	5070.71	124.91	4945.80	
10/22/2019	5070.71	126.57	4944.14	
4/14/2020	5070.71	123.80	4946.91	
10/19/2020	5070.71	125.32	4945.39	

Maximum Observed: 4946.91 ft AMSL

Minimum Observed: 4942.19 ft AMSL

Range: 4.72 ft

Appendix A - Groundwater Elevation Data and Hydrographs

M-59				
Date of Measurement	Measuring Pt Elevation [ft AMSL]	Water Level [ft bmp]	GW Elevation [ft AMSL]	Well TD
11/30/2015	5136.00	197.78	4938.22	
3/8/2016	5136.00	195.67	4940.33	
5/5/2016	5136.00	197.83	4938.17	
8/24/2016	5136.00	198.71	4937.29	
9/21/2016	5136.00	198.62	4937.38	
2/20/2017	5136.00	194.12	4941.88	
4/11/2017	5136.00	194.83	4941.17	
4/24/2017	5136.00	195.54	4940.46	
5/18/2017	5136.00	196.28	4939.72	
5/24/2017	5136.00	196.28	4939.72	
6/29/2017	5136.00	196.72	4939.28	
7/26/2017	5136.00	197.75	4938.25	
9/5/2017	5136.00	198.15	4937.85	
12/7/2017	5136.00	195.11	4940.89	
5/18/2018	5136.00	196.97	4939.03	
10/22/2018	5136.00	196.59	4939.41	
4/8/2019	5136.00	195.13	4940.87	
10/22/2019	5136.00	196.78	4939.22	
4/14/2020	5136.00	193.97	4942.03	
10/19/2020	5136.00	195.42	4940.58	

Maximum Observed: 4942.03 ft AMSL

Minimum Observed: 4937.29 ft AMSL

Range: 4.74 ft

Appendix A - Groundwater Elevation Data and Hydrographs

M-60				
Date of Measurement	Measuring Pt Elevation [ft AMSL]	Water Level [ft bmp]	GW Elevation [ft AMSL]	Well TD
11/30/2015	5151.18	226.92	4924.26	
3/8/2016	5151.18	224.78	4926.40	
5/5/2016	5151.18	226.71	4924.47	
8/24/2016	5151.18	227.51	4923.67	
9/21/2016	5151.18	227.61	4923.57	
2/20/2017	5151.18	223.39	4927.79	
4/11/2017	5151.18	224.02	4927.16	
4/24/2017	5151.18	224.64	4926.54	
5/18/2017	5151.18	225.28	4925.90	
5/24/2017	5151.18	225.28	4925.90	
6/29/2017	5151.18	225.73	4925.45	
7/26/2017	5151.18	226.69	4924.49	
9/5/2017	5151.18	227.09	4924.09	
12/7/2017	5151.18	224.58	4926.60	
5/18/2018	5151.18	225.91	4925.27	
10/22/2018	5151.18	225.98	4925.20	
4/8/2019	5151.18	224.19	4926.99	
10/22/2019	5151.18	226.32	4924.86	
4/15/2020	5151.18	223.12	4928.06	
10/19/2020	5151.18	224.76	4926.42	

Maximum Observed: 4928.06 ft AMSL

Minimum Observed: 4923.57 ft AMSL

Range: 4.49 ft

Appendix A - Groundwater Elevation Data and Hydrographs

M-61				
Date of Measurement	Measuring Pt Elevation [ft AMSL]	Water Level [ft bmp]	GW Elevation [ft AMSL]	Well TD
11/30/2015	5127.58	195.93	4931.65	
3/8/2016	5127.58	193.88	4933.70	
5/5/2016	5127.58	196.05	4931.53	
8/24/2016	5127.58	196.84	4930.74	
9/21/2016	5127.58	196.87	4930.71	
2/20/2017	5127.58	192.34	4935.24	
4/11/2017	5127.58	193.07	4934.51	
4/24/2017	5127.58	193.75	4933.83	
5/18/2017	5127.58	194.46	4933.12	
5/24/2017	5127.58	194.31	4933.27	
6/29/2017	5127.58	194.89	4932.69	
7/26/2017	5127.58	195.91	4931.67	
9/5/2017	5127.58	196.31	4931.27	
12/7/2017	5127.58	193.48	4934.10	
5/18/2018	5127.58	195.23	4932.35	
10/22/2018	5127.58	194.99	4932.59	
4/8/2019	5127.58	193.34	4934.24	
10/22/2019	5127.58	195.25	4932.33	
4/14/2020	5127.58	192.3	4935.28	
10/19/2020	5127.58	193.73	4933.85	

Maximum Observed: 4935.28 ft AMSL

Minimum Observed: 4930.71 ft AMSL

Range: 4.57 ft

APPENDIX B

ANALYTICAL LABORATORY REPORTS

ANALYTICAL REPORT

Eurofins TestAmerica, Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-141149-1

Laboratory SDG: APS Cholla Power Plant (SEDI)
Client Project/Site: CCR Groundwater Monitoring

For:

Arizona Public Service Company
PO BOX 188, Ste. 4458
Joseph City, Arizona 86032

Attn: Natalie Chrisman



Authorized for release by:
5/8/2020 11:45:15 AM

Ken Baker, Project Manager II
(602)659-7624
ken.baker@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Sample Summary	5
Detection Summary	6
Client Sample Results	8
QC Sample Results	12
QC Association Summary	20
Lab Chronicle	24
Certification Summary	27
Method Summary	28
Chain of Custody	29
Receipt Checklists	30



Definitions/Glossary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141149-1
SDG: APS Cholla Power Plant (SEDI)

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
D5	Minimum Reporting Limit (MRL) adjusted due to sample dilution; analyte was non-detect in the sample.

Metals

Qualifier	Qualifier Description
D1	Sample required dilution due to matrix.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.

General Chemistry

Qualifier	Qualifier Description
D2	Sample required dilution due to high concentration of analyte.
H5	This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141149-1
SDG: APS Cholla Power Plant (SEDI)

Job ID: 550-141149-1

Laboratory: Eurofins TestAmerica, Phoenix

Narrative

Job Narrative 550-141149-1

Comments

No additional comments.

Receipt

The samples were received on 4/21/2020 2:51 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.7° C.

HPLC/IC

Method 300.0: The following samples were diluted for Fluoride by method EPA 300.0 due to the nature of the samples matrix: CH-CCR-M57-0420 (550-141149-2), CH-CCR-M58-0420 (550-141149-3), CH-CCR-M62-0420 (550-141149-4) and CH-CCR-FD02-0420 (550-141149-5). The samples contained high concentrations of Chloride and Sulfate which exceeded the instrument's maximum column capacity. Fluoride was not detected in the diluted samples. As such, elevated reporting limits (RLs) have been provided and these data have been qualified with D1 and D5 flags.

Method 300.0: The following sample was diluted for Fluoride by method EPA 300.0 due to the nature of the sample matrix: CH-CCR-M56-0420 (550-141149-1). The sample contained high concentrations of Chloride and Sulfate which exceeded the instrument's maximum column capacity. Fluoride was not detected in the diluted sample. As such, an elevated reporting limit (RL) has been provided and the data has been qualified with D1 and D5 flags.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method 200.7 Rev 4.4: The continuing calibration blank (CCB) for analytical batch 550-209337 contained sodium above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

Method 200.7 Rev 4.4: The following sample was diluted to bring the concentration of target analytes within the calibration range: CH-CCR-M58-0420 (550-141149-3). Elevated reporting limits (RLs) are provided.

Method 200.7 Rev 4.4: The following samples were diluted due to the nature of the sample matrix (internal standard failures and undiluted caused instrument shut down): CH-CCR-M56-0420 (550-141149-1), CH-CCR-M57-0420 (550-141149-2), CH-CCR-M58-0420 (550-141149-3), CH-CCR-M62-0420 (550-141149-4), CH-CCR-FD02-0420 (550-141149-5), (550-141149-B-3-B MS ^5) and (550-141149-B-3-C MSD ^5). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141149-1
SDG: APS Cholla Power Plant (SEDI)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
550-141149-1	CH-CCR-M56-0420	Water	04/16/20 15:55	04/21/20 14:51	
550-141149-2	CH-CCR-M57-0420	Water	04/16/20 14:35	04/21/20 14:51	
550-141149-3	CH-CCR-M58-0420	Water	04/16/20 15:15	04/21/20 14:51	
550-141149-4	CH-CCR-M62-0420	Water	04/16/20 13:33	04/21/20 14:51	
550-141149-5	CH-CCR-FD02-0420	Water	04/16/20 15:55	04/21/20 14:51	

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141149-1
SDG: APS Cholla Power Plant (SEDI)

Client Sample ID: CH-CCR-M56-0420

Lab Sample ID: 550-141149-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1800	D2	400	mg/L	200		300.0	Total/NA
Sulfate	1000	D2	400	mg/L	200		300.0	Total/NA
Boron	0.38	D1	0.25	mg/L	5		200.7 Rev 4.4	Total/NA
Calcium	300		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Barium	0.052	D1	0.0050	mg/L	10		200.8 LL	Total/NA
Chromium	0.034	D1	0.010	mg/L	10		200.8 LL	Total/NA
Molybdenum	0.012	D1	0.0050	mg/L	10		200.8 LL	Total/NA
Total Dissolved Solids	4600	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	14.7	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: CH-CCR-M57-0420

Lab Sample ID: 550-141149-2

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1800	D2	400	mg/L	200		300.0	Total/NA
Sulfate	1100	D2	400	mg/L	200		300.0	Total/NA
Boron	0.48	D1	0.25	mg/L	5		200.7 Rev 4.4	Total/NA
Calcium	360		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0037	D1	0.0025	mg/L	5		200.8 LL	Total/NA
Barium	0.042	D1	0.0050	mg/L	10		200.8 LL	Total/NA
Cobalt	0.0028	D1	0.0025	mg/L	5		200.8 LL	Total/NA
Total Dissolved Solids	4600	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.2	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	14.9	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: CH-CCR-M58-0420

Lab Sample ID: 550-141149-3

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2100	D2	400	mg/L	200		300.0	Total/NA
Sulfate	590	D2	400	mg/L	200		300.0	Total/NA
Calcium	280	M3	2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0042	D1	0.0025	mg/L	5		200.8 LL	Total/NA
Barium	0.069	D1	0.0050	mg/L	10		200.8 LL	Total/NA
Total Dissolved Solids	4300	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	15.0	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: CH-CCR-M62-0420

Lab Sample ID: 550-141149-4

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3000	D2	400	mg/L	200		300.0	Total/NA
Sulfate	650	D2	400	mg/L	200		300.0	Total/NA
Calcium	430		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0043	D1	0.0025	mg/L	5		200.8 LL	Total/NA
Barium	0.078	D1	0.0050	mg/L	10		200.8 LL	Total/NA
Chromium	0.0053	D1	0.0050	mg/L	5		200.8 LL	Total/NA
Molybdenum	0.0040	D1	0.0025	mg/L	5		200.8 LL	Total/NA
Total Dissolved Solids	5400	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	15.0	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141149-1
SDG: APS Cholla Power Plant (SEDI)

Client Sample ID: CH-CCR-FD02-0420

Lab Sample ID: 550-141149-5

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1800	D2	400	mg/L	200		300.0	Total/NA
Sulfate	1000	D2	400	mg/L	200		300.0	Total/NA
Boron	0.37	D1	0.25	mg/L	5		200.7 Rev 4.4	Total/NA
Calcium	290		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Barium	0.052	D1	0.0050	mg/L	10		200.8 LL	Total/NA
Chromium	0.028	D1	0.010	mg/L	10		200.8 LL	Total/NA
Molybdenum	0.012	D1	0.0050	mg/L	10		200.8 LL	Total/NA
Total Dissolved Solids	4500	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	14.5	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141149-1
SDG: APS Cholla Power Plant (SEDI)

Client Sample ID: CH-CCR-M56-0420

Lab Sample ID: 550-141149-1

Date Collected: 04/16/20 15:55

Matrix: Water

Date Received: 04/21/20 14:51

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1800	D2	400	mg/L			04/29/20 22:21	200
Fluoride	ND	D1 D5	0.80	mg/L			04/29/20 21:26	2
Sulfate	1000	D2	400	mg/L			04/29/20 22:21	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		04/22/20 13:37	04/28/20 17:30	1
Boron	0.38	D1	0.25	mg/L		04/22/20 13:37	05/05/20 13:21	5
Calcium	300		2.0	mg/L		04/22/20 13:37	04/28/20 17:30	1
Lithium	ND	D1	1.0	mg/L		04/22/20 13:37	05/05/20 13:21	5

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0050	mg/L		04/22/20 06:50	05/01/20 19:27	5
Arsenic	ND	D1	0.0025	mg/L		04/22/20 06:50	05/01/20 19:27	5
Barium	0.052	D1	0.0050	mg/L		04/22/20 06:50	04/30/20 19:56	10
Cadmium	ND	D1	0.00050	mg/L		04/22/20 06:50	05/01/20 19:27	5
Chromium	0.034	D1	0.010	mg/L		04/22/20 06:50	04/30/20 19:56	10
Cobalt	ND	D1	0.0025	mg/L		04/22/20 06:50	05/01/20 19:27	5
Lead	ND	D1	0.0025	mg/L		04/22/20 06:50	05/01/20 19:27	5
Molybdenum	0.012	D1	0.0050	mg/L		04/22/20 06:50	04/30/20 19:56	10
Selenium	ND	D1	0.0025	mg/L		04/22/20 06:50	05/01/20 19:27	5
Thallium	ND	D1	0.00050	mg/L		04/22/20 06:50	05/01/20 19:27	5

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020	mg/L		04/24/20 14:30	04/24/20 17:53	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	4600	D2	100	mg/L			04/23/20 09:33	1
pH	7.5	H5	1.7	SU			04/27/20 16:46	1
Temperature	14.7	H5	0.1	Degrees C			04/27/20 16:46	1

Client Sample ID: CH-CCR-M57-0420

Lab Sample ID: 550-141149-2

Date Collected: 04/16/20 14:35

Matrix: Water

Date Received: 04/21/20 14:51

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1800	D2	400	mg/L			04/22/20 20:50	200
Fluoride	ND	D1 D5	0.80	mg/L			04/22/20 20:32	2
Sulfate	1100	D2	400	mg/L			04/22/20 20:50	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		04/22/20 13:37	04/28/20 17:26	1
Boron	0.48	D1	0.25	mg/L		04/22/20 13:37	05/05/20 13:17	5
Calcium	360		2.0	mg/L		04/22/20 13:37	04/28/20 17:26	1
Lithium	ND	D1	1.0	mg/L		04/22/20 13:37	05/05/20 13:17	5

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141149-1
SDG: APS Cholla Power Plant (SEDI)

Client Sample ID: CH-CCR-M57-0420

Lab Sample ID: 550-141149-2

Date Collected: 04/16/20 14:35

Matrix: Water

Date Received: 04/21/20 14:51

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0050	mg/L		04/22/20 06:50	05/01/20 19:29	5
Arsenic	0.0037	D1	0.0025	mg/L		04/22/20 06:50	05/01/20 19:29	5
Barium	0.042	D1	0.0050	mg/L		04/22/20 06:50	04/30/20 19:58	10
Cadmium	ND	D1	0.00050	mg/L		04/22/20 06:50	05/01/20 19:29	5
Chromium	ND	D1	0.0050	mg/L		04/22/20 06:50	05/01/20 19:29	5
Cobalt	0.0028	D1	0.0025	mg/L		04/22/20 06:50	05/01/20 19:29	5
Lead	ND	D1	0.0025	mg/L		04/22/20 06:50	05/01/20 19:29	5
Molybdenum	ND	D1	0.0025	mg/L		04/22/20 06:50	05/01/20 19:29	5
Selenium	ND	D1	0.0025	mg/L		04/22/20 06:50	05/01/20 19:29	5
Thallium	ND	D1	0.00050	mg/L		04/22/20 06:50	05/01/20 19:29	5

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020	mg/L		04/24/20 14:30	04/24/20 17:55	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	4600	D2	100	mg/L			04/23/20 09:33	1
pH	7.2	H5	1.7	SU			04/27/20 16:46	1
Temperature	14.9	H5	0.1	Degrees C			04/27/20 16:46	1

Client Sample ID: CH-CCR-M58-0420

Lab Sample ID: 550-141149-3

Date Collected: 04/16/20 15:15

Matrix: Water

Date Received: 04/21/20 14:51

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2100	D2	400	mg/L			04/22/20 21:27	200
Fluoride	ND	D1 D5	0.80	mg/L			04/22/20 21:09	2
Sulfate	590	D2	400	mg/L			04/22/20 21:27	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		04/22/20 13:37	04/28/20 17:22	1
Boron	ND	D1	0.25	mg/L		04/22/20 13:37	05/05/20 13:05	5
Calcium	280	M3	2.0	mg/L		04/22/20 13:37	04/28/20 17:22	1
Lithium	ND	D1	1.0	mg/L		04/22/20 13:37	05/05/20 13:05	5

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0050	mg/L		04/22/20 06:50	05/01/20 19:31	5
Arsenic	0.0042	D1	0.0025	mg/L		04/22/20 06:50	05/01/20 19:31	5
Barium	0.069	D1	0.0050	mg/L		04/22/20 06:50	04/30/20 20:04	10
Cadmium	ND	D1	0.00050	mg/L		04/22/20 06:50	05/01/20 19:31	5
Chromium	ND	D1	0.0050	mg/L		04/22/20 06:50	05/01/20 19:31	5
Cobalt	ND	D1	0.0025	mg/L		04/22/20 06:50	05/01/20 19:31	5
Lead	ND	D1	0.0025	mg/L		04/22/20 06:50	05/01/20 19:31	5
Molybdenum	ND	D1	0.0025	mg/L		04/22/20 06:50	05/01/20 19:31	5
Selenium	ND	D1	0.0025	mg/L		04/22/20 06:50	05/01/20 19:31	5
Thallium	ND	D1	0.00050	mg/L		04/22/20 06:50	05/01/20 19:31	5

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141149-1
SDG: APS Cholla Power Plant (SEDI)

Client Sample ID: CH-CCR-M58-0420

Lab Sample ID: 550-141149-3

Date Collected: 04/16/20 15:15

Matrix: Water

Date Received: 04/21/20 14:51

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020	mg/L		04/24/20 14:30	04/24/20 17:56	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	4300	D2	100	mg/L			04/23/20 09:33	1
pH	7.5	H5	1.7	SU			04/27/20 16:46	1
Temperature	15.0	H5	0.1	Degrees C			04/27/20 16:46	1

Client Sample ID: CH-CCR-M62-0420

Lab Sample ID: 550-141149-4

Date Collected: 04/16/20 13:33

Matrix: Water

Date Received: 04/21/20 14:51

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3000	D2	400	mg/L			04/22/20 22:04	200
Fluoride	ND	D1 D5	0.80	mg/L			04/22/20 21:45	2
Sulfate	650	D2	400	mg/L			04/22/20 22:04	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		04/22/20 13:37	04/28/20 17:34	1
Boron	ND	D1	0.25	mg/L		04/22/20 13:37	05/05/20 13:25	5
Calcium	430		2.0	mg/L		04/22/20 13:37	04/28/20 17:34	1
Lithium	ND	D1	1.0	mg/L		04/22/20 13:37	05/05/20 13:25	5

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0050	mg/L		04/22/20 06:50	05/01/20 19:33	5
Arsenic	0.0043	D1	0.0025	mg/L		04/22/20 06:50	05/01/20 19:33	5
Barium	0.078	D1	0.0050	mg/L		04/22/20 06:50	04/30/20 20:07	10
Cadmium	ND	D1	0.00050	mg/L		04/22/20 06:50	05/01/20 19:33	5
Chromium	0.0053	D1	0.0050	mg/L		04/22/20 06:50	05/01/20 19:33	5
Cobalt	ND	D1	0.0025	mg/L		04/22/20 06:50	05/01/20 19:33	5
Lead	ND	D1	0.0025	mg/L		04/22/20 06:50	05/01/20 19:33	5
Molybdenum	0.0040	D1	0.0025	mg/L		04/22/20 06:50	05/01/20 19:33	5
Selenium	ND	D1	0.0025	mg/L		04/22/20 06:50	05/01/20 19:33	5
Thallium	ND	D1	0.00050	mg/L		04/22/20 06:50	05/01/20 19:33	5

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020	mg/L		04/24/20 14:30	04/24/20 17:58	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	5400	D2	100	mg/L			04/23/20 09:33	1
pH	7.4	H5	1.7	SU			04/27/20 16:46	1
Temperature	15.0	H5	0.1	Degrees C			04/27/20 16:46	1

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141149-1
SDG: APS Cholla Power Plant (SEDI)

Client Sample ID: CH-CCR-FD02-0420

Lab Sample ID: 550-141149-5

Date Collected: 04/16/20 15:55

Matrix: Water

Date Received: 04/21/20 14:51

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1800	D2	400	mg/L			04/22/20 22:41	200
Fluoride	ND	D1 D5	0.80	mg/L			04/22/20 22:22	2
Sulfate	1000	D2	400	mg/L			04/22/20 22:41	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		04/22/20 13:37	04/28/20 17:38	1
Boron	0.37	D1	0.25	mg/L		04/22/20 13:37	05/05/20 13:29	5
Calcium	290		2.0	mg/L		04/22/20 13:37	04/28/20 17:38	1
Lithium	ND	D1	1.0	mg/L		04/22/20 13:37	05/05/20 13:29	5

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0050	mg/L		04/22/20 06:50	05/01/20 19:35	5
Arsenic	ND	D1	0.0025	mg/L		04/22/20 06:50	05/01/20 19:35	5
Barium	0.052	D1	0.0050	mg/L		04/22/20 06:50	04/30/20 20:09	10
Cadmium	ND	D1	0.00050	mg/L		04/22/20 06:50	05/01/20 19:35	5
Chromium	0.028	D1	0.010	mg/L		04/22/20 06:50	04/30/20 20:09	10
Cobalt	ND	D1	0.0025	mg/L		04/22/20 06:50	05/01/20 19:35	5
Lead	ND	D1	0.0025	mg/L		04/22/20 06:50	05/01/20 19:35	5
Molybdenum	0.012	D1	0.0050	mg/L		04/22/20 06:50	04/30/20 20:09	10
Selenium	ND	D1	0.0025	mg/L		04/22/20 06:50	05/01/20 19:35	5
Thallium	ND	D1	0.00050	mg/L		04/22/20 06:50	05/01/20 19:35	5

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020	mg/L		04/24/20 14:30	04/24/20 17:59	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	4500	D2	100	mg/L			04/23/20 09:33	1
pH	7.4	H5	1.7	SU			04/27/20 16:46	1
Temperature	14.5	H5	0.1	Degrees C			04/27/20 16:46	1

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141149-1
SDG: APS Cholla Power Plant (SEDI)

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-208652/2

Matrix: Water

Analysis Batch: 208652

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0	mg/L			04/22/20 19:00	1
Fluoride	ND		0.40	mg/L			04/22/20 19:00	1
Sulfate	ND		2.0	mg/L			04/22/20 19:00	1

Lab Sample ID: LCS 550-208652/5

Matrix: Water

Analysis Batch: 208652

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	21.2		mg/L		106	90 - 110
Fluoride	4.00	4.17		mg/L		104	90 - 110
Sulfate	20.0	20.4		mg/L		102	90 - 110

Lab Sample ID: LCSD 550-208652/6

Matrix: Water

Analysis Batch: 208652

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	21.2		mg/L		106	90 - 110	0	20
Fluoride	4.00	4.17		mg/L		104	90 - 110	0	20
Sulfate	20.0	20.4		mg/L		102	90 - 110	0	20

Lab Sample ID: 550-141150-C-1 MS ^2

Matrix: Water

Analysis Batch: 208652

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.88	D1	8.00	8.19	D1	mg/L		91	80 - 120

Lab Sample ID: 550-141150-C-1 MS ^200

Matrix: Water

Analysis Batch: 208652

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	4300	D2	4000	8540	D2	mg/L		106	80 - 120
Sulfate	3400	D2	4000	7560	D2	mg/L		104	80 - 120

Lab Sample ID: 550-141150-C-1 MSD ^2

Matrix: Water

Analysis Batch: 208652

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.88	D1	8.00	8.41	D1	mg/L		94	80 - 120	3	20

Lab Sample ID: 550-141150-C-1 MSD ^200

Matrix: Water

Analysis Batch: 208652

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	4300	D2	4000	8470	D2	mg/L		104	80 - 120	1	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141149-1
SDG: APS Cholla Power Plant (SEDI)

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-141150-C-1 MSD ^200

Matrix: Water

Analysis Batch: 208652

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	3400	D2	4000	7510	D2	mg/L		103	80 - 120	1	20

Lab Sample ID: MB 550-209193/2

Matrix: Water

Analysis Batch: 209193

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0	mg/L			04/29/20 18:59	1
Fluoride	ND		0.40	mg/L			04/29/20 18:59	1
Sulfate	ND		2.0	mg/L			04/29/20 18:59	1

Lab Sample ID: LCS 550-209193/5

Matrix: Water

Analysis Batch: 209193

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	21.5		mg/L		108	90 - 110
Fluoride	4.00	4.23		mg/L		106	90 - 110
Sulfate	20.0	20.7		mg/L		104	90 - 110

Lab Sample ID: LCSD 550-209193/6

Matrix: Water

Analysis Batch: 209193

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	21.6		mg/L		108	90 - 110	0	20
Fluoride	4.00	4.26		mg/L		106	90 - 110	1	20
Sulfate	20.0	20.8		mg/L		104	90 - 110	0	20

Lab Sample ID: 550-141149-1 MS

Matrix: Water

Analysis Batch: 209193

Client Sample ID: CH-CCR-M56-0420

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	ND	D1 D5	8.00	8.65	D1	mg/L		103	80 - 120

Lab Sample ID: 550-141149-1 MS

Matrix: Water

Analysis Batch: 209193

Client Sample ID: CH-CCR-M56-0420

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	1800	D2	4000	6290	D2	mg/L		113	80 - 120
Sulfate	1000	D2	4000	5270	D2	mg/L		106	80 - 120

Lab Sample ID: 550-141149-1 MSD

Matrix: Water

Analysis Batch: 209193

Client Sample ID: CH-CCR-M56-0420

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	ND	D1 D5	8.00	8.64	D1	mg/L		103	80 - 120	0	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141149-1
SDG: APS Cholla Power Plant (SEDI)

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-141149-1 MSD

Matrix: Water

Analysis Batch: 209193

Client Sample ID: CH-CCR-M56-0420

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	1800	D2	4000	6260	D2	mg/L		112	80 - 120	1	20
Sulfate	1000	D2	4000	5240	D2	mg/L		105	80 - 120	1	20

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 550-208529/1-A

Matrix: Water

Analysis Batch: 209071

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 208529

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		04/22/20 13:37	04/28/20 17:02	1
Calcium	ND		2.0	mg/L		04/22/20 13:37	04/28/20 17:02	1

Lab Sample ID: MB 550-208529/1-A

Matrix: Water

Analysis Batch: 209651

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 208529

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.050	mg/L		04/22/20 13:37	05/05/20 12:45	1
Lithium	ND		0.20	mg/L		04/22/20 13:37	05/05/20 12:45	1

Lab Sample ID: LCS 550-208529/2-A

Matrix: Water

Analysis Batch: 209071

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 208529

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	1.00	1.04		mg/L		104	85 - 115
Calcium	21.0	21.2		mg/L		101	85 - 115

Lab Sample ID: LCS 550-208529/2-A

Matrix: Water

Analysis Batch: 209651

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 208529

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	1.08		mg/L		108	85 - 115
Lithium	1.00	0.926		mg/L		93	85 - 115

Lab Sample ID: LCSD 550-208529/3-A

Matrix: Water

Analysis Batch: 209071

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 208529

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Beryllium	1.00	1.04		mg/L		104	85 - 115	0	20
Calcium	21.0	21.1		mg/L		101	85 - 115	0	20

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141149-1
SDG: APS Cholla Power Plant (SEDI)

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCSD 550-208529/3-A
Matrix: Water
Analysis Batch: 209651

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 208529

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	1.00	1.07		mg/L		107	85 - 115	1	20
Lithium	1.00	0.969		mg/L		97	85 - 115	5	20

Lab Sample ID: 550-141149-3 MS
Matrix: Water
Analysis Batch: 209071

Client Sample ID: CH-CCR-M58-0420
Prep Type: Total/NA
Prep Batch: 208529

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Beryllium	ND		1.00	1.02		mg/L		102	70 - 130		
Calcium	280	M3	21.0	284	M3	mg/L		-3	70 - 130		

Lab Sample ID: 550-141149-3 MS
Matrix: Water
Analysis Batch: 209651

Client Sample ID: CH-CCR-M58-0420
Prep Type: Total/NA
Prep Batch: 208529

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	ND	D1	1.00	1.30	D1	mg/L		107	70 - 130		
Lithium	ND	D1	1.00	ND	D1	mg/L		73	70 - 130		

Lab Sample ID: 550-141149-3 MSD
Matrix: Water
Analysis Batch: 209071

Client Sample ID: CH-CCR-M58-0420
Prep Type: Total/NA
Prep Batch: 208529

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Beryllium	ND		1.00	1.02		mg/L		102	70 - 130	1	20
Calcium	280	M3	21.0	294	M3	mg/L		45	70 - 130	3	20

Lab Sample ID: 550-141149-3 MSD
Matrix: Water
Analysis Batch: 209651

Client Sample ID: CH-CCR-M58-0420
Prep Type: Total/NA
Prep Batch: 208529

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	ND	D1	1.00	1.32	D1	mg/L		110	70 - 130	2	20
Lithium	ND	D1	1.00	ND	D1	mg/L		77	70 - 130	4	20

Method: 200.8 LL - Metals (ICP/MS)

Lab Sample ID: MB 550-208489/1-A
Matrix: Water
Analysis Batch: 209389

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 208489

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0010	mg/L		04/22/20 06:50	04/30/20 19:46	1
Arsenic	ND		0.00050	mg/L		04/22/20 06:50	04/30/20 19:46	1
Barium	ND		0.00050	mg/L		04/22/20 06:50	04/30/20 19:46	1
Cadmium	ND		0.00010	mg/L		04/22/20 06:50	04/30/20 19:46	1
Chromium	ND		0.0010	mg/L		04/22/20 06:50	04/30/20 19:46	1
Cobalt	ND		0.00050	mg/L		04/22/20 06:50	04/30/20 19:46	1
Lead	ND		0.00050	mg/L		04/22/20 06:50	04/30/20 19:46	1
Molybdenum	ND		0.00050	mg/L		04/22/20 06:50	04/30/20 19:46	1

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QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141149-1
SDG: APS Cholla Power Plant (SEDI)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 550-208489/1-A

Matrix: Water

Analysis Batch: 209389

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 208489

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		0.00050	mg/L		04/22/20 06:50	04/30/20 19:46	1
Thallium	ND		0.00010	mg/L		04/22/20 06:50	04/30/20 19:46	1

Lab Sample ID: LCS 550-208489/2-A

Matrix: Water

Analysis Batch: 208775

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 208489

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	0.100	0.111		mg/L		111	85 - 115

Lab Sample ID: LCS 550-208489/2-A

Matrix: Water

Analysis Batch: 209389

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 208489

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.100	0.103		mg/L		103	85 - 115
Arsenic	0.100	0.106		mg/L		106	85 - 115
Cadmium	0.100	0.105		mg/L		105	85 - 115
Chromium	0.100	0.105		mg/L		105	85 - 115
Cobalt	0.100	0.107		mg/L		107	85 - 115
Lead	0.100	0.107		mg/L		107	85 - 115
Molybdenum	0.100	0.104		mg/L		104	85 - 115
Selenium	0.100	0.105		mg/L		105	85 - 115
Thallium	0.100	0.106		mg/L		106	85 - 115

Lab Sample ID: LCSD 550-208489/3-A

Matrix: Water

Analysis Batch: 208775

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 208489

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Barium	0.100	0.110		mg/L		110	85 - 115	1	20

Lab Sample ID: LCSD 550-208489/3-A

Matrix: Water

Analysis Batch: 209389

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 208489

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.100	0.102		mg/L		102	85 - 115	1	20
Arsenic	0.100	0.103		mg/L		103	85 - 115	2	20
Cadmium	0.100	0.104		mg/L		104	85 - 115	1	20
Chromium	0.100	0.105		mg/L		105	85 - 115	0	20
Cobalt	0.100	0.105		mg/L		105	85 - 115	2	20
Lead	0.100	0.107		mg/L		107	85 - 115	1	20
Molybdenum	0.100	0.103		mg/L		103	85 - 115	1	20
Selenium	0.100	0.108		mg/L		108	85 - 115	2	20
Thallium	0.100	0.107		mg/L		107	85 - 115	1	20

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141149-1
SDG: APS Cholla Power Plant (SEDI)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: 550-141149-1 MS

Matrix: Water

Analysis Batch: 209389

Client Sample ID: CH-CCR-M56-0420

Prep Type: Total/NA

Prep Batch: 208489

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	0.052	D1	0.100	0.166		mg/L		114	70 - 130
Chromium	0.034	D1	0.100	0.130		mg/L		96	70 - 130
Molybdenum	0.012	D1	0.100	0.116		mg/L		104	70 - 130

Lab Sample ID: 550-141149-1 MS

Matrix: Water

Analysis Batch: 209485

Client Sample ID: CH-CCR-M56-0420

Prep Type: Total/NA

Prep Batch: 208489

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND	D1	0.100	0.106		mg/L		106	70 - 130
Arsenic	ND	D1	0.100	0.108		mg/L		106	70 - 130
Cadmium	ND	D1	0.100	0.0978		mg/L		98	70 - 130
Cobalt	ND	D1	0.100	0.100		mg/L		100	70 - 130
Lead	ND	D1	0.100	0.101		mg/L		101	70 - 130
Selenium	ND	D1	0.100	0.106		mg/L		106	70 - 130
Thallium	ND	D1	0.100	0.101		mg/L		100	70 - 130

Lab Sample ID: 550-141149-1 MSD

Matrix: Water

Analysis Batch: 209389

Client Sample ID: CH-CCR-M56-0420

Prep Type: Total/NA

Prep Batch: 208489

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Barium	0.052	D1	0.100	0.171		mg/L		118	70 - 130	3	20
Chromium	0.034	D1	0.100	0.133		mg/L		100	70 - 130	3	20
Molybdenum	0.012	D1	0.100	0.120		mg/L		108	70 - 130	3	20

Lab Sample ID: 550-141149-1 MSD

Matrix: Water

Analysis Batch: 209485

Client Sample ID: CH-CCR-M56-0420

Prep Type: Total/NA

Prep Batch: 208489

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	ND	D1	0.100	0.106		mg/L		106	70 - 130	0	20
Arsenic	ND	D1	0.100	0.114		mg/L		113	70 - 130	6	20
Cadmium	ND	D1	0.100	0.100		mg/L		100	70 - 130	3	20
Cobalt	ND	D1	0.100	0.101		mg/L		100	70 - 130	1	20
Lead	ND	D1	0.100	0.102		mg/L		102	70 - 130	1	20
Selenium	ND	D1	0.100	0.104		mg/L		104	70 - 130	2	20
Thallium	ND	D1	0.100	0.102		mg/L		102	70 - 130	2	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 550-208677/1-A

Matrix: Water

Analysis Batch: 208793

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 208677

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020	mg/L		04/24/20 14:30	04/24/20 17:45	1

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141149-1
SDG: APS Cholla Power Plant (SEDI)

Method: 245.1 - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 550-208677/2-A
Matrix: Water
Analysis Batch: 208793

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 208677
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Hg	0.00500	0.00541		mg/L		108	85 - 115

Lab Sample ID: LCSD 550-208677/3-A
Matrix: Water
Analysis Batch: 208793

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 208677
%Rec. RPD

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Hg	0.00500	0.00555		mg/L		111	85 - 115	3	20

Lab Sample ID: 550-141149-1 MS
Matrix: Water
Analysis Batch: 208793

Client Sample ID: CH-CCR-M56-0420
Prep Type: Total/NA
Prep Batch: 208677
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Hg	ND		0.00500	0.00504		mg/L		101	70 - 130

Lab Sample ID: 550-141149-1 MSD
Matrix: Water
Analysis Batch: 208793

Client Sample ID: CH-CCR-M56-0420
Prep Type: Total/NA
Prep Batch: 208677
%Rec. RPD

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Hg	ND		0.00500	0.00532		mg/L		106	70 - 130	5	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 550-208634/1
Matrix: Water
Analysis Batch: 208634

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		20	mg/L			04/23/20 09:33	1

Lab Sample ID: LCS 550-208634/2
Matrix: Water
Analysis Batch: 208634

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Total Dissolved Solids	1000	976		mg/L		98	90 - 110

Lab Sample ID: LCSD 550-208634/3
Matrix: Water
Analysis Batch: 208634

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Total Dissolved Solids	1000	952		mg/L		95	90 - 110	2	10

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141149-1
SDG: APS Cholla Power Plant (SEDI)

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: 550-141149-1 DU

Matrix: Water

Analysis Batch: 208634

Client Sample ID: CH-CCR-M56-0420

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	4600	D2	4450	D2	mg/L		3	10

Method: SM 4500 H+ B - pH

Lab Sample ID: LCSSRM 550-208909/1

Matrix: Water

Analysis Batch: 208909

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
pH	7.00	7.0		SU		99.9	98.5 - 101.5		

Lab Sample ID: LCSSRM 550-208909/13

Matrix: Water

Analysis Batch: 208909

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
pH	7.00	7.0		SU		100.3	98.5 - 101.5		

Lab Sample ID: 550-141257-H-1 DU

Matrix: Water

Analysis Batch: 208909

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	8.3	H5	8.4	H5	SU		0.4	5
Temperature	13.6	H5	13.0	H5	Degrees C		5	

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141149-1
SDG: APS Cholla Power Plant (SEDI)

HPLC/IC

Analysis Batch: 208652

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141149-2	CH-CCR-M57-0420	Total/NA	Water	300.0	
550-141149-2	CH-CCR-M57-0420	Total/NA	Water	300.0	
550-141149-3	CH-CCR-M58-0420	Total/NA	Water	300.0	
550-141149-3	CH-CCR-M58-0420	Total/NA	Water	300.0	
550-141149-4	CH-CCR-M62-0420	Total/NA	Water	300.0	
550-141149-4	CH-CCR-M62-0420	Total/NA	Water	300.0	
550-141149-5	CH-CCR-FD02-0420	Total/NA	Water	300.0	
550-141149-5	CH-CCR-FD02-0420	Total/NA	Water	300.0	
MB 550-208652/2	Method Blank	Total/NA	Water	300.0	
LCS 550-208652/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-208652/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-141150-C-1 MS ^2	Matrix Spike	Total/NA	Water	300.0	
550-141150-C-1 MS ^200	Matrix Spike	Total/NA	Water	300.0	
550-141150-C-1 MSD ^2	Matrix Spike Duplicate	Total/NA	Water	300.0	
550-141150-C-1 MSD ^200	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 209193

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141149-1	CH-CCR-M56-0420	Total/NA	Water	300.0	
550-141149-1	CH-CCR-M56-0420	Total/NA	Water	300.0	
MB 550-209193/2	Method Blank	Total/NA	Water	300.0	
LCS 550-209193/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-209193/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-141149-1 MS	CH-CCR-M56-0420	Total/NA	Water	300.0	
550-141149-1 MS	CH-CCR-M56-0420	Total/NA	Water	300.0	
550-141149-1 MSD	CH-CCR-M56-0420	Total/NA	Water	300.0	
550-141149-1 MSD	CH-CCR-M56-0420	Total/NA	Water	300.0	

Metals

Prep Batch: 208489

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141149-1	CH-CCR-M56-0420	Total/NA	Water	200.8	
550-141149-2	CH-CCR-M57-0420	Total/NA	Water	200.8	
550-141149-3	CH-CCR-M58-0420	Total/NA	Water	200.8	
550-141149-4	CH-CCR-M62-0420	Total/NA	Water	200.8	
550-141149-5	CH-CCR-FD02-0420	Total/NA	Water	200.8	
MB 550-208489/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-208489/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-208489/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-141149-1 MS	CH-CCR-M56-0420	Total/NA	Water	200.8	
550-141149-1 MSD	CH-CCR-M56-0420	Total/NA	Water	200.8	

Prep Batch: 208529

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141149-1	CH-CCR-M56-0420	Total/NA	Water	200.7	
550-141149-2	CH-CCR-M57-0420	Total/NA	Water	200.7	
550-141149-3	CH-CCR-M58-0420	Total/NA	Water	200.7	
550-141149-4	CH-CCR-M62-0420	Total/NA	Water	200.7	
550-141149-5	CH-CCR-FD02-0420	Total/NA	Water	200.7	
MB 550-208529/1-A	Method Blank	Total/NA	Water	200.7	

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QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141149-1
SDG: APS Cholla Power Plant (SEDI)

Metals (Continued)

Prep Batch: 208529 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 550-208529/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-208529/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-141149-3 MS	CH-CCR-M58-0420	Total/NA	Water	200.7	
550-141149-3 MSD	CH-CCR-M58-0420	Total/NA	Water	200.7	

Prep Batch: 208677

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141149-1	CH-CCR-M56-0420	Total/NA	Water	245.1	
550-141149-2	CH-CCR-M57-0420	Total/NA	Water	245.1	
550-141149-3	CH-CCR-M58-0420	Total/NA	Water	245.1	
550-141149-4	CH-CCR-M62-0420	Total/NA	Water	245.1	
550-141149-5	CH-CCR-FD02-0420	Total/NA	Water	245.1	
MB 550-208677/1-A	Method Blank	Total/NA	Water	245.1	
LCS 550-208677/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 550-208677/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	
550-141149-1 MS	CH-CCR-M56-0420	Total/NA	Water	245.1	
550-141149-1 MSD	CH-CCR-M56-0420	Total/NA	Water	245.1	

Analysis Batch: 208775

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 550-208489/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	208489
LCSD 550-208489/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	208489

Analysis Batch: 208793

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141149-1	CH-CCR-M56-0420	Total/NA	Water	245.1	208677
550-141149-2	CH-CCR-M57-0420	Total/NA	Water	245.1	208677
550-141149-3	CH-CCR-M58-0420	Total/NA	Water	245.1	208677
550-141149-4	CH-CCR-M62-0420	Total/NA	Water	245.1	208677
550-141149-5	CH-CCR-FD02-0420	Total/NA	Water	245.1	208677
MB 550-208677/1-A	Method Blank	Total/NA	Water	245.1	208677
LCS 550-208677/2-A	Lab Control Sample	Total/NA	Water	245.1	208677
LCSD 550-208677/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	208677
550-141149-1 MS	CH-CCR-M56-0420	Total/NA	Water	245.1	208677
550-141149-1 MSD	CH-CCR-M56-0420	Total/NA	Water	245.1	208677

Analysis Batch: 209071

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141149-1	CH-CCR-M56-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141149-2	CH-CCR-M57-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141149-3	CH-CCR-M58-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141149-4	CH-CCR-M62-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141149-5	CH-CCR-FD02-0420	Total/NA	Water	200.7 Rev 4.4	208529
MB 550-208529/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	208529
LCS 550-208529/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	208529
LCSD 550-208529/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	208529
550-141149-3 MS	CH-CCR-M58-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141149-3 MSD	CH-CCR-M58-0420	Total/NA	Water	200.7 Rev 4.4	208529

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141149-1
SDG: APS Cholla Power Plant (SEDI)

Metals

Analysis Batch: 209389

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141149-1	CH-CCR-M56-0420	Total/NA	Water	200.8 LL	208489
550-141149-2	CH-CCR-M57-0420	Total/NA	Water	200.8 LL	208489
550-141149-3	CH-CCR-M58-0420	Total/NA	Water	200.8 LL	208489
550-141149-4	CH-CCR-M62-0420	Total/NA	Water	200.8 LL	208489
550-141149-5	CH-CCR-FD02-0420	Total/NA	Water	200.8 LL	208489
MB 550-208489/1-A	Method Blank	Total/NA	Water	200.8 LL	208489
LCS 550-208489/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	208489
LCSD 550-208489/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	208489
550-141149-1 MS	CH-CCR-M56-0420	Total/NA	Water	200.8 LL	208489
550-141149-1 MSD	CH-CCR-M56-0420	Total/NA	Water	200.8 LL	208489

Analysis Batch: 209485

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141149-1	CH-CCR-M56-0420	Total/NA	Water	200.8 LL	208489
550-141149-2	CH-CCR-M57-0420	Total/NA	Water	200.8 LL	208489
550-141149-3	CH-CCR-M58-0420	Total/NA	Water	200.8 LL	208489
550-141149-4	CH-CCR-M62-0420	Total/NA	Water	200.8 LL	208489
550-141149-5	CH-CCR-FD02-0420	Total/NA	Water	200.8 LL	208489
550-141149-1 MS	CH-CCR-M56-0420	Total/NA	Water	200.8 LL	208489
550-141149-1 MSD	CH-CCR-M56-0420	Total/NA	Water	200.8 LL	208489

Analysis Batch: 209651

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141149-1	CH-CCR-M56-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141149-2	CH-CCR-M57-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141149-3	CH-CCR-M58-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141149-4	CH-CCR-M62-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141149-5	CH-CCR-FD02-0420	Total/NA	Water	200.7 Rev 4.4	208529
MB 550-208529/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	208529
LCS 550-208529/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	208529
LCSD 550-208529/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	208529
550-141149-3 MS	CH-CCR-M58-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141149-3 MSD	CH-CCR-M58-0420	Total/NA	Water	200.7 Rev 4.4	208529

General Chemistry

Analysis Batch: 208634

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141149-1	CH-CCR-M56-0420	Total/NA	Water	SM 2540C	
550-141149-2	CH-CCR-M57-0420	Total/NA	Water	SM 2540C	
550-141149-3	CH-CCR-M58-0420	Total/NA	Water	SM 2540C	
550-141149-4	CH-CCR-M62-0420	Total/NA	Water	SM 2540C	
550-141149-5	CH-CCR-FD02-0420	Total/NA	Water	SM 2540C	
MB 550-208634/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-208634/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-208634/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-141149-1 DU	CH-CCR-M56-0420	Total/NA	Water	SM 2540C	

Analysis Batch: 208909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141149-1	CH-CCR-M56-0420	Total/NA	Water	SM 4500 H+ B	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141149-1
SDG: APS Cholla Power Plant (SEDI)

General Chemistry (Continued)

Analysis Batch: 208909 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141149-2	CH-CCR-M57-0420	Total/NA	Water	SM 4500 H+ B	
550-141149-3	CH-CCR-M58-0420	Total/NA	Water	SM 4500 H+ B	
550-141149-4	CH-CCR-M62-0420	Total/NA	Water	SM 4500 H+ B	
550-141149-5	CH-CCR-FD02-0420	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-208909/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-208909/13	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
550-141257-H-1 DU	Duplicate	Total/NA	Water	SM 4500 H+ B	

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141149-1
SDG: APS Cholla Power Plant (SEDI)

Client Sample ID: CH-CCR-M56-0420

Lab Sample ID: 550-141149-1

Date Collected: 04/16/20 15:55

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	209193	04/29/20 21:26	NEL	TAL PHX
Total/NA	Analysis	300.0		200	209193	04/29/20 22:21	NEL	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	209071	04/28/20 17:30	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209651	05/05/20 13:21	SRA	TAL PHX
Total/NA	Prep	200.8			208489	04/22/20 06:50	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		10	209389	04/30/20 19:56	ARE	TAL PHX
Total/NA	Prep	200.8			208489	04/22/20 06:50	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209485	05/01/20 19:27	ARE	TAL PHX
Total/NA	Prep	245.1			208677	04/24/20 14:30	GJH	TAL PHX
Total/NA	Analysis	245.1		1	208793	04/24/20 17:53	GJH	TAL PHX
Total/NA	Analysis	SM 2540C		1	208634		YET	TAL PHX
					(Start)	04/23/20 09:33		
					(End)	04/24/20 10:55		
Total/NA	Analysis	SM 4500 H+ B		1	208909	04/27/20 16:46	MRR	TAL PHX

Client Sample ID: CH-CCR-M57-0420

Lab Sample ID: 550-141149-2

Date Collected: 04/16/20 14:35

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	208652	04/22/20 20:32	KJS	TAL PHX
Total/NA	Analysis	300.0		200	208652	04/22/20 20:50	KJS	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	209071	04/28/20 17:26	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209651	05/05/20 13:17	SRA	TAL PHX
Total/NA	Prep	200.8			208489	04/22/20 06:50	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		10	209389	04/30/20 19:58	ARE	TAL PHX
Total/NA	Prep	200.8			208489	04/22/20 06:50	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209485	05/01/20 19:29	ARE	TAL PHX
Total/NA	Prep	245.1			208677	04/24/20 14:30	GJH	TAL PHX
Total/NA	Analysis	245.1		1	208793	04/24/20 17:55	GJH	TAL PHX
Total/NA	Analysis	SM 2540C		1	208634		YET	TAL PHX
					(Start)	04/23/20 09:33		
					(End)	04/24/20 10:55		
Total/NA	Analysis	SM 4500 H+ B		1	208909	04/27/20 16:46	MRR	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141149-1
SDG: APS Cholla Power Plant (SEDI)

Client Sample ID: CH-CCR-M58-0420

Lab Sample ID: 550-141149-3

Date Collected: 04/16/20 15:15

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	208652	04/22/20 21:09	KJS	TAL PHX
Total/NA	Analysis	300.0		200	208652	04/22/20 21:27	KJS	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	209071	04/28/20 17:22	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209651	05/05/20 13:05	SRA	TAL PHX
Total/NA	Prep	200.8			208489	04/22/20 06:50	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		10	209389	04/30/20 20:04	ARE	TAL PHX
Total/NA	Prep	200.8			208489	04/22/20 06:50	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209485	05/01/20 19:31	ARE	TAL PHX
Total/NA	Prep	245.1			208677	04/24/20 14:30	GJH	TAL PHX
Total/NA	Analysis	245.1		1	208793	04/24/20 17:56	GJH	TAL PHX
Total/NA	Analysis	SM 2540C		1	208634		YET	TAL PHX
					(Start)	04/23/20 09:33		
					(End)	04/24/20 10:55		
Total/NA	Analysis	SM 4500 H+ B		1	208909	04/27/20 16:46	MRR	TAL PHX

Client Sample ID: CH-CCR-M62-0420

Lab Sample ID: 550-141149-4

Date Collected: 04/16/20 13:33

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	208652	04/22/20 21:45	KJS	TAL PHX
Total/NA	Analysis	300.0		200	208652	04/22/20 22:04	KJS	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	209071	04/28/20 17:34	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209651	05/05/20 13:25	SRA	TAL PHX
Total/NA	Prep	200.8			208489	04/22/20 06:50	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		10	209389	04/30/20 20:07	ARE	TAL PHX
Total/NA	Prep	200.8			208489	04/22/20 06:50	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209485	05/01/20 19:33	ARE	TAL PHX
Total/NA	Prep	245.1			208677	04/24/20 14:30	GJH	TAL PHX
Total/NA	Analysis	245.1		1	208793	04/24/20 17:58	GJH	TAL PHX
Total/NA	Analysis	SM 2540C		1	208634		YET	TAL PHX
					(Start)	04/23/20 09:33		
					(End)	04/24/20 10:55		
Total/NA	Analysis	SM 4500 H+ B		1	208909	04/27/20 16:46	MRR	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141149-1
SDG: APS Cholla Power Plant (SEDI)

Client Sample ID: CH-CCR-FD02-0420

Lab Sample ID: 550-141149-5

Date Collected: 04/16/20 15:55

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	208652	04/22/20 22:22	KJS	TAL PHX
Total/NA	Analysis	300.0		200	208652	04/22/20 22:41	KJS	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	209071	04/28/20 17:38	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209651	05/05/20 13:29	SRA	TAL PHX
Total/NA	Prep	200.8			208489	04/22/20 06:50	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		10	209389	04/30/20 20:09	ARE	TAL PHX
Total/NA	Prep	200.8			208489	04/22/20 06:50	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209485	05/01/20 19:35	ARE	TAL PHX
Total/NA	Prep	245.1			208677	04/24/20 14:30	GJH	TAL PHX
Total/NA	Analysis	245.1		1	208793	04/24/20 17:59	GJH	TAL PHX
Total/NA	Analysis	SM 2540C		1	208634		YET	TAL PHX
					(Start)	04/23/20 09:33		
					(End)	04/24/20 10:55		
Total/NA	Analysis	SM 4500 H+ B		1	208909	04/27/20 16:46	MRR	TAL PHX

Laboratory References:

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141149-1
SDG: APS Cholla Power Plant (SEDI)

Laboratory: Eurofins TestAmerica, Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-08-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
200.8 LL	200.8	Water	Molybdenum
SM 2540C		Water	Total Dissolved Solids
SM 4500 H+ B		Water	Temperature

Method Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141149-1
SDG: APS Cholla Power Plant (SEDI)

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PHX
200.7 Rev 4.4	Metals (ICP)	40CFR136A	TAL PHX
200.8 LL	Metals (ICP/MS)	EPA	TAL PHX
245.1	Mercury (CVAA)	EPA	TAL PHX
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PHX
SM 4500 H+ B	pH	SM	TAL PHX
200.7	Preparation, Total Metals	EPA	TAL PHX
200.8	Preparation, Total Metals	EPA	TAL PHX
245.1	Preparation, Mercury	EPA	TAL PHX

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Login Sample Receipt Checklist

Client: Arizona Public Service Company

Job Number: 550-141149-1

SDG Number: APS Cholla Power Plant (SEDI)

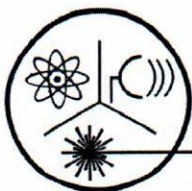
Login Number: 141149

List Number: 1

Creator: Maycock, Lisa

List Source: Eurofins TestAmerica, Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

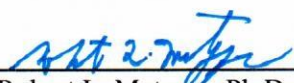
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: November 17, 2020
Sample Received: November 23, 2020
Analysis Completed: December 07, 2020

Sample ID	Gross Alpha Activity Method 600/00-02 (pCi/L)	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-APP-WARP-111720	7.5 ± 1.7	1.9 ± 0.2	2.7 ± 0.4	4.6 ± 0.4

Date of Analysis	12/2/2020	11/27/2020	11/27/2020	11/27/2020
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Robert L. Metzger, Ph.D., C.H.P.
Laboratory License Number AZ0462

12/7/2020
Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04

PWS Name: _____

November 17, 2020 9:59 (24 hour clock)

Sample Date

Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002	12/2/2020	7.5 ± 1.7	
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006			µg/L
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/27/2020	4.6 ± 0.4	
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/27/2020	1.9 ± 0.2	
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/27/2020	2.7 ± 0.4	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

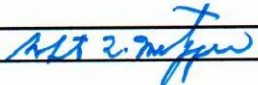
Specimen Number: RSE65575

Lab ID Number: AZ0462

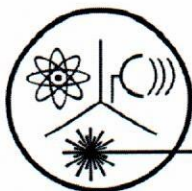
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: CH-APP-WARP-111720

Authorized Signature: 

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

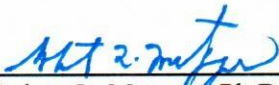
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: November 17, 2020
Sample Received: November 23, 2020
Analysis Completed: December 07, 2020

Sample ID	Gross Alpha Activity Method 600/00-02 (pCi/L)	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-APP-SWRP-111720	< 1.1	< 0.4	< 0.8	< 0.8

Date of Analysis	11/30/2020	11/27/2020	11/27/2020	11/27/2020
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Robert L. Metzger, Ph.D., C.H.P. 12/7/2020
Laboratory License Number AZ0462 Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04

PWS Name: _____

November 17, 2020 10:58 (24 hour clock)

Sample Date

Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

☐ Quarterly

☐ Composite of four quarterly samples

Date Q1 collected: _____

Date Q2 collected: _____

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002	11/30/2020	< 1.1	
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006		µg/L	
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	11/27/2020	< 0.8	
GammaRay HPGE		1 pCi/L	Radium 226	4020	11/27/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	11/27/2020	< 0.8	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65576

Lab ID Number: AZ0462

Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: CH-APP-SWRP-111720

Authorized Signature: _____

Date Public Water System Notified: _____

Parameters	AL	DL	Sampling Frequency	Reporting Frequency
Gross Alpha including Radium-226 excluding Radon and Uranium	15 pCi/l	Not Established	Annually	Annually
Radium-226 and Radium-228	5 pCi/l	Not Established	Annually	Annually

ANALYTICAL REPORT

Eurofins TestAmerica, Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-141150-1

Laboratory SDG: APS Cholla Power Plant (BAP)
Client Project/Site: CCR Groundwater Monitoring
Revision: 1

For:

Arizona Public Service Company
PO BOX 188, Ste. 4458
Joseph City, Arizona 86032

Attn: Natalie Chrisman



Authorized for release by:
6/23/2020 12:26:23 PM

Ken Baker, Project Manager II
(602)659-7624
ken.baker@testamericainc.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	5
Sample Summary	7
Detection Summary	8
Client Sample Results	19
QC Sample Results	42
QC Association Summary	66
Lab Chronicle	81
Certification Summary	98
Method Summary	99
Chain of Custody	100
Receipt Checklists	102



Definitions/Glossary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
D5	Minimum Reporting Limit (MRL) adjusted due to sample dilution; analyte was non-detect in the sample.
M1	Matrix spike recovery was high, the associated blank spike recovery was acceptable.
R13	MS/MSD RPD exceeded the method acceptance limit. Matrix spike recovery was outside acceptance criteria. Batch precision and accuracy were demonstrated.

Metals

Qualifier	Qualifier Description
B3	Target analyte detected in calibration blank at or above the method reporting limit.
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above MDL.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.

General Chemistry

Qualifier	Qualifier Description
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
H5	This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.
M2	Matrix spike recovery was low, the associated blank spike recovery was acceptable.
R8	Sample RPD exceeded the method acceptance limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive

Definitions/Glossary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Job ID: 550-141150-1

Laboratory: Eurofins TestAmerica, Phoenix

Narrative

Job Narrative 550-141150-1

Comments

This report contains the 200.7 metals reported down to the MDL.

Receipt

The samples were received on 4/21/2020 2:51 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 5 coolers at receipt time were 1.7° C, 2.0° C, 3.2° C, 3.7° C and 4.8° C.

Receipt Exceptions

The following samples for metals were received unpreserved and were preserved upon receipt to the laboratory: CH-CCR-M52-0420 (550-141150-1), CH-CCR-M52-0420 (550-141150-1[MS]), CH-CCR-M52-0420 (550-141150-1[MSD]), CH-CCR-M52-0420 (550-141150-2), CH-CCR-M52-0420 (550-141150-2[MS]), CH-CCR-M52-0420 (550-141150-2[MSD]), CH-CCR-M53-0420 (550-141150-3), CH-CCR-M53-0420 (550-141150-4), CH-CCR-M55-0420 (550-141150-5), CH-CCR-M55-0420 (550-141150-6), CH-CCR-M69-0420 (550-141150-7), CH-CCR-M69-0420 (550-141150-8), CH-CCR-M70-0420 (550-141150-9), CH-CCR-M70-0420 (550-141150-10), CH-CCR-W301-0420 (550-141150-11), CH-CCR-W301-0420 (550-141150-12), CH-CCR-W302-0420 (550-141150-13), CH-CCR-W302-0420 (550-141150-14), CH-CCR-W303-0420 (550-141150-15), CH-CCR-W303-0420 (550-141150-16), CH-CCR-W304-0420 (550-141150-17), CH-CCR-W304-0420 (550-141150-18), CH-CCR-FD03-0420 (550-141150-19), CH-CCR-FD03-0420 (550-141150-20), CH-CCR-W305-0420 (550-141150-21), CH-CCR-W305-0420 (550-141150-22), CH-CCR-W306-0420 (550-141150-23), CH-CCR-W306-0420 (550-141150-24), CH-CCR-W307-0420 (550-141150-25), CH-CCR-W307-0420 (550-141150-26), CH-CCR-W308-0420 (550-141150-27), CH-CCR-W308-0420 (550-141150-28), CH-CCR-W314-0420 (550-141150-29), CH-CCR-W314-0420 (550-141150-30), CH-CCR-W317-0420 (550-141150-31), CH-CCR-FD04-0420 (550-141150-32) and CH-CCR-FD04-0420 (550-141150-33). Regulatory documents require a 24-hour waiting period from the time of the addition of the acid preservative to the time of digestion.

HPLC/IC

Method 300.0: The following samples were diluted for Fluoride by method EPA 300.0 due to the nature of the samples matrix: CH-CCR-M55-0420 (550-141150-5), CH-CCR-W301-0420 (550-141150-11), CH-CCR-W303-0420 (550-141150-15), CH-CCR-W304-0420 (550-141150-17), CH-CCR-W305-0420 (550-141150-21), CH-CCR-W307-0420 (550-141150-25), CH-CCR-W308-0420 (550-141150-27) and CH-CCR-W317-0420 (550-141150-31). The samples contained high concentrations of Chloride and Sulfate which exceeded the instrument's maximum column capacity. Fluoride was not detected in the diluted samples. As such, elevated reporting limits (RLs) have been provided and these data have been qualified with D1 and D5 flags.

Method 300.0: The matrix spike (MS) recovery and the matrix spike / matrix spike duplicate (MS/MSD) precision for analytical batch 550-209010 were outside control limits for Fluoride by method EPA 300.0. Sample matrix interference and/or non-homogeneity were suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) recoveries and precision were within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method 200.7 Rev 4.4: The continuing calibration blank (CCB) for analytical batch 550-209337 contained sodium above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

Method 200.7 Rev 4.4: The following samples were diluted to bring the concentration of target analytes within the calibration range: CH-CCR-M52-0420 (550-141150-1), CH-CCR-M53-0420 (550-141150-3), CH-CCR-M55-0420 (550-141150-5), CH-CCR-M69-0420 (550-141150-7), CH-CCR-M70-0420 (550-141150-9), CH-CCR-W301-0420 (550-141150-11), CH-CCR-W302-0420 (550-141150-13), CH-CCR-W303-0420 (550-141150-15), CH-CCR-W304-0420 (550-141150-17), CH-CCR-FD03-0420 (550-141150-19), CH-CCR-W305-0420 (550-141150-21), CH-CCR-W306-0420 (550-141150-23), CH-CCR-W307-0420 (550-141150-25), CH-CCR-W308-0420 (550-141150-27), CH-CCR-W314-0420 (550-141150-29) and (550-141149-B-3-D ^10). Elevated reporting limits (RLs) are provided.

Method 200.7 Rev 4.4: The following samples were diluted to bring the concentration of target analytes within the calibration range:

Case Narrative

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Job ID: 550-141150-1 (Continued)

Laboratory: Eurofins TestAmerica, Phoenix (Continued)

CH-CCR-M55-0420 (550-141150-6) and CH-CCR-FD04-0420 (550-141150-32). Elevated reporting limits (RLs) are provided.

Method 200.7 Rev 4.4: The following samples were diluted due to the nature of the sample matrix (internal standard failures and undiluted caused instrument shut down): CH-CCR-M52-0420 (550-141150-1), CH-CCR-M53-0420 (550-141150-3), CH-CCR-M55-0420 (550-141150-5), CH-CCR-M69-0420 (550-141150-7), CH-CCR-M70-0420 (550-141150-9), CH-CCR-W301-0420 (550-141150-11), CH-CCR-W302-0420 (550-141150-13), CH-CCR-W303-0420 (550-141150-15), CH-CCR-W304-0420 (550-141150-17), CH-CCR-FD03-0420 (550-141150-19), CH-CCR-W305-0420 (550-141150-21), CH-CCR-W306-0420 (550-141150-23), CH-CCR-W307-0420 (550-141150-25), CH-CCR-W308-0420 (550-141150-27), CH-CCR-W314-0420 (550-141150-29), (550-141149-B-3-D ^5), (550-141149-B-3-B MS ^5) and (550-141149-B-3-C MSD ^5). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Field Service / Mobile Lab

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

Method SM 2320B: The sample duplicate (DU) precision for 550-208656 was outside control limits for Bicarbonate Alkalinity and Total Alkalinity associated with the following sample; CH-CCR-M52-0420 (550-141150-1) and (550-141150-C-1 DU). Sample matrix interference was suspected.

Method SM 5310B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for 550-208812 were outside control limits for Dissolved Organic Carbon (DOC). Sample matrix interference was suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) recoveries were within acceptance limits.

Method SM 5310B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for 550-209233 were outside control limits for Total Organic Carbon (TOC). Sample matrix interference was suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) recoveries were within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
550-141150-1	CH-CCR-M52-0420	Water	04/19/20 11:52	04/21/20 14:51	
550-141150-2	CH-CCR-M52-0420	Water	04/19/20 11:52	04/21/20 14:51	
550-141150-3	CH-CCR-M53-0420	Water	04/19/20 10:04	04/21/20 14:51	
550-141150-4	CH-CCR-M53-0420	Water	04/19/20 10:04	04/21/20 14:51	
550-141150-5	CH-CCR-M55-0420	Water	04/17/20 15:56	04/21/20 14:51	
550-141150-6	CH-CCR-M55-0420	Water	04/17/20 15:56	04/21/20 14:51	
550-141150-7	CH-CCR-M69-0420	Water	04/19/20 13:12	04/21/20 14:51	
550-141150-8	CH-CCR-M69-0420	Water	04/19/20 13:12	04/21/20 14:51	
550-141150-9	CH-CCR-M70-0420	Water	04/19/20 14:55	04/21/20 14:51	
550-141150-10	CH-CCR-M70-0420	Water	04/19/20 14:55	04/21/20 14:51	
550-141150-11	CH-CCR-W301-0420	Water	04/18/20 13:37	04/21/20 14:51	
550-141150-12	CH-CCR-W301-0420	Water	04/18/20 13:37	04/21/20 14:51	
550-141150-13	CH-CCR-W302-0420	Water	04/17/20 09:45	04/21/20 14:51	
550-141150-14	CH-CCR-W302-0420	Water	04/17/20 09:45	04/21/20 14:51	
550-141150-15	CH-CCR-W303-0420	Water	04/18/20 14:49	04/21/20 14:51	
550-141150-16	CH-CCR-W303-0420	Water	04/18/20 14:49	04/21/20 14:51	
550-141150-17	CH-CCR-W304-0420	Water	04/17/20 11:16	04/21/20 14:51	
550-141150-18	CH-CCR-W304-0420	Water	04/17/20 11:16	04/21/20 14:51	
550-141150-19	CH-CCR-FD03-0420	Water	04/19/20 10:04	04/21/20 14:51	
550-141150-20	CH-CCR-FD03-0420	Water	04/19/20 10:04	04/21/20 14:51	
550-141150-21	CH-CCR-W305-0420	Water	04/18/20 16:24	04/21/20 14:51	
550-141150-22	CH-CCR-W305-0420	Water	04/18/20 16:24	04/21/20 14:51	
550-141150-23	CH-CCR-W306-0420	Water	04/19/20 08:12	04/21/20 14:51	
550-141150-24	CH-CCR-W306-0420	Water	04/19/20 08:12	04/21/20 14:51	
550-141150-25	CH-CCR-W307-0420	Water	04/17/20 12:27	04/21/20 14:51	
550-141150-26	CH-CCR-W307-0420	Water	04/17/20 12:27	04/21/20 14:51	
550-141150-27	CH-CCR-W308-0420	Water	04/17/20 14:18	04/21/20 14:51	
550-141150-28	CH-CCR-W308-0420	Water	04/17/20 14:18	04/21/20 14:51	
550-141150-29	CH-CCR-W314-0420	Water	04/19/20 16:09	04/21/20 14:51	
550-141150-30	CH-CCR-W314-0420	Water	04/19/20 16:09	04/21/20 14:51	
550-141150-31	CH-CCR-W317-0420	Water	04/16/20 16:48	04/21/20 14:51	
550-141150-32	CH-CCR-FD04-0420	Water	04/19/20 08:12	04/21/20 14:51	
550-141150-33	CH-CCR-FD04-0420	Water	04/19/20 08:12	04/21/20 14:51	

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-M52-0420

Lab Sample ID: 550-141150-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4300	D2	400		mg/L	200		300.0	Total/NA
Fluoride	0.88	D1	0.80		mg/L	2		300.0	Total/NA
Sulfate	3400	D2	400		mg/L	200		300.0	Total/NA
Beryllium	0.00056	E4	0.0010	0.00050	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	4.1	D1	0.25	0.015	mg/L	5		200.7 Rev 4.4	Total/NA
Calcium	700		2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	5.0		0.10	0.030	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	250		2.0	0.055	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	1.2	D1	0.050	0.015	mg/L	5		200.7 Rev 4.4	Total/NA
Potassium	8.9		0.50	0.15	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	2500	B3 D2	5.0	0.28	mg/L	10		200.7 Rev 4.4	Total/NA
Barium	0.014	D1	0.0050		mg/L	10		200.8 LL	Total/NA
Chromium	0.018	D1	0.010		mg/L	10		200.8 LL	Total/NA
Cobalt	0.039	D1	0.0050		mg/L	10		200.8 LL	Total/NA
Molybdenum	0.022	D1	0.0025		mg/L	5		200.8 LL	Total/NA
Thallium	0.00010		0.00010		mg/L	1		200.8 LL	Total/NA
Alkalinity as CaCO3	210	R8	6.0		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	210	R8	6.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	11000	D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.2	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	11.2	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	1.5		0.50		mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	1.5		0.50		mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	1.5		0.50		mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-M52-0420

Lab Sample ID: 550-141150-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	2.9		0.10		mg/L	1		200.7 Rev 4.4	Dissolved
Manganese	1.1		0.010		mg/L	1		200.7 Rev 4.4	Dissolved
Cobalt	0.042	D1	0.0050		mg/L	10		200.8 LL	Dissolved
Dissolved Organic Carbon	1.4	M2	0.50		mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	1.4	M2	0.50		mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	1.4	M2	0.50		mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-M53-0420

Lab Sample ID: 550-141150-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2400	D2	400		mg/L	200		300.0	Total/NA
Fluoride	2.1	D1	0.80		mg/L	2		300.0	Total/NA
Sulfate	3100	D2	400		mg/L	200		300.0	Total/NA
Beryllium	0.00055	E4	0.0010	0.00050	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	3.7	D1	0.25	0.015	mg/L	5		200.7 Rev 4.4	Total/NA
Calcium	610		2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	210		2.0	0.055	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	5.2	D1	0.050	0.015	mg/L	5		200.7 Rev 4.4	Total/NA
Potassium	15		0.50	0.15	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	1600	B3 D2	5.0	0.28	mg/L	10		200.7 Rev 4.4	Total/NA
Barium	0.0087		0.00050		mg/L	1		200.8 LL	Total/NA
Cadmium	0.0012		0.00010		mg/L	1		200.8 LL	Total/NA
Cobalt	0.014	D1	0.0050		mg/L	10		200.8 LL	Total/NA
Molybdenum	0.038	D1	0.0025		mg/L	5		200.8 LL	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-M53-0420 (Continued)

Lab Sample ID: 550-141150-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity as CaCO ₃	96		6.0		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO ₃	96		6.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	8200	D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	12.3	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	1.2		0.50		mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	1.1		0.50		mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	1.2		0.50		mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-M53-0420

Lab Sample ID: 550-141150-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	4.8		0.010		mg/L	1		200.7 Rev 4.4	Dissolved
Cobalt	0.016	D1	0.0050		mg/L	10		200.8 LL	Dissolved
Dissolved Organic Carbon	1.2		0.50		mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	1.2		0.50		mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	1.2		0.50		mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-M55-0420

Lab Sample ID: 550-141150-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4600	D2	400		mg/L	200		300.0	Total/NA
Nitrate Nitrite as N	0.52	D1	0.50		mg/L	5		300.0	Total/NA
Sulfate	3500	D2	400		mg/L	200		300.0	Total/NA
Beryllium	0.00059	E4	0.0010	0.00050	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	0.46	D1	0.25	0.015	mg/L	5		200.7 Rev 4.4	Total/NA
Calcium	700		2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.040	E4	0.10	0.030	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	160		2.0	0.055	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	6.5		0.50	0.15	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	2900	B3 D2	5.0	0.28	mg/L	10		200.7 Rev 4.4	Total/NA
Arsenic	0.0071	D1	0.0050		mg/L	10		200.8 LL	Total/NA
Barium	0.014	D1	0.0050		mg/L	10		200.8 LL	Total/NA
Chromium	0.016	D1	0.010		mg/L	10		200.8 LL	Total/NA
Molybdenum	0.0048	D1	0.0025		mg/L	5		200.8 LL	Total/NA
Selenium	0.12	D1	0.0050		mg/L	10		200.8 LL	Total/NA
Alkalinity as CaCO ₃	190		6.0		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO ₃	190		6.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	11000	D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	12.2	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	3.2		0.50		mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	3.2		0.50		mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	3.2		0.50		mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-M55-0420

Lab Sample ID: 550-141150-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0050	D1	0.0050		mg/L	10		200.8 LL	Dissolved
Dissolved Organic Carbon	3.4		0.50		mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	3.4		0.50		mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	3.4		0.50		mg/L	1		SM 5310B	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-M69-0420

Lab Sample ID: 550-141150-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2500	D2	400		mg/L	200		300.0	Total/NA
Fluoride	1.5	D1	0.80		mg/L	2		300.0	Total/NA
Sulfate	3000	D2	400		mg/L	200		300.0	Total/NA
Beryllium	0.00052	E4	0.0010	0.00050	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	3.7	D1	0.25	0.015	mg/L	5		200.7 Rev 4.4	Total/NA
Calcium	630		2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.21		0.10	0.030	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	170		2.0	0.055	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	8.6	D1	0.050	0.015	mg/L	5		200.7 Rev 4.4	Total/NA
Potassium	10		0.50	0.15	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	1800	B3 D2	5.0	0.28	mg/L	10		200.7 Rev 4.4	Total/NA
Barium	0.027		0.00050		mg/L	1		200.8 LL	Total/NA
Cadmium	0.00011		0.00010		mg/L	1		200.8 LL	Total/NA
Cobalt	0.027	D1	0.0050		mg/L	10		200.8 LL	Total/NA
Molybdenum	0.055	D1	0.0025		mg/L	5		200.8 LL	Total/NA
Alkalinity as CaCO3	140		6.0		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	140		6.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	8000	D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	13.8	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	1.7		0.50		mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	1.7		0.50		mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	1.7		0.50		mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-M69-0420

Lab Sample ID: 550-141150-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	8.2		0.010		mg/L	1		200.7 Rev 4.4	Dissolved
Cobalt	0.026	D1	0.0050		mg/L	10		200.8 LL	Dissolved
Dissolved Organic Carbon	1.7		0.50		mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	1.7		0.50		mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	1.7		0.50		mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-M70-0420

Lab Sample ID: 550-141150-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2400	D2	400		mg/L	200		300.0	Total/NA
Fluoride	1.2	D1	0.80		mg/L	2		300.0	Total/NA
Sulfate	2700	D2	400		mg/L	200		300.0	Total/NA
Boron	2.4	D1	0.25	0.015	mg/L	5		200.7 Rev 4.4	Total/NA
Calcium	640		2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.072	E4	0.10	0.030	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	160		2.0	0.055	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	1.8	D1	0.050	0.015	mg/L	5		200.7 Rev 4.4	Total/NA
Potassium	11		0.50	0.15	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	1500	B3 D2	5.0	0.28	mg/L	10		200.7 Rev 4.4	Total/NA
Barium	0.014		0.00050		mg/L	1		200.8 LL	Total/NA
Cadmium	0.00053		0.00010		mg/L	1		200.8 LL	Total/NA
Cobalt	0.025	D1	0.0050		mg/L	10		200.8 LL	Total/NA
Lead	0.0023		0.00050		mg/L	1		200.8 LL	Total/NA
Molybdenum	0.034	D1	0.0025		mg/L	5		200.8 LL	Total/NA
Alkalinity as CaCO3	85		6.0		mg/L	1		SM 2320B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-M70-0420 (Continued)

Lab Sample ID: 550-141150-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Bicarbonate Alkalinity as CaCO ₃	85		6.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	7400	D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	13.9	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	1.3		0.50		mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	1.3		0.50		mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	1.3		0.50		mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-M70-0420

Lab Sample ID: 550-141150-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	1.8		0.010		mg/L	1		200.7 Rev 4.4	Dissolved
Cobalt	0.024	D1	0.0050		mg/L	10		200.8 LL	Dissolved
Dissolved Organic Carbon	1.7		0.50		mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	1.8		0.50		mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	1.7		0.50		mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-W301-0420

Lab Sample ID: 550-141150-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6400	D2	400		mg/L	200		300.0	Total/NA
Nitrate Nitrite as N	17	D1	0.50		mg/L	5		300.0	Total/NA
Sulfate	3600	D2	400		mg/L	200		300.0	Total/NA
Beryllium	0.00063	E4	0.0010	0.00050	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	0.70	D1	0.25	0.015	mg/L	5		200.7 Rev 4.4	Total/NA
Calcium	690		2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.41	D1 E4	1.0	0.20	mg/L	5		200.7 Rev 4.4	Total/NA
Magnesium	160		2.0	0.055	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	1.8	D1	0.050	0.015	mg/L	5		200.7 Rev 4.4	Total/NA
Potassium	9.6	D1	2.5	0.73	mg/L	5		200.7 Rev 4.4	Total/NA
Sodium	4100	B3 D2	5.0	0.28	mg/L	10		200.7 Rev 4.4	Total/NA
Barium	0.0082	D1	0.0050		mg/L	10		200.8 LL	Total/NA
Cobalt	0.021	D1	0.0050		mg/L	10		200.8 LL	Total/NA
Molybdenum	0.0051	D1	0.0025		mg/L	5		200.8 LL	Total/NA
Selenium	0.0060	D1	0.0050		mg/L	10		200.8 LL	Total/NA
Alkalinity as CaCO ₃	150		6.0		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO ₃	150		6.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	14000	D2	200		mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	14.7	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	2.9		0.50		mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	2.9		0.50		mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	2.9		0.50		mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-W301-0420

Lab Sample ID: 550-141150-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	1.7		0.010		mg/L	1		200.7 Rev 4.4	Dissolved
Cobalt	0.022	D1	0.0050		mg/L	10		200.8 LL	Dissolved
Dissolved Organic Carbon	3.1		0.50		mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	3.1		0.50		mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	3.1		0.50		mg/L	1		SM 5310B	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W302-0420

Lab Sample ID: 550-141150-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3000	D2	400		mg/L	200		300.0	Total/NA
Fluoride	0.97	D1	0.80		mg/L	2		300.0	Total/NA
Sulfate	2300	D2	400		mg/L	200		300.0	Total/NA
Boron	0.64	D1	0.25	0.015	mg/L	5		200.7 Rev 4.4	Total/NA
Calcium	590		2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.40		0.10	0.030	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	120		2.0	0.055	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.022	D1 E4	0.050	0.015	mg/L	5		200.7 Rev 4.4	Total/NA
Potassium	6.5	D1	2.5	0.73	mg/L	5		200.7 Rev 4.4	Total/NA
Sodium	1800	B3 D2	5.0	0.28	mg/L	10		200.7 Rev 4.4	Total/NA
Barium	0.013	D1	0.0050		mg/L	10		200.8 LL	Total/NA
Chromium	0.086	D1	0.010		mg/L	10		200.8 LL	Total/NA
Cobalt	0.0064	D1	0.0050		mg/L	10		200.8 LL	Total/NA
Molybdenum	0.012	D1	0.0025		mg/L	5		200.8 LL	Total/NA
Alkalinity as CaCO3	130		6.0		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	130		6.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	8100	D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	15.7	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	0.64		0.50		mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	0.62		0.50		mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	0.64		0.50		mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-W302-0420

Lab Sample ID: 550-141150-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	0.14		0.10		mg/L	1		200.7 Rev 4.4	Dissolved
Manganese	0.027		0.010		mg/L	1		200.7 Rev 4.4	Dissolved
Cobalt	0.0064	D1	0.0050		mg/L	10		200.8 LL	Dissolved
Dissolved Organic Carbon	1.2		0.50		mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	1.2		0.50		mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	1.2		0.50		mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-W303-0420

Lab Sample ID: 550-141150-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2800	D2	400		mg/L	200		300.0	Total/NA
Sulfate	3300	D2	400		mg/L	200		300.0	Total/NA
Beryllium	0.00059	E4	0.0010	0.00050	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	3.7	D1	0.25	0.015	mg/L	5		200.7 Rev 4.4	Total/NA
Calcium	620		2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	190		2.0	0.055	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.036	D1 E4	0.050	0.015	mg/L	5		200.7 Rev 4.4	Total/NA
Potassium	6.8	D1	2.5	0.73	mg/L	5		200.7 Rev 4.4	Total/NA
Sodium	2100	B3 D2	5.0	0.28	mg/L	10		200.7 Rev 4.4	Total/NA
Barium	0.0048	D1	0.0025		mg/L	5		200.8 LL	Total/NA
Cobalt	0.027	D1	0.0050		mg/L	10		200.8 LL	Total/NA
Molybdenum	0.024	D1	0.0025		mg/L	5		200.8 LL	Total/NA
Alkalinity as CaCO3	150		6.0		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	150		6.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	8900	D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7		SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W303-0420 (Continued)

Lab Sample ID: 550-141150-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Temperature	14.6	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	1.4		0.50		mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	1.4		0.50		mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	1.4		0.50		mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-W303-0420

Lab Sample ID: 550-141150-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.023		0.010		mg/L	1		200.7 Rev 4.4	Dissolved
Cobalt	0.028	D1	0.0050		mg/L	10		200.8 LL	Dissolved
Dissolved Organic Carbon	1.4		0.50		mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	1.4		0.50		mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	1.4		0.50		mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-W304-0420

Lab Sample ID: 550-141150-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2700	D2	400		mg/L	200		300.0	Total/NA
Sulfate	2600	D2	400		mg/L	200		300.0	Total/NA
Boron	0.52	D1	0.25	0.015	mg/L	5		200.7 Rev 4.4	Total/NA
Calcium	570		2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.11		0.10	0.030	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.46	D1 E4	1.0	0.20	mg/L	5		200.7 Rev 4.4	Total/NA
Magnesium	94		2.0	0.055	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.89	D1	0.050	0.015	mg/L	5		200.7 Rev 4.4	Total/NA
Potassium	5.0	D1	2.5	0.73	mg/L	5		200.7 Rev 4.4	Total/NA
Sodium	2100	B3 D2	5.0	0.28	mg/L	10		200.7 Rev 4.4	Total/NA
Barium	0.0069	D1	0.0050		mg/L	10		200.8 LL	Total/NA
Cobalt	0.0030	D1	0.0025		mg/L	5		200.8 LL	Total/NA
Molybdenum	0.0046	D1	0.0025		mg/L	5		200.8 LL	Total/NA
Alkalinity as CaCO3	140		6.0		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	140		6.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	8400	D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	15.3	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	0.70		0.50		mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	0.73		0.50		mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	0.70		0.50		mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-W304-0420

Lab Sample ID: 550-141150-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.82		0.010		mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.0029	D1	0.0025		mg/L	5		200.8 LL	Dissolved
Cobalt	0.0032	D1	0.0025		mg/L	5		200.8 LL	Dissolved
Dissolved Organic Carbon	0.97		0.50		mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	0.97		0.50		mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	0.97		0.50		mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-FD03-0420

Lab Sample ID: 550-141150-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2300	D2	400		mg/L	200		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-FD03-0420 (Continued)

Lab Sample ID: 550-141150-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	2.1	D1	0.80		mg/L	2		300.0	Total/NA
Sulfate	3000	D2	400		mg/L	200		300.0	Total/NA
Beryllium	0.00050	E4	0.0010	0.00050	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	3.7	D1	0.25	0.015	mg/L	5		200.7 Rev 4.4	Total/NA
Calcium	620		2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.27	D1 E4	1.0	0.20	mg/L	5		200.7 Rev 4.4	Total/NA
Magnesium	210		2.0	0.055	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	5.0	D1	0.050	0.015	mg/L	5		200.7 Rev 4.4	Total/NA
Potassium	12	D1	2.5	0.73	mg/L	5		200.7 Rev 4.4	Total/NA
Sodium	1600	B3 D2	5.0	0.28	mg/L	10		200.7 Rev 4.4	Total/NA
Barium	0.0088	D1	0.0050		mg/L	10		200.8 LL	Total/NA
Cadmium	0.0012	D1	0.0010		mg/L	10		200.8 LL	Total/NA
Cobalt	0.014	D1	0.0050		mg/L	10		200.8 LL	Total/NA
Molybdenum	0.039	D1	0.0025		mg/L	5		200.8 LL	Total/NA
Alkalinity as CaCO3	96		6.0		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	96		6.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	7800	D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	15.0	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	1.2		0.50		mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	1.2		0.50		mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	1.2		0.50		mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-FD03-0420

Lab Sample ID: 550-141150-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	5.0		0.010		mg/L	1		200.7 Rev 4.4	Dissolved
Cobalt	0.014	D1	0.0050		mg/L	10		200.8 LL	Dissolved
Dissolved Organic Carbon	1.3		0.50		mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	1.3		0.50		mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	1.3		0.50		mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-W305-0420

Lab Sample ID: 550-141150-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2400	D2	400		mg/L	200		300.0	Total/NA
Sulfate	2300	D2	400		mg/L	200		300.0	Total/NA
Boron	0.41	D1	0.25	0.015	mg/L	5		200.7 Rev 4.4	Total/NA
Calcium	680		2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.48		0.10	0.030	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.30	D1 E4	1.0	0.20	mg/L	5		200.7 Rev 4.4	Total/NA
Magnesium	110		2.0	0.055	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	8.1	D1	0.050	0.015	mg/L	5		200.7 Rev 4.4	Total/NA
Potassium	1.4	D1 E4	2.5	0.73	mg/L	5		200.7 Rev 4.4	Total/NA
Sodium	1600	B3 D2	5.0	0.28	mg/L	10		200.7 Rev 4.4	Total/NA
Barium	0.014	D1	0.0050		mg/L	10		200.8 LL	Total/NA
Chromium	0.0069	D1	0.0050		mg/L	5		200.8 LL	Total/NA
Cobalt	0.020	D1	0.0050		mg/L	10		200.8 LL	Total/NA
Lead	0.0024		0.00050		mg/L	1		200.8 LL	Total/NA
Molybdenum	0.021	D1	0.0025		mg/L	5		200.8 LL	Total/NA
Alkalinity as CaCO3	100		6.0		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	100		6.0		mg/L	1		SM 2320B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W305-0420 (Continued)

Lab Sample ID: 550-141150-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	7600	D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	15.0	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	1.8		0.50		mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	1.8		0.50		mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	1.8		0.50		mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-W305-0420

Lab Sample ID: 550-141150-22

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	0.28		0.10		mg/L	1		200.7 Rev 4.4	Dissolved
Manganese	7.3		0.010		mg/L	1		200.7 Rev 4.4	Dissolved
Cobalt	0.020	D1	0.0050		mg/L	10		200.8 LL	Dissolved
Dissolved Organic Carbon	1.7		0.50		mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	1.7		0.50		mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	1.7		0.50		mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-W306-0420

Lab Sample ID: 550-141150-23

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2000	D2	400		mg/L	200		300.0	Total/NA
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Sulfate	13000	D2	400		mg/L	200		300.0	Total/NA
Beryllium	0.0017		0.0010	0.00050	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	1.2	D1	0.25	0.015	mg/L	5		200.7 Rev 4.4	Total/NA
Calcium	400		2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	1.3	D1	1.0	0.20	mg/L	5		200.7 Rev 4.4	Total/NA
Magnesium	230		2.0	0.055	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	3.6	D1	2.5	0.73	mg/L	5		200.7 Rev 4.4	Total/NA
Sodium	5700	B3 D2	5.0	0.28	mg/L	10		200.7 Rev 4.4	Total/NA
Arsenic	0.0050	D1	0.0050		mg/L	10		200.8 LL	Total/NA
Barium	0.012	D1	0.0050		mg/L	10		200.8 LL	Total/NA
Molybdenum	0.042	D1	0.0025		mg/L	5		200.8 LL	Total/NA
Alkalinity as CaCO3	130		6.0		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	130		6.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	19000	D2	200		mg/L	1		SM 2540C	Total/NA
pH	7.8	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	14.9	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	2.4		0.50		mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	2.4		0.50		mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	2.4		0.50		mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-W306-0420

Lab Sample ID: 550-141150-24

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0055	D1	0.0050		mg/L	10		200.8 LL	Dissolved
Dissolved Organic Carbon	2.6		0.50		mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	2.6		0.50		mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	2.6		0.50		mg/L	1		SM 5310B	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W307-0420

Lab Sample ID: 550-141150-25

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2600	D2	400		mg/L	200		300.0	Total/NA
Sulfate	2500	D2	400		mg/L	200		300.0	Total/NA
Boron	2.7	D1	0.25	0.015	mg/L	5		200.7 Rev 4.4	Total/NA
Calcium	710		2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.16		0.10	0.030	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.29	D1 E4	1.0	0.20	mg/L	5		200.7 Rev 4.4	Total/NA
Magnesium	130		2.0	0.055	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.030	D1 E4	0.050	0.015	mg/L	5		200.7 Rev 4.4	Total/NA
Potassium	4.2	D1	2.5	0.73	mg/L	5		200.7 Rev 4.4	Total/NA
Sodium	1600	B3 D2	5.0	0.28	mg/L	10		200.7 Rev 4.4	Total/NA
Barium	0.012	D1	0.0050		mg/L	10		200.8 LL	Total/NA
Chromium	0.013	D1	0.010		mg/L	10		200.8 LL	Total/NA
Cobalt	0.084	D1	0.0050		mg/L	10		200.8 LL	Total/NA
Lead	0.0011		0.00050		mg/L	1		200.8 LL	Total/NA
Molybdenum	0.011	D1	0.0025		mg/L	5		200.8 LL	Total/NA
Alkalinity as CaCO3	110		6.0		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	110		6.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	8000	D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	15.1	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	1.3		0.50		mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	1.3		0.50		mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	1.3		0.50		mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-W307-0420

Lab Sample ID: 550-141150-26

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.027		0.010		mg/L	1		200.7 Rev 4.4	Dissolved
Cobalt	0.085	D1	0.0050		mg/L	10		200.8 LL	Dissolved
Dissolved Organic Carbon	1.6		0.50		mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	1.6		0.50		mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	1.6		0.50		mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-W308-0420

Lab Sample ID: 550-141150-27

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2900	D2	400		mg/L	200		300.0	Total/NA
Sulfate	2500	D2	400		mg/L	200		300.0	Total/NA
Boron	0.50	D1	0.25	0.015	mg/L	5		200.7 Rev 4.4	Total/NA
Calcium	760		2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.031	E4	0.10	0.030	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.46	D1 E4	1.0	0.20	mg/L	5		200.7 Rev 4.4	Total/NA
Magnesium	120		2.0	0.055	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.072	D1	0.050	0.015	mg/L	5		200.7 Rev 4.4	Total/NA
Potassium	6.4	D1	2.5	0.73	mg/L	5		200.7 Rev 4.4	Total/NA
Sodium	2100	B3 D2	5.0	0.28	mg/L	10		200.7 Rev 4.4	Total/NA
Barium	0.0072	D1	0.0050		mg/L	10		200.8 LL	Total/NA
Chromium	0.077	D1	0.010		mg/L	10		200.8 LL	Total/NA
Molybdenum	0.0052	D1	0.0025		mg/L	5		200.8 LL	Total/NA
Selenium	0.020	D1	0.0050		mg/L	10		200.8 LL	Total/NA
Alkalinity as CaCO3	170		6.0		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	170		6.0		mg/L	1		SM 2320B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W308-0420 (Continued)

Lab Sample ID: 550-141150-27

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	8600	D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	16.1	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	1.0		0.50		mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	1.1		0.50		mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	1.0		0.50		mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-W308-0420

Lab Sample ID: 550-141150-28

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.073		0.010		mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.0025	D1	0.0025		mg/L	5		200.8 LL	Dissolved
Dissolved Organic Carbon	1.2		0.50		mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	1.2		0.50		mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	1.2		0.50		mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-W314-0420

Lab Sample ID: 550-141150-29

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2900	D2	400		mg/L	200		300.0	Total/NA
Fluoride	0.84	D1	0.80		mg/L	2		300.0	Total/NA
Sulfate	2300	D2	400		mg/L	200		300.0	Total/NA
Boron	1.4	D1	0.25	0.015	mg/L	5		200.7 Rev 4.4	Total/NA
Calcium	790		2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.44	D1 E4	1.0	0.20	mg/L	5		200.7 Rev 4.4	Total/NA
Magnesium	170		2.0	0.055	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.063	D1	0.050	0.015	mg/L	5		200.7 Rev 4.4	Total/NA
Sodium	1500	B3 D2	5.0	0.28	mg/L	10		200.7 Rev 4.4	Total/NA
Barium	0.011	D1	0.0050		mg/L	10		200.8 LL	Total/NA
Chromium	0.010	D1	0.010		mg/L	10		200.8 LL	Total/NA
Cobalt	0.022	D1	0.0050		mg/L	10		200.8 LL	Total/NA
Molybdenum	0.010	D1	0.0025		mg/L	5		200.8 LL	Total/NA
Alkalinity as CaCO3	98		6.0		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	98		6.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	7600	D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	8.0	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	0.97		0.50		mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	0.98		0.50		mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	0.97		0.50		mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-W314-0420

Lab Sample ID: 550-141150-30

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.057		0.010		mg/L	1		200.7 Rev 4.4	Dissolved
Cobalt	0.023	D1	0.0050		mg/L	10		200.8 LL	Dissolved
Dissolved Organic Carbon	1.0		0.50		mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	1.1		0.50		mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	1.0		0.50		mg/L	1		SM 5310B	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W317-0420

Lab Sample ID: 550-141150-31

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1500	D2	400		mg/L	200		300.0	Total/NA
Sulfate	730	D2	400		mg/L	200		300.0	Total/NA
Boron	0.21		0.050	0.0030	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	350		2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.042	E4	0.20	0.040	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0038	D1	0.0025		mg/L	5		200.8 LL	Total/NA
Barium	0.031	D1	0.0050		mg/L	10		200.8 LL	Total/NA
Molybdenum	0.0037	D1	0.0025		mg/L	5		200.8 LL	Total/NA
Total Dissolved Solids	3700	D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	8.4	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: CH-CCR-FD04-0420

Lab Sample ID: 550-141150-32

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1800	D2	400		mg/L	200		300.0	Total/NA
Fluoride	1.5	D1	0.80		mg/L	2		300.0	Total/NA
Sulfate	12000	D2	400		mg/L	200		300.0	Total/NA
Beryllium	0.0017		0.0010	0.00050	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	1.1		0.050	0.0030	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	400		2.0	0.015	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	1.2		0.20	0.040	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	230		2.0	0.055	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	9.7		0.50	0.15	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	5500	D2	5.0	0.28	mg/L	10		200.7 Rev 4.4	Total/NA
Arsenic	0.0048	D1	0.0025		mg/L	5		200.8 LL	Total/NA
Barium	0.011	D1	0.0050		mg/L	10		200.8 LL	Total/NA
Molybdenum	0.039	D1	0.0025		mg/L	5		200.8 LL	Total/NA
Alkalinity as CaCO3	130		6.0		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	130		6.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	19000	D1 D2	200		mg/L	1		SM 2540C	Total/NA
pH	7.9	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	10.0	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	2.5		0.50		mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	2.5		0.50		mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	2.5		0.50		mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-FD04-0420

Lab Sample ID: 550-141150-33

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0051	D1	0.0050		mg/L	10		200.8 LL	Dissolved
Dissolved Organic Carbon	2.7		0.50		mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	2.7		0.50		mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	2.7		0.50		mg/L	1		SM 5310B	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-M52-0420

Lab Sample ID: 550-141150-1

Date Collected: 04/19/20 11:52

Matrix: Water

Date Received: 04/21/20 14:51

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4300	D2	400		mg/L			04/23/20 01:08	200
Fluoride	0.88	D1	0.80		mg/L			04/23/20 00:13	2
Nitrate Nitrite as N	ND	D1 D5	0.50		mg/L			04/25/20 04:00	5
Sulfate	3400	D2	400		mg/L			04/23/20 01:08	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.00056	E4	0.0010	0.00050	mg/L		04/22/20 13:37	04/28/20 17:42	1
Boron	4.1	D1	0.25	0.015	mg/L		04/22/20 13:37	05/05/20 13:33	5
Calcium	700		2.0	0.015	mg/L		04/22/20 13:37	04/28/20 17:42	1
Iron	5.0		0.10	0.030	mg/L		04/22/20 13:37	04/28/20 17:42	1
Lithium	ND	D1 E8	1.0	0.20	mg/L		04/22/20 13:37	05/05/20 13:33	5
Magnesium	250		2.0	0.055	mg/L		04/22/20 13:37	04/28/20 17:42	1
Manganese	1.2	D1	0.050	0.015	mg/L		04/22/20 13:37	05/07/20 17:35	5
Potassium	8.9		0.50	0.15	mg/L		04/22/20 13:37	04/28/20 17:42	1
Sodium	2500	B3 D2	5.0	0.28	mg/L		04/22/20 13:37	04/30/20 19:34	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:24	5
Barium	0.014	D1	0.0050		mg/L		04/22/20 06:44	04/30/20 22:22	10
Cadmium	ND	D1	0.00050		mg/L		04/22/20 06:44	05/04/20 17:24	5
Chromium	0.018	D1	0.010		mg/L		04/22/20 06:44	04/30/20 22:22	10
Cobalt	0.039	D1	0.0050		mg/L		04/22/20 06:44	04/30/20 22:22	10
Lead	ND		0.00050		mg/L		04/22/20 06:44	04/23/20 22:52	1
Molybdenum	0.022	D1	0.0025		mg/L		05/04/20 05:28	05/04/20 18:51	5
Selenium	ND	D1	0.0050		mg/L		04/22/20 06:44	04/30/20 22:22	10
Thallium	0.00010		0.00010		mg/L		04/22/20 06:44	04/23/20 22:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	210	R8	6.0		mg/L			04/23/20 09:39	1
Bicarbonate Alkalinity as CaCO3	210	R8	6.0		mg/L			04/23/20 09:39	1
Carbonate Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 09:39	1
Alkalinity, Phenolphthalein	ND		6.0		mg/L			04/23/20 09:39	1
Hydroxide Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 09:39	1
Total Dissolved Solids	11000	D2	100		mg/L			04/23/20 09:33	1
pH	7.2	H5	1.7		SU			04/24/20 15:00	1
Temperature	11.2	H5	0.1		Degrees C			04/24/20 15:00	1
Ammonia	ND		0.50		mg/L			04/22/20 19:09	1
Total Organic Carbon	1.5		0.50		mg/L			04/23/20 18:40	1
Total Organic Carbon - Duplicates	1.5		0.50		mg/L			04/23/20 18:40	1
Total Organic Carbon - Quad	1.5		0.50		mg/L			04/23/20 18:40	1

Client Sample ID: CH-CCR-M52-0420

Lab Sample ID: 550-141150-2

Date Collected: 04/19/20 11:52

Matrix: Water

Date Received: 04/21/20 14:51

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	2.9		0.10		mg/L		04/22/20 13:34	04/27/20 22:49	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-M52-0420

Lab Sample ID: 550-141150-2

Date Collected: 04/19/20 11:52

Matrix: Water

Date Received: 04/21/20 14:51

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	1.1		0.010		mg/L		04/22/20 13:34	04/27/20 22:49	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0025		mg/L		04/22/20 06:33	05/01/20 20:01	5
Cobalt	0.042	D1	0.0050		mg/L		04/22/20 06:33	04/30/20 21:30	10

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.4	M2	0.50		mg/L			04/23/20 12:41	1
Dissolved Organic Carbon - Duplicate	1.4	M2	0.50		mg/L			04/23/20 12:41	1
Dissolved Organic Carbon - Quad	1.4	M2	0.50		mg/L			04/23/20 12:41	1

Client Sample ID: CH-CCR-M53-0420

Lab Sample ID: 550-141150-3

Date Collected: 04/19/20 10:04

Matrix: Water

Date Received: 04/21/20 14:51

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2400	D2	400		mg/L			04/22/20 23:17	200
Fluoride	2.1	D1	0.80		mg/L			04/22/20 22:59	2
Nitrate Nitrite as N	ND	D1 D5	0.50		mg/L			04/25/20 06:45	5
Sulfate	3100	D2	400		mg/L			04/22/20 23:17	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.00055	E4	0.0010	0.00050	mg/L		04/22/20 13:37	04/28/20 17:46	1
Boron	3.7	D1	0.25	0.015	mg/L		04/22/20 13:37	05/05/20 13:37	5
Calcium	610		2.0	0.015	mg/L		04/22/20 13:37	04/28/20 17:46	1
Iron	ND	E8	0.10	0.030	mg/L		04/22/20 13:37	04/28/20 17:46	1
Lithium	ND	D1 E8	1.0	0.20	mg/L		04/22/20 13:37	05/05/20 13:37	5
Magnesium	210		2.0	0.055	mg/L		04/22/20 13:37	04/28/20 17:46	1
Manganese	5.2	D1	0.050	0.015	mg/L		04/22/20 13:37	05/07/20 17:39	5
Potassium	15		0.50	0.15	mg/L		04/22/20 13:37	04/28/20 17:46	1
Sodium	1600	B3 D2	5.0	0.28	mg/L		04/22/20 13:37	04/30/20 19:38	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:26	5
Barium	0.0087		0.00050		mg/L		04/22/20 06:44	04/23/20 22:54	1
Cadmium	0.0012		0.00010		mg/L		04/22/20 06:44	04/23/20 22:54	1
Chromium	ND	D1	0.0050		mg/L		04/22/20 06:44	05/04/20 17:26	5
Cobalt	0.014	D1	0.0050		mg/L		04/22/20 06:44	04/30/20 22:24	10
Lead	ND		0.00050		mg/L		04/22/20 06:44	04/23/20 22:54	1
Molybdenum	0.038	D1	0.0025		mg/L		05/04/20 05:28	05/04/20 18:48	5
Selenium	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:26	5
Thallium	ND		0.00010		mg/L		04/22/20 06:44	04/23/20 22:54	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-M53-0420

Lab Sample ID: 550-141150-3

Date Collected: 04/19/20 10:04

Matrix: Water

Date Received: 04/21/20 14:51

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	96		6.0		mg/L			04/23/20 09:58	1
Bicarbonate Alkalinity as CaCO3	96		6.0		mg/L			04/23/20 09:58	1
Carbonate Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 09:58	1
Alkalinity, Phenolphthalein	ND		6.0		mg/L			04/23/20 09:58	1
Hydroxide Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 09:58	1
Total Dissolved Solids	8200	D2	100		mg/L			04/24/20 09:09	1
pH	7.5	H5	1.7		SU			04/24/20 15:00	1
Temperature	12.3	H5	0.1		Degrees C			04/24/20 15:00	1
Ammonia	ND		0.50		mg/L			04/22/20 19:35	1
Total Organic Carbon	1.2		0.50		mg/L			04/27/20 19:46	1
Total Organic Carbon - Duplicates	1.1		0.50		mg/L			04/27/20 19:46	1
Total Organic Carbon - Quad	1.2		0.50		mg/L			04/27/20 19:46	1

Client Sample ID: CH-CCR-M53-0420

Lab Sample ID: 550-141150-4

Date Collected: 04/19/20 10:04

Matrix: Water

Date Received: 04/21/20 14:51

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10		mg/L		04/22/20 13:34	04/27/20 22:53	1
Manganese	4.8		0.010		mg/L		04/22/20 13:34	04/27/20 22:53	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0025		mg/L		04/22/20 06:33	05/01/20 20:03	5
Cobalt	0.016	D1	0.0050		mg/L		04/22/20 06:33	04/30/20 21:32	10

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.2		0.50		mg/L			04/27/20 17:27	1
Dissolved Organic Carbon - Duplicate	1.2		0.50		mg/L			04/27/20 17:27	1
Dissolved Organic Carbon - Quad	1.2		0.50		mg/L			04/27/20 17:27	1

Client Sample ID: CH-CCR-M55-0420

Lab Sample ID: 550-141150-5

Date Collected: 04/17/20 15:56

Matrix: Water

Date Received: 04/21/20 14:51

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4600	D2	400		mg/L			04/23/20 02:22	200
Fluoride	ND	D1 D5	0.80		mg/L			04/23/20 02:03	2
Nitrate Nitrite as N	0.52	D1	0.50		mg/L			04/25/20 07:12	5
Sulfate	3500	D2	400		mg/L			04/23/20 02:22	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.00059	E4	0.0010	0.00050	mg/L		04/22/20 13:37	04/28/20 17:50	1
Boron	0.46	D1	0.25	0.015	mg/L		04/22/20 13:37	05/05/20 13:49	5
Calcium	700		2.0	0.015	mg/L		04/22/20 13:37	04/28/20 17:50	1
Iron	0.040	E4	0.10	0.030	mg/L		04/22/20 13:37	04/28/20 17:50	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-M55-0420

Lab Sample ID: 550-141150-5

Date Collected: 04/17/20 15:56

Matrix: Water

Date Received: 04/21/20 14:51

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND	D1 E8	1.0	0.20	mg/L		04/22/20 13:37	05/05/20 13:49	5
Magnesium	160		2.0	0.055	mg/L		04/22/20 13:37	04/28/20 17:50	1
Manganese	ND	D1 E8	0.050	0.015	mg/L		04/22/20 13:37	05/07/20 17:43	5
Potassium	6.5		0.50	0.15	mg/L		04/22/20 13:37	04/28/20 17:50	1
Sodium	2900	B3 D2	5.0	0.28	mg/L		04/22/20 13:37	04/30/20 19:42	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0071	D1	0.0050		mg/L		04/22/20 06:44	04/30/20 22:26	10
Barium	0.014	D1	0.0050		mg/L		04/22/20 06:44	04/30/20 22:26	10
Cadmium	ND	D1	0.00050		mg/L		04/22/20 06:44	05/04/20 17:28	5
Chromium	0.016	D1	0.010		mg/L		04/22/20 06:44	04/30/20 22:26	10
Cobalt	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:28	5
Lead	ND		0.00050		mg/L		04/22/20 06:44	04/23/20 22:57	1
Molybdenum	0.0048	D1	0.0025		mg/L		05/04/20 05:28	05/04/20 18:46	5
Selenium	0.12	D1	0.0050		mg/L		04/22/20 06:44	04/30/20 22:26	10
Thallium	ND		0.00010		mg/L		04/22/20 06:44	04/23/20 22:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	190		6.0		mg/L			04/23/20 10:07	1
Bicarbonate Alkalinity as CaCO3	190		6.0		mg/L			04/23/20 10:07	1
Carbonate Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 10:07	1
Alkalinity, Phenolphthalein	ND		6.0		mg/L			04/23/20 10:07	1
Hydroxide Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 10:07	1
Total Dissolved Solids	11000	D2	100		mg/L			04/23/20 09:33	1
pH	7.5	H5	1.7		SU			04/24/20 15:00	1
Temperature	12.2	H5	0.1		Degrees C			04/24/20 15:00	1
Ammonia	ND		0.50		mg/L			04/22/20 19:43	1
Total Organic Carbon	3.2		0.50		mg/L			04/23/20 19:35	1
Total Organic Carbon - Duplicates	3.2		0.50		mg/L			04/23/20 19:35	1
Total Organic Carbon - Quad	3.2		0.50		mg/L			04/23/20 19:35	1

Client Sample ID: CH-CCR-M55-0420

Lab Sample ID: 550-141150-6

Date Collected: 04/17/20 15:56

Matrix: Water

Date Received: 04/21/20 14:51

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10		mg/L		04/22/20 13:34	04/27/20 22:45	1
Manganese	ND		0.010		mg/L		04/22/20 13:34	04/27/20 22:45	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0050	D1	0.0050		mg/L		04/22/20 06:33	04/30/20 21:34	10
Cobalt	ND	D1	0.0025		mg/L		04/22/20 06:33	05/01/20 20:05	5

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	3.4		0.50		mg/L			04/23/20 13:36	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-M55-0420

Lab Sample ID: 550-141150-6

Date Collected: 04/17/20 15:56

Matrix: Water

Date Received: 04/21/20 14:51

General Chemistry - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	3.4		0.50		mg/L			04/23/20 13:36	1
Dissolved Organic Carbon - Quad	3.4		0.50		mg/L			04/23/20 13:36	1

Client Sample ID: CH-CCR-M69-0420

Lab Sample ID: 550-141150-7

Date Collected: 04/19/20 13:12

Matrix: Water

Date Received: 04/21/20 14:51

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2500	D2	400		mg/L			04/23/20 02:58	200
Fluoride	1.5	D1	0.80		mg/L			04/23/20 02:40	2
Nitrate Nitrite as N	ND	D1 D5	0.50		mg/L			04/25/20 07:39	5
Sulfate	3000	D2	400		mg/L			04/23/20 02:58	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.00052	E4	0.0010	0.00050	mg/L		04/22/20 13:37	04/28/20 17:54	1
Boron	3.7	D1	0.25	0.015	mg/L		04/22/20 13:37	05/05/20 13:53	5
Calcium	630		2.0	0.015	mg/L		04/22/20 13:37	04/28/20 17:54	1
Iron	0.21		0.10	0.030	mg/L		04/22/20 13:37	04/28/20 17:54	1
Lithium	ND	D1 E8	1.0	0.20	mg/L		04/22/20 13:37	05/05/20 13:53	5
Magnesium	170		2.0	0.055	mg/L		04/22/20 13:37	04/28/20 17:54	1
Manganese	8.6	D1	0.050	0.015	mg/L		04/22/20 13:37	05/07/20 17:47	5
Potassium	10		0.50	0.15	mg/L		04/22/20 13:37	04/28/20 17:54	1
Sodium	1800	B3 D2	5.0	0.28	mg/L		04/22/20 13:37	04/30/20 19:46	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:30	5
Barium	0.027		0.00050		mg/L		04/22/20 06:44	04/23/20 22:59	1
Cadmium	0.00011		0.00010		mg/L		04/22/20 06:44	04/23/20 22:59	1
Chromium	ND	D1	0.0050		mg/L		04/22/20 06:44	05/04/20 17:30	5
Cobalt	0.027	D1	0.0050		mg/L		04/22/20 06:44	04/30/20 22:28	10
Lead	ND		0.00050		mg/L		04/22/20 06:44	04/23/20 22:59	1
Molybdenum	0.055	D1	0.0025		mg/L		05/04/20 05:28	05/04/20 18:53	5
Selenium	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:30	5
Thallium	ND		0.00010		mg/L		04/22/20 06:44	04/23/20 22:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	140		6.0		mg/L			04/23/20 10:15	1
Bicarbonate Alkalinity as CaCO3	140		6.0		mg/L			04/23/20 10:15	1
Carbonate Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 10:15	1
Alkalinity, Phenolphthalein	ND		6.0		mg/L			04/23/20 10:15	1
Hydroxide Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 10:15	1
Total Dissolved Solids	8000	D2	100		mg/L			04/24/20 09:09	1
pH	7.5	H5	1.7		SU			04/24/20 15:00	1
Temperature	13.8	H5	0.1		Degrees C			04/24/20 15:00	1
Ammonia	ND		0.50		mg/L			04/22/20 19:50	1
Total Organic Carbon	1.7		0.50		mg/L			04/27/20 20:00	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-M69-0420

Lab Sample ID: 550-141150-7

Date Collected: 04/19/20 13:12

Matrix: Water

Date Received: 04/21/20 14:51

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	1.7		0.50		mg/L			04/27/20 20:00	1
Total Organic Carbon - Quad	1.7		0.50		mg/L			04/27/20 20:00	1

Client Sample ID: CH-CCR-M69-0420

Lab Sample ID: 550-141150-8

Date Collected: 04/19/20 13:12

Matrix: Water

Date Received: 04/21/20 14:51

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10		mg/L		04/22/20 13:34	04/27/20 22:57	1
Manganese	8.2		0.010		mg/L		04/22/20 13:34	04/27/20 22:57	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0025		mg/L		04/22/20 06:33	05/01/20 20:07	5
Cobalt	0.026	D1	0.0050		mg/L		04/22/20 06:33	04/30/20 21:36	10

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.7		0.50		mg/L			04/23/20 13:50	1
Dissolved Organic Carbon - Duplicate	1.7		0.50		mg/L			04/23/20 13:50	1
Dissolved Organic Carbon - Quad	1.7		0.50		mg/L			04/23/20 13:50	1

Client Sample ID: CH-CCR-M70-0420

Lab Sample ID: 550-141150-9

Date Collected: 04/19/20 14:55

Matrix: Water

Date Received: 04/21/20 14:51

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2400	D2	400		mg/L			04/23/20 04:12	200
Fluoride	1.2	D1	0.80		mg/L			04/23/20 03:53	2
Nitrate Nitrite as N	ND	D1 D5	0.50		mg/L			04/25/20 08:34	5
Sulfate	2700	D2	400		mg/L			04/23/20 04:12	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.00050	mg/L		04/22/20 13:37	04/28/20 17:58	1
Boron	2.4	D1	0.25	0.015	mg/L		04/22/20 13:37	05/05/20 13:57	5
Calcium	640		2.0	0.015	mg/L		04/22/20 13:37	04/28/20 17:58	1
Iron	0.072	E4	0.10	0.030	mg/L		04/22/20 13:37	04/28/20 17:58	1
Lithium	ND	D1 E8	1.0	0.20	mg/L		04/22/20 13:37	05/05/20 13:57	5
Magnesium	160		2.0	0.055	mg/L		04/22/20 13:37	04/28/20 17:58	1
Manganese	1.8	D1	0.050	0.015	mg/L		04/22/20 13:37	05/07/20 17:51	5
Potassium	11		0.50	0.15	mg/L		04/22/20 13:37	04/28/20 17:58	1
Sodium	1500	B3 D2	5.0	0.28	mg/L		04/22/20 13:37	04/30/20 19:50	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:32	5
Barium	0.014		0.00050		mg/L		04/22/20 06:44	04/23/20 23:01	1
Cadmium	0.00053		0.00010		mg/L		04/22/20 06:44	04/23/20 23:01	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-M70-0420

Lab Sample ID: 550-141150-9

Date Collected: 04/19/20 14:55

Matrix: Water

Date Received: 04/21/20 14:51

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND	D1	0.0050		mg/L		04/22/20 06:44	05/04/20 17:32	5
Cobalt	0.025	D1	0.0050		mg/L		04/22/20 06:44	04/30/20 22:31	10
Lead	0.0023		0.00050		mg/L		04/22/20 06:44	04/23/20 23:01	1
Molybdenum	0.034	D1	0.0025		mg/L		05/04/20 05:28	05/04/20 18:55	5
Selenium	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:32	5
Thallium	ND		0.00010		mg/L		04/22/20 06:44	04/23/20 23:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	85		6.0		mg/L			04/23/20 10:24	1
Bicarbonate Alkalinity as CaCO3	85		6.0		mg/L			04/23/20 10:24	1
Carbonate Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 10:24	1
Alkalinity, Phenolphthalein	ND		6.0		mg/L			04/23/20 10:24	1
Hydroxide Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 10:24	1
Total Dissolved Solids	7400	D2	100		mg/L			04/24/20 09:09	1
pH	7.5	H5	1.7		SU			04/24/20 15:00	1
Temperature	13.9	H5	0.1		Degrees C			04/24/20 15:00	1
Ammonia	ND		0.50		mg/L			04/22/20 19:59	1
Total Organic Carbon	1.3		0.50		mg/L			04/23/20 20:00	1
Total Organic Carbon - Duplicates	1.3		0.50		mg/L			04/23/20 20:00	1
Total Organic Carbon - Quad	1.3		0.50		mg/L			04/23/20 20:00	1

Client Sample ID: CH-CCR-M70-0420

Lab Sample ID: 550-141150-10

Date Collected: 04/19/20 14:55

Matrix: Water

Date Received: 04/21/20 14:51

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10		mg/L		04/22/20 13:34	04/27/20 23:01	1
Manganese	1.8		0.010		mg/L		04/22/20 13:34	04/27/20 23:01	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0025		mg/L		04/22/20 06:33	05/01/20 20:09	5
Cobalt	0.024	D1	0.0050		mg/L		04/22/20 06:33	04/30/20 21:38	10

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.7		0.50		mg/L			04/27/20 18:07	1
Dissolved Organic Carbon - Duplicate	1.8		0.50		mg/L			04/27/20 18:07	1
Dissolved Organic Carbon - Quad	1.7		0.50		mg/L			04/27/20 18:07	1

Client Sample ID: CH-CCR-W301-0420

Lab Sample ID: 550-141150-11

Date Collected: 04/18/20 13:37

Matrix: Water

Date Received: 04/21/20 14:51

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6400	D2	400		mg/L			04/23/20 04:49	200
Fluoride	ND	D1 D5	0.80		mg/L			04/23/20 04:30	2

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W301-0420

Lab Sample ID: 550-141150-11

Date Collected: 04/18/20 13:37

Matrix: Water

Date Received: 04/21/20 14:51

Method: 300.0 - Anions, Ion Chromatography (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	17	D1	0.50		mg/L			04/25/20 09:02	5
Sulfate	3600	D2	400		mg/L			04/23/20 04:49	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.00063	E4	0.0010	0.00050	mg/L		04/22/20 13:37	04/28/20 18:10	1
Boron	0.70	D1	0.25	0.015	mg/L		04/22/20 13:37	05/05/20 14:01	5
Calcium	690		2.0	0.015	mg/L		04/22/20 13:37	04/28/20 18:10	1
Iron	ND	E8	0.10	0.030	mg/L		04/22/20 13:37	04/28/20 18:10	1
Lithium	0.41	D1 E4	1.0	0.20	mg/L		04/22/20 13:37	05/05/20 14:01	5
Magnesium	160		2.0	0.055	mg/L		04/22/20 13:37	04/28/20 18:10	1
Manganese	1.8	D1	0.050	0.015	mg/L		04/22/20 13:37	05/07/20 17:55	5
Potassium	9.6	D1	2.5	0.73	mg/L		04/22/20 13:37	05/07/20 17:55	5
Sodium	4100	B3 D2	5.0	0.28	mg/L		04/22/20 13:37	04/30/20 19:54	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:34	5
Barium	0.0082	D1	0.0050		mg/L		04/22/20 06:44	04/30/20 22:33	10
Cadmium	ND	D1	0.00050		mg/L		04/22/20 06:44	05/04/20 17:34	5
Chromium	ND	D1	0.0050		mg/L		04/22/20 06:44	05/04/20 17:34	5
Cobalt	0.021	D1	0.0050		mg/L		04/22/20 06:44	04/30/20 22:33	10
Lead	ND		0.00050		mg/L		04/22/20 06:44	04/23/20 23:03	1
Molybdenum	0.0051	D1	0.0025		mg/L		05/04/20 05:28	05/04/20 18:57	5
Selenium	0.0060	D1	0.0050		mg/L		04/22/20 06:44	04/30/20 22:33	10
Thallium	ND		0.00010		mg/L		04/22/20 06:44	04/23/20 23:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	150		6.0		mg/L			04/23/20 10:33	1
Bicarbonate Alkalinity as CaCO3	150		6.0		mg/L			04/23/20 10:33	1
Carbonate Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 10:33	1
Alkalinity, Phenolphthalein	ND		6.0		mg/L			04/23/20 10:33	1
Hydroxide Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 10:33	1
Total Dissolved Solids	14000	D2	200		mg/L			04/23/20 09:33	1
pH	7.4	H5	1.7		SU			04/24/20 15:00	1
Temperature	14.7	H5	0.1		Degrees C			04/24/20 15:00	1
Ammonia	ND		0.50		mg/L			04/22/20 20:06	1
Total Organic Carbon	2.9		0.50		mg/L			04/23/20 20:12	1
Total Organic Carbon - Duplicates	2.9		0.50		mg/L			04/23/20 20:12	1
Total Organic Carbon - Quad	2.9		0.50		mg/L			04/23/20 20:12	1

Client Sample ID: CH-CCR-W301-0420

Lab Sample ID: 550-141150-12

Date Collected: 04/18/20 13:37

Matrix: Water

Date Received: 04/21/20 14:51

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10		mg/L		04/22/20 13:34	04/27/20 23:05	1
Manganese	1.7		0.010		mg/L		04/22/20 13:34	04/27/20 23:05	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W301-0420

Lab Sample ID: 550-141150-12

Date Collected: 04/18/20 13:37

Matrix: Water

Date Received: 04/21/20 14:51

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0025		mg/L		04/22/20 06:33	05/01/20 20:11	5
Cobalt	0.022	D1	0.0050		mg/L		04/22/20 06:33	04/30/20 21:40	10

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	3.1		0.50		mg/L			04/23/20 14:24	1
Dissolved Organic Carbon - Duplicate	3.1		0.50		mg/L			04/23/20 14:24	1
Dissolved Organic Carbon - Quad	3.1		0.50		mg/L			04/23/20 14:24	1

Client Sample ID: CH-CCR-W302-0420

Lab Sample ID: 550-141150-13

Date Collected: 04/17/20 09:45

Matrix: Water

Date Received: 04/21/20 14:51

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3000	D2	400		mg/L			04/23/20 05:26	200
Fluoride	0.97	D1	0.80		mg/L			04/23/20 05:07	2
Nitrate Nitrite as N	ND	D1 D5	0.50		mg/L			04/25/20 09:29	5
Sulfate	2300	D2	400		mg/L			04/23/20 05:26	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.00050	mg/L		04/22/20 13:37	04/28/20 18:14	1
Boron	0.64	D1	0.25	0.015	mg/L		04/22/20 13:37	05/05/20 14:05	5
Calcium	590		2.0	0.015	mg/L		04/22/20 13:37	04/28/20 18:14	1
Iron	0.40		0.10	0.030	mg/L		04/22/20 13:37	04/28/20 18:14	1
Lithium	ND	D1 E8	1.0	0.20	mg/L		04/22/20 13:37	05/05/20 14:05	5
Magnesium	120		2.0	0.055	mg/L		04/22/20 13:37	04/28/20 18:14	1
Manganese	0.022	D1 E4	0.050	0.015	mg/L		04/22/20 13:37	05/07/20 18:07	5
Potassium	6.5	D1	2.5	0.73	mg/L		04/22/20 13:37	05/07/20 18:07	5
Sodium	1800	B3 D2	5.0	0.28	mg/L		04/22/20 13:37	04/30/20 20:06	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:36	5
Barium	0.013	D1	0.0050		mg/L		04/22/20 06:44	04/30/20 22:35	10
Cadmium	ND	D1	0.00050		mg/L		04/22/20 06:44	05/04/20 17:36	5
Chromium	0.086	D1	0.010		mg/L		04/22/20 06:44	04/30/20 22:35	10
Cobalt	0.0064	D1	0.0050		mg/L		04/22/20 06:44	04/30/20 22:35	10
Lead	ND		0.00050		mg/L		04/22/20 06:44	04/23/20 23:05	1
Molybdenum	0.012	D1	0.0025		mg/L		05/04/20 05:28	05/04/20 18:59	5
Selenium	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:36	5
Thallium	ND		0.00010		mg/L		04/22/20 06:44	04/23/20 23:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	130		6.0		mg/L			04/23/20 10:43	1
Bicarbonate Alkalinity as CaCO3	130		6.0		mg/L			04/23/20 10:43	1
Carbonate Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 10:43	1
Alkalinity, Phenolphthalein	ND		6.0		mg/L			04/23/20 10:43	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W302-0420

Lab Sample ID: 550-141150-13

Date Collected: 04/17/20 09:45

Matrix: Water

Date Received: 04/21/20 14:51

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hydroxide Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 10:43	1
Total Dissolved Solids	8100	D2	100		mg/L			04/23/20 09:33	1
pH	7.4	H5	1.7		SU			04/24/20 15:00	1
Temperature	15.7	H5	0.1		Degrees C			04/24/20 15:00	1
Ammonia	ND		0.50		mg/L			04/22/20 20:13	1
Total Organic Carbon	0.64		0.50		mg/L			04/27/20 20:13	1
Total Organic Carbon - Duplicates	0.62		0.50		mg/L			04/27/20 20:13	1
Total Organic Carbon - Quad	0.64		0.50		mg/L			04/27/20 20:13	1

Client Sample ID: CH-CCR-W302-0420

Lab Sample ID: 550-141150-14

Date Collected: 04/17/20 09:45

Matrix: Water

Date Received: 04/21/20 14:51

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.14		0.10		mg/L		04/22/20 13:34	04/27/20 23:09	1
Manganese	0.027		0.010		mg/L		04/22/20 13:34	04/27/20 23:09	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0025		mg/L		04/22/20 06:33	05/01/20 20:17	5
Cobalt	0.0064	D1	0.0050		mg/L		04/22/20 06:33	04/30/20 21:47	10

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.2		0.50		mg/L			04/23/20 14:38	1
Dissolved Organic Carbon - Duplicate	1.2		0.50		mg/L			04/23/20 14:38	1
Dissolved Organic Carbon - Quad	1.2		0.50		mg/L			04/23/20 14:38	1

Client Sample ID: CH-CCR-W303-0420

Lab Sample ID: 550-141150-15

Date Collected: 04/18/20 14:49

Matrix: Water

Date Received: 04/21/20 14:51

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2800	D2	400		mg/L			04/23/20 06:02	200
Fluoride	ND	D1 D5	0.80		mg/L			04/23/20 05:44	2
Nitrate Nitrite as N	ND	D1 D5	0.50		mg/L			04/25/20 10:24	5
Sulfate	3300	D2	400		mg/L			04/23/20 06:02	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.00059	E4	0.0010	0.00050	mg/L		04/22/20 13:37	04/28/20 18:18	1
Boron	3.7	D1	0.25	0.015	mg/L		04/22/20 13:37	05/05/20 14:09	5
Calcium	620		2.0	0.015	mg/L		04/22/20 13:37	04/28/20 18:18	1
Iron	ND	E8	0.10	0.030	mg/L		04/22/20 13:37	04/28/20 18:18	1
Lithium	ND	D1 E8	1.0	0.20	mg/L		04/22/20 13:37	05/05/20 14:09	5
Magnesium	190		2.0	0.055	mg/L		04/22/20 13:37	04/28/20 18:18	1
Manganese	0.036	D1 E4	0.050	0.015	mg/L		04/22/20 13:37	05/07/20 18:11	5
Potassium	6.8	D1	2.5	0.73	mg/L		04/22/20 13:37	05/07/20 18:11	5

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W303-0420

Lab Sample ID: 550-141150-15

Date Collected: 04/18/20 14:49

Matrix: Water

Date Received: 04/21/20 14:51

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	2100	B3 D2	5.0	0.28	mg/L		04/22/20 13:37	04/30/20 20:10	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:42	5
Barium	0.0048	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:42	5
Cadmium	ND	D1	0.00050		mg/L		04/22/20 06:44	05/04/20 17:42	5
Chromium	ND	D1	0.0050		mg/L		04/22/20 06:44	05/04/20 17:42	5
Cobalt	0.027	D1	0.0050		mg/L		04/22/20 06:44	04/30/20 22:41	10
Lead	ND		0.00050		mg/L		04/22/20 06:44	04/23/20 23:11	1
Molybdenum	0.024	D1	0.0025		mg/L		05/04/20 05:28	05/04/20 19:01	5
Selenium	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:42	5
Thallium	ND		0.00010		mg/L		04/22/20 06:44	04/23/20 23:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	150		6.0		mg/L			04/23/20 10:51	1
Bicarbonate Alkalinity as CaCO3	150		6.0		mg/L			04/23/20 10:51	1
Carbonate Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 10:51	1
Alkalinity, Phenolphthalein	ND		6.0		mg/L			04/23/20 10:51	1
Hydroxide Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 10:51	1
Total Dissolved Solids	8900	D2	100		mg/L			04/23/20 09:33	1
pH	7.5	H5	1.7		SU			04/24/20 15:00	1
Temperature	14.6	H5	0.1		Degrees C			04/24/20 15:00	1
Ammonia	ND		0.50		mg/L			04/22/20 20:20	1
Total Organic Carbon	1.4		0.50		mg/L			04/27/20 20:28	1
Total Organic Carbon - Duplicates	1.4		0.50		mg/L			04/27/20 20:28	1
Total Organic Carbon - Quad	1.4		0.50		mg/L			04/27/20 20:28	1

Client Sample ID: CH-CCR-W303-0420

Lab Sample ID: 550-141150-16

Date Collected: 04/18/20 14:49

Matrix: Water

Date Received: 04/21/20 14:51

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10		mg/L		04/22/20 13:34	04/27/20 23:13	1
Manganese	0.023		0.010		mg/L		04/22/20 13:34	04/27/20 23:13	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0025		mg/L		04/22/20 06:33	05/01/20 20:19	5
Cobalt	0.028	D1	0.0050		mg/L		04/22/20 06:33	04/30/20 21:49	10

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.4		0.50		mg/L			04/23/20 14:52	1
Dissolved Organic Carbon - Duplicate	1.4		0.50		mg/L			04/23/20 14:52	1
Dissolved Organic Carbon - Quad	1.4		0.50		mg/L			04/23/20 14:52	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W304-0420

Lab Sample ID: 550-141150-17

Date Collected: 04/17/20 11:16

Matrix: Water

Date Received: 04/21/20 14:51

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2700	D2	400		mg/L			04/23/20 06:39	200
Fluoride	ND	D1 D5	0.80		mg/L			04/23/20 06:21	2
Nitrate Nitrite as N	ND	D1 D5	0.50		mg/L			04/29/20 03:15	5
Sulfate	2600	D2	400		mg/L			04/23/20 06:39	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.00050	mg/L		04/22/20 13:37	04/28/20 18:22	1
Boron	0.52	D1	0.25	0.015	mg/L		04/22/20 13:37	05/05/20 14:21	5
Calcium	570		2.0	0.015	mg/L		04/22/20 13:37	04/28/20 18:22	1
Iron	0.11		0.10	0.030	mg/L		04/22/20 13:37	04/28/20 18:22	1
Lithium	0.46	D1 E4	1.0	0.20	mg/L		04/22/20 13:37	05/07/20 18:15	5
Magnesium	94		2.0	0.055	mg/L		04/22/20 13:37	04/28/20 18:22	1
Manganese	0.89	D1	0.050	0.015	mg/L		04/22/20 13:37	05/07/20 18:15	5
Potassium	5.0	D1	2.5	0.73	mg/L		04/22/20 13:37	05/05/20 14:21	5
Sodium	2100	B3 D2	5.0	0.28	mg/L		04/22/20 13:37	04/30/20 20:14	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:44	5
Barium	0.0069	D1	0.0050		mg/L		04/22/20 06:44	04/30/20 22:43	10
Cadmium	ND	D1	0.00050		mg/L		04/22/20 06:44	05/04/20 17:44	5
Chromium	ND	D1	0.0050		mg/L		04/22/20 06:44	05/04/20 17:44	5
Cobalt	0.0030	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:44	5
Lead	ND		0.00050		mg/L		04/22/20 06:44	04/23/20 23:13	1
Molybdenum	0.0046	D1	0.0025		mg/L		05/04/20 05:28	05/04/20 19:03	5
Selenium	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:44	5
Thallium	ND		0.00010		mg/L		04/22/20 06:44	04/23/20 23:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	140		6.0		mg/L			04/23/20 11:18	1
Bicarbonate Alkalinity as CaCO3	140		6.0		mg/L			04/23/20 11:18	1
Carbonate Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 11:18	1
Alkalinity, Phenolphthalein	ND		6.0		mg/L			04/23/20 11:18	1
Hydroxide Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 11:18	1
Total Dissolved Solids	8400	D2	100		mg/L			04/23/20 09:33	1
pH	7.4	H5	1.7		SU			04/24/20 15:00	1
Temperature	15.3	H5	0.1		Degrees C			04/24/20 15:00	1
Ammonia	ND		0.50		mg/L			04/22/20 20:27	1
Total Organic Carbon	0.70		0.50		mg/L			04/23/20 20:54	1
Total Organic Carbon - Duplicates	0.73		0.50		mg/L			04/23/20 20:54	1
Total Organic Carbon - Quad	0.70		0.50		mg/L			04/23/20 20:54	1

Client Sample ID: CH-CCR-W304-0420

Lab Sample ID: 550-141150-18

Date Collected: 04/17/20 11:16

Matrix: Water

Date Received: 04/21/20 14:51

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10		mg/L		04/22/20 13:34	04/27/20 23:17	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W304-0420

Lab Sample ID: 550-141150-18

Date Collected: 04/17/20 11:16

Matrix: Water

Date Received: 04/21/20 14:51

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	0.82		0.010		mg/L		04/22/20 13:34	04/27/20 23:17	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0029	D1	0.0025		mg/L		04/22/20 06:33	05/01/20 20:21	5
Cobalt	0.0032	D1	0.0025		mg/L		04/22/20 06:33	05/01/20 20:21	5

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	0.97		0.50		mg/L			04/23/20 15:05	1
Dissolved Organic Carbon - Duplicate	0.97		0.50		mg/L			04/23/20 15:05	1
Dissolved Organic Carbon - Quad	0.97		0.50		mg/L			04/23/20 15:05	1

Client Sample ID: CH-CCR-FD03-0420

Lab Sample ID: 550-141150-19

Date Collected: 04/19/20 10:04

Matrix: Water

Date Received: 04/21/20 14:51

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2300	D2	400		mg/L			04/23/20 07:53	200
Fluoride	2.1	D1	0.80		mg/L			04/23/20 07:34	2
Nitrate Nitrite as N	ND	D1 D5	0.50		mg/L			04/29/20 02:20	5
Sulfate	3000	D2	400		mg/L			04/23/20 07:53	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.00050	E4	0.0010	0.00050	mg/L		04/22/20 13:37	04/28/20 18:26	1
Boron	3.7	D1	0.25	0.015	mg/L		04/22/20 13:37	05/05/20 14:25	5
Calcium	620		2.0	0.015	mg/L		04/22/20 13:37	04/28/20 18:26	1
Iron	ND	E8	0.10	0.030	mg/L		04/22/20 13:37	04/28/20 18:26	1
Lithium	0.27	D1 E4	1.0	0.20	mg/L		04/22/20 13:37	05/07/20 18:19	5
Magnesium	210		2.0	0.055	mg/L		04/22/20 13:37	04/28/20 18:26	1
Manganese	5.0	D1	0.050	0.015	mg/L		04/22/20 13:37	05/07/20 18:19	5
Potassium	12	D1	2.5	0.73	mg/L		04/22/20 13:37	05/05/20 14:25	5
Sodium	1600	B3 D2	5.0	0.28	mg/L		04/22/20 13:37	04/30/20 20:18	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:46	5
Barium	0.0088	D1	0.0050		mg/L		04/22/20 06:44	04/30/20 22:45	10
Cadmium	0.0012	D1	0.0010		mg/L		04/22/20 06:44	04/30/20 22:45	10
Chromium	ND	D1	0.0050		mg/L		04/22/20 06:44	05/04/20 17:46	5
Cobalt	0.014	D1	0.0050		mg/L		04/22/20 06:44	04/30/20 22:45	10
Lead	ND		0.00050		mg/L		04/22/20 06:44	04/23/20 23:15	1
Molybdenum	0.039	D1	0.0025		mg/L		05/04/20 05:28	05/04/20 19:09	5
Selenium	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:46	5
Thallium	ND		0.00010		mg/L		04/22/20 06:44	04/23/20 23:15	1

Eurolins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-FD03-0420

Lab Sample ID: 550-141150-19

Date Collected: 04/19/20 10:04

Matrix: Water

Date Received: 04/21/20 14:51

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	96		6.0		mg/L			04/23/20 11:35	1
Bicarbonate Alkalinity as CaCO3	96		6.0		mg/L			04/23/20 11:35	1
Carbonate Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 11:35	1
Alkalinity, Phenolphthalein	ND		6.0		mg/L			04/23/20 11:35	1
Hydroxide Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 11:35	1
Total Dissolved Solids	7800	D2	100		mg/L			04/24/20 09:09	1
pH	7.4	H5	1.7		SU			04/24/20 15:00	1
Temperature	15.0	H5	0.1		Degrees C			04/24/20 15:00	1
Ammonia	ND		0.50		mg/L			04/22/20 20:37	1
Total Organic Carbon	1.2		0.50		mg/L			04/27/20 20:41	1
Total Organic Carbon - Duplicates	1.2		0.50		mg/L			04/27/20 20:41	1
Total Organic Carbon - Quad	1.2		0.50		mg/L			04/27/20 20:41	1

Client Sample ID: CH-CCR-FD03-0420

Lab Sample ID: 550-141150-20

Date Collected: 04/19/20 10:04

Matrix: Water

Date Received: 04/21/20 14:51

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10		mg/L		04/22/20 13:34	04/29/20 03:27	1
Manganese	5.0		0.010		mg/L		04/22/20 13:34	04/30/20 17:37	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0025		mg/L		04/22/20 06:33	05/01/20 20:23	5
Cobalt	0.014	D1	0.0050		mg/L		04/22/20 06:33	04/30/20 21:53	10

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.3		0.50		mg/L			04/27/20 18:22	1
Dissolved Organic Carbon - Duplicate	1.3		0.50		mg/L			04/27/20 18:22	1
Dissolved Organic Carbon - Quad	1.3		0.50		mg/L			04/27/20 18:22	1

Client Sample ID: CH-CCR-W305-0420

Lab Sample ID: 550-141150-21

Date Collected: 04/18/20 16:24

Matrix: Water

Date Received: 04/21/20 14:51

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2400	D2	400		mg/L			04/23/20 08:30	200
Fluoride	ND	D1 D5	0.80		mg/L			04/23/20 08:11	2
Nitrate Nitrite as N	ND	D1 D5	0.50		mg/L			04/29/20 01:53	5
Sulfate	2300	D2	400		mg/L			04/23/20 08:30	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.00050	mg/L		04/22/20 13:37	04/28/20 18:30	1
Boron	0.41	D1	0.25	0.015	mg/L		04/22/20 13:37	05/05/20 14:29	5
Calcium	680		2.0	0.015	mg/L		04/22/20 13:37	04/28/20 18:30	1
Iron	0.48		0.10	0.030	mg/L		04/22/20 13:37	04/28/20 18:30	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W305-0420

Lab Sample ID: 550-141150-21

Date Collected: 04/18/20 16:24

Matrix: Water

Date Received: 04/21/20 14:51

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.30	D1 E4	1.0	0.20	mg/L		04/22/20 13:37	05/07/20 18:23	5
Magnesium	110		2.0	0.055	mg/L		04/22/20 13:37	04/28/20 18:30	1
Manganese	8.1	D1	0.050	0.015	mg/L		04/22/20 13:37	05/07/20 18:23	5
Potassium	1.4	D1 E4	2.5	0.73	mg/L		04/22/20 13:37	05/05/20 14:29	5
Sodium	1600	B3 D2	5.0	0.28	mg/L		04/22/20 13:37	04/30/20 20:22	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:48	5
Barium	0.014	D1	0.0050		mg/L		04/22/20 06:44	04/30/20 22:47	10
Cadmium	ND	D1	0.00050		mg/L		04/22/20 06:44	05/04/20 17:48	5
Chromium	0.0069	D1	0.0050		mg/L		04/22/20 06:44	05/04/20 17:48	5
Cobalt	0.020	D1	0.0050		mg/L		04/22/20 06:44	04/30/20 22:47	10
Lead	0.0024		0.00050		mg/L		04/22/20 06:44	04/23/20 23:17	1
Molybdenum	0.021	D1	0.0025		mg/L		05/04/20 05:28	05/04/20 19:11	5
Selenium	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:48	5
Thallium	ND		0.00010		mg/L		04/22/20 06:44	04/23/20 23:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	100		6.0		mg/L			04/23/20 11:44	1
Bicarbonate Alkalinity as CaCO3	100		6.0		mg/L			04/23/20 11:44	1
Carbonate Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 11:44	1
Alkalinity, Phenolphthalein	ND		6.0		mg/L			04/23/20 11:44	1
Hydroxide Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 11:44	1
Total Dissolved Solids	7600	D2	100		mg/L			04/23/20 09:33	1
pH	7.4	H5	1.7		SU			04/24/20 15:00	1
Temperature	15.0	H5	0.1		Degrees C			04/24/20 15:00	1
Ammonia	ND		0.50		mg/L			04/22/20 21:04	1
Total Organic Carbon	1.8		0.50		mg/L			04/23/20 21:50	1
Total Organic Carbon - Duplicates	1.8		0.50		mg/L			04/23/20 21:50	1
Total Organic Carbon - Quad	1.8		0.50		mg/L			04/23/20 21:50	1

Client Sample ID: CH-CCR-W305-0420

Lab Sample ID: 550-141150-22

Date Collected: 04/18/20 16:24

Matrix: Water

Date Received: 04/21/20 14:51

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.28		0.10		mg/L		04/22/20 13:34	04/29/20 03:31	1
Manganese	7.3		0.010		mg/L		04/22/20 13:34	04/30/20 17:41	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0025		mg/L		04/22/20 06:33	05/01/20 20:25	5
Cobalt	0.020	D1	0.0050		mg/L		04/22/20 06:33	04/30/20 21:55	10

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.7		0.50		mg/L			04/23/20 16:06	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W305-0420

Lab Sample ID: 550-141150-22

Date Collected: 04/18/20 16:24

Matrix: Water

Date Received: 04/21/20 14:51

General Chemistry - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon - Duplicate	1.7		0.50		mg/L			04/23/20 16:06	1
Dissolved Organic Carbon - Quad	1.7		0.50		mg/L			04/23/20 16:06	1

Client Sample ID: CH-CCR-W306-0420

Lab Sample ID: 550-141150-23

Date Collected: 04/19/20 08:12

Matrix: Water

Date Received: 04/21/20 14:51

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2000	D2	400		mg/L			04/23/20 09:06	200
Fluoride	1.1	D1	0.80		mg/L			04/23/20 08:48	2
Nitrate Nitrite as N	ND	D1 D5	0.50		mg/L			04/29/20 01:25	5
Sulfate	13000	D2	400		mg/L			04/23/20 09:06	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.0017		0.0010	0.00050	mg/L		04/22/20 13:37	04/28/20 18:34	1
Boron	1.2	D1	0.25	0.015	mg/L		04/22/20 13:37	05/05/20 14:33	5
Calcium	400		2.0	0.015	mg/L		04/22/20 13:37	04/28/20 18:34	1
Iron	ND	E8	0.10	0.030	mg/L		04/22/20 13:37	04/28/20 18:34	1
Lithium	1.3	D1	1.0	0.20	mg/L		04/22/20 13:37	05/07/20 18:27	5
Magnesium	230		2.0	0.055	mg/L		04/22/20 13:37	04/28/20 18:34	1
Manganese	ND	D1 E8	0.050	0.015	mg/L		04/22/20 13:37	05/07/20 18:27	5
Potassium	3.6	D1	2.5	0.73	mg/L		04/22/20 13:37	05/05/20 14:33	5
Sodium	5700	B3 D2	5.0	0.28	mg/L		04/22/20 13:37	04/30/20 20:26	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0050	D1	0.0050		mg/L		04/22/20 06:44	04/30/20 22:49	10
Barium	0.012	D1	0.0050		mg/L		04/22/20 06:44	04/30/20 22:49	10
Cadmium	ND	D1	0.00050		mg/L		04/22/20 06:44	05/04/20 17:51	5
Chromium	ND	D1	0.0050		mg/L		04/22/20 06:44	05/04/20 17:51	5
Cobalt	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:51	5
Lead	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:51	5
Molybdenum	0.042	D1	0.0025		mg/L		05/04/20 05:28	05/04/20 19:13	5
Selenium	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:51	5
Thallium	ND	D1	0.00050		mg/L		04/22/20 06:44	05/04/20 17:51	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	130		6.0		mg/L			04/23/20 11:52	1
Bicarbonate Alkalinity as CaCO3	130		6.0		mg/L			04/23/20 11:52	1
Carbonate Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 11:52	1
Alkalinity, Phenolphthalein	ND		6.0		mg/L			04/23/20 11:52	1
Hydroxide Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 11:52	1
Total Dissolved Solids	19000	D2	200		mg/L			04/24/20 09:09	1
pH	7.8	H5	1.7		SU			04/24/20 15:00	1
Temperature	14.9	H5	0.1		Degrees C			04/24/20 15:00	1
Ammonia	ND		0.50		mg/L			04/22/20 21:11	1
Total Organic Carbon	2.4		0.50		mg/L			04/23/20 22:03	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W306-0420

Lab Sample ID: 550-141150-23

Date Collected: 04/19/20 08:12

Matrix: Water

Date Received: 04/21/20 14:51

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	2.4		0.50		mg/L			04/23/20 22:03	1
Total Organic Carbon - Quad	2.4		0.50		mg/L			04/23/20 22:03	1

Client Sample ID: CH-CCR-W306-0420

Lab Sample ID: 550-141150-24

Date Collected: 04/19/20 08:12

Matrix: Water

Date Received: 04/21/20 14:51

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10		mg/L		04/22/20 13:34	04/29/20 03:35	1
Manganese	ND		0.010		mg/L		04/22/20 13:34	04/30/20 17:45	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0055	D1	0.0050		mg/L		04/22/20 06:33	04/30/20 21:57	10
Cobalt	ND	D1	0.0025		mg/L		04/22/20 06:33	05/01/20 20:28	5

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	2.6		0.50		mg/L			04/23/20 16:19	1
Dissolved Organic Carbon - Duplicate	2.6		0.50		mg/L			04/23/20 16:19	1
Dissolved Organic Carbon - Quad	2.6		0.50		mg/L			04/23/20 16:19	1

Client Sample ID: CH-CCR-W307-0420

Lab Sample ID: 550-141150-25

Date Collected: 04/17/20 12:27

Matrix: Water

Date Received: 04/21/20 14:51

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2600	D2	400		mg/L			04/23/20 09:43	200
Fluoride	ND	D1 D5	0.80		mg/L			04/23/20 09:25	2
Nitrate Nitrite as N	ND	D1 D5	0.50		mg/L			04/29/20 00:31	5
Sulfate	2500	D2	400		mg/L			04/23/20 09:43	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.00050	mg/L		04/22/20 13:37	04/28/20 18:38	1
Boron	2.7	D1	0.25	0.015	mg/L		04/22/20 13:37	05/05/20 14:37	5
Calcium	710		2.0	0.015	mg/L		04/22/20 13:37	04/28/20 18:38	1
Iron	0.16		0.10	0.030	mg/L		04/22/20 13:37	04/28/20 18:38	1
Lithium	0.29	D1 E4	1.0	0.20	mg/L		04/22/20 13:37	05/07/20 18:31	5
Magnesium	130		2.0	0.055	mg/L		04/22/20 13:37	04/28/20 18:38	1
Manganese	0.030	D1 E4	0.050	0.015	mg/L		04/22/20 13:37	05/07/20 18:31	5
Potassium	4.2	D1	2.5	0.73	mg/L		04/22/20 13:37	05/05/20 14:37	5
Sodium	1600	B3 D2	5.0	0.28	mg/L		04/22/20 13:37	04/30/20 20:30	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:53	5
Barium	0.012	D1	0.0050		mg/L		04/22/20 06:44	04/30/20 22:51	10
Cadmium	ND	D1	0.00050		mg/L		04/22/20 06:44	05/04/20 17:53	5

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W307-0420

Lab Sample ID: 550-141150-25

Date Collected: 04/17/20 12:27

Matrix: Water

Date Received: 04/21/20 14:51

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	0.013	D1	0.010		mg/L		04/22/20 06:44	04/30/20 22:51	10
Cobalt	0.084	D1	0.0050		mg/L		04/22/20 06:44	04/30/20 22:51	10
Lead	0.0011		0.00050		mg/L		04/22/20 06:44	04/23/20 23:22	1
Molybdenum	0.011	D1	0.0025		mg/L		05/04/20 05:28	05/04/20 19:15	5
Selenium	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:53	5
Thallium	ND		0.00010		mg/L		04/22/20 06:44	04/23/20 23:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	110		6.0		mg/L			04/23/20 12:01	1
Bicarbonate Alkalinity as CaCO3	110		6.0		mg/L			04/23/20 12:01	1
Carbonate Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 12:01	1
Alkalinity, Phenolphthalein	ND		6.0		mg/L			04/23/20 12:01	1
Hydroxide Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 12:01	1
Total Dissolved Solids	8000	D2	100		mg/L			04/23/20 09:33	1
pH	7.3	H5	1.7		SU			04/24/20 15:00	1
Temperature	15.1	H5	0.1		Degrees C			04/24/20 15:00	1
Ammonia	ND		0.50		mg/L			04/22/20 21:18	1
Total Organic Carbon	1.3		0.50		mg/L			04/29/20 14:55	1
Total Organic Carbon - Duplicates	1.3		0.50		mg/L			04/29/20 14:55	1
Total Organic Carbon - Quad	1.3		0.50		mg/L			04/29/20 14:55	1

Client Sample ID: CH-CCR-W307-0420

Lab Sample ID: 550-141150-26

Date Collected: 04/17/20 12:27

Matrix: Water

Date Received: 04/21/20 14:51

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10		mg/L		04/22/20 13:34	04/29/20 03:39	1
Manganese	0.027		0.010		mg/L		04/22/20 13:34	04/30/20 17:49	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0025		mg/L		04/22/20 06:33	05/01/20 20:30	5
Cobalt	0.085	D1	0.0050		mg/L		04/22/20 06:33	04/30/20 21:59	10

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.6		0.50		mg/L			04/23/20 16:31	1
Dissolved Organic Carbon - Duplicate	1.6		0.50		mg/L			04/23/20 16:31	1
Dissolved Organic Carbon - Quad	1.6		0.50		mg/L			04/23/20 16:31	1

Client Sample ID: CH-CCR-W308-0420

Lab Sample ID: 550-141150-27

Date Collected: 04/17/20 14:18

Matrix: Water

Date Received: 04/21/20 14:51

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2900	D2	400		mg/L			04/23/20 10:20	200
Fluoride	ND	D1 D5	0.80		mg/L			04/23/20 10:02	2

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W308-0420

Lab Sample ID: 550-141150-27

Date Collected: 04/17/20 14:18

Matrix: Water

Date Received: 04/21/20 14:51

Method: 300.0 - Anions, Ion Chromatography (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	ND	D1 D5	0.50		mg/L			04/29/20 00:03	5
Sulfate	2500	D2	400		mg/L			04/23/20 10:20	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.00050	mg/L		04/22/20 13:37	04/28/20 18:42	1
Boron	0.50	D1	0.25	0.015	mg/L		04/22/20 13:37	05/05/20 14:41	5
Calcium	760		2.0	0.015	mg/L		04/22/20 13:37	04/28/20 18:42	1
Iron	0.031	E4	0.10	0.030	mg/L		04/22/20 13:37	04/28/20 18:42	1
Lithium	0.46	D1 E4	1.0	0.20	mg/L		04/22/20 13:37	05/07/20 18:35	5
Magnesium	120		2.0	0.055	mg/L		04/22/20 13:37	04/28/20 18:42	1
Manganese	0.072	D1	0.050	0.015	mg/L		04/22/20 13:37	05/07/20 18:35	5
Potassium	6.4	D1	2.5	0.73	mg/L		04/22/20 13:37	05/05/20 14:41	5
Sodium	2100	B3 D2	5.0	0.28	mg/L		04/22/20 13:37	04/30/20 20:34	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:55	5
Barium	0.0072	D1	0.0050		mg/L		04/22/20 06:44	04/30/20 22:53	10
Cadmium	ND	D1	0.00050		mg/L		04/22/20 06:44	05/04/20 17:55	5
Chromium	0.077	D1	0.010		mg/L		04/22/20 06:44	04/30/20 22:53	10
Cobalt	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:55	5
Lead	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:55	5
Molybdenum	0.0052	D1	0.0025		mg/L		05/04/20 05:28	05/04/20 19:17	5
Selenium	0.020	D1	0.0050		mg/L		04/22/20 06:44	04/30/20 22:53	10
Thallium	ND	D1	0.00050		mg/L		04/22/20 06:44	05/04/20 17:55	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	170		6.0		mg/L			04/23/20 12:10	1
Bicarbonate Alkalinity as CaCO3	170		6.0		mg/L			04/23/20 12:10	1
Carbonate Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 12:10	1
Alkalinity, Phenolphthalein	ND		6.0		mg/L			04/23/20 12:10	1
Hydroxide Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 12:10	1
Total Dissolved Solids	8600	D2	100		mg/L			04/23/20 09:33	1
pH	7.3	H5	1.7		SU			04/24/20 15:00	1
Temperature	16.1	H5	0.1		Degrees C			04/24/20 15:00	1
Ammonia	ND		0.50		mg/L			04/22/20 21:25	1
Total Organic Carbon	1.0		0.50		mg/L			04/23/20 22:30	1
Total Organic Carbon - Duplicates	1.1		0.50		mg/L			04/23/20 22:30	1
Total Organic Carbon - Quad	1.0		0.50		mg/L			04/23/20 22:30	1

Client Sample ID: CH-CCR-W308-0420

Lab Sample ID: 550-141150-28

Date Collected: 04/17/20 14:18

Matrix: Water

Date Received: 04/21/20 14:51

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10		mg/L		04/22/20 13:34	04/29/20 03:43	1
Manganese	0.073		0.010		mg/L		04/22/20 13:34	04/30/20 17:53	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W308-0420

Lab Sample ID: 550-141150-28

Date Collected: 04/17/20 14:18

Matrix: Water

Date Received: 04/21/20 14:51

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0025	D1	0.0025		mg/L		04/22/20 06:33	05/01/20 20:32	5
Cobalt	ND	D1	0.0025		mg/L		04/22/20 06:33	05/01/20 20:32	5

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.2		0.50		mg/L			04/23/20 16:44	1
Dissolved Organic Carbon - Duplicate	1.2		0.50		mg/L			04/23/20 16:44	1
Dissolved Organic Carbon - Quad	1.2		0.50		mg/L			04/23/20 16:44	1

Client Sample ID: CH-CCR-W314-0420

Lab Sample ID: 550-141150-29

Date Collected: 04/19/20 16:09

Matrix: Water

Date Received: 04/21/20 14:51

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2900	D2	400		mg/L			04/23/20 11:34	200
Fluoride	0.84	D1	0.80		mg/L			04/23/20 11:15	2
Nitrate Nitrite as N	ND	D1 D5	0.50		mg/L			04/28/20 23:36	5
Sulfate	2300	D2	400		mg/L			04/23/20 11:34	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.00050	mg/L		04/22/20 13:37	04/28/20 18:46	1
Boron	1.4	D1	0.25	0.015	mg/L		04/22/20 13:37	05/05/20 14:45	5
Calcium	790		2.0	0.015	mg/L		04/22/20 13:37	04/28/20 18:46	1
Iron	ND	E8	0.10	0.030	mg/L		04/22/20 13:37	04/28/20 18:46	1
Lithium	0.44	D1 E4	1.0	0.20	mg/L		04/22/20 13:37	05/07/20 18:39	5
Magnesium	170		2.0	0.055	mg/L		04/22/20 13:37	04/28/20 18:46	1
Manganese	0.063	D1	0.050	0.015	mg/L		04/22/20 13:37	05/07/20 18:39	5
Potassium	ND	D1 E8	2.5	0.73	mg/L		04/22/20 13:37	05/05/20 14:45	5
Sodium	1500	B3 D2	5.0	0.28	mg/L		04/22/20 13:37	04/30/20 20:38	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:57	5
Barium	0.011	D1	0.0050		mg/L		04/22/20 06:44	04/30/20 22:56	10
Cadmium	ND	D1	0.00050		mg/L		04/22/20 06:44	05/04/20 17:57	5
Chromium	0.010	D1	0.010		mg/L		04/22/20 06:44	04/30/20 22:56	10
Cobalt	0.022	D1	0.0050		mg/L		04/22/20 06:44	04/30/20 22:56	10
Lead	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:57	5
Molybdenum	0.010	D1	0.0025		mg/L		05/04/20 05:28	05/04/20 19:20	5
Selenium	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:57	5
Thallium	ND	D1	0.00050		mg/L		04/22/20 06:44	05/04/20 17:57	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	98		6.0		mg/L			04/23/20 12:18	1
Bicarbonate Alkalinity as CaCO3	98		6.0		mg/L			04/23/20 12:18	1
Carbonate Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 12:18	1
Alkalinity, Phenolphthalein	ND		6.0		mg/L			04/23/20 12:18	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W314-0420

Lab Sample ID: 550-141150-29

Date Collected: 04/19/20 16:09

Matrix: Water

Date Received: 04/21/20 14:51

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hydroxide Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 12:18	1
Total Dissolved Solids	7600	D2	100		mg/L			04/24/20 09:09	1
pH	7.5	H5	1.7		SU			04/27/20 13:46	1
Temperature	8.0	H5	0.1		Degrees C			04/27/20 13:46	1
Ammonia	ND		0.50		mg/L			04/22/20 21:32	1
Total Organic Carbon	0.97		0.50		mg/L			04/23/20 22:46	1
Total Organic Carbon - Duplicates	0.98		0.50		mg/L			04/23/20 22:46	1
Total Organic Carbon - Quad	0.97		0.50		mg/L			04/23/20 22:46	1

Client Sample ID: CH-CCR-W314-0420

Lab Sample ID: 550-141150-30

Date Collected: 04/19/20 16:09

Matrix: Water

Date Received: 04/21/20 14:51

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10		mg/L		04/22/20 13:34	04/29/20 03:47	1
Manganese	0.057		0.010		mg/L		04/22/20 13:34	04/30/20 18:05	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0025		mg/L		04/22/20 06:33	05/01/20 20:34	5
Cobalt	0.023	D1	0.0050		mg/L		04/22/20 06:33	04/30/20 22:03	10

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.0		0.50		mg/L			04/23/20 16:58	1
Dissolved Organic Carbon - Duplicate	1.1		0.50		mg/L			04/23/20 16:58	1
Dissolved Organic Carbon - Quad	1.0		0.50		mg/L			04/23/20 16:58	1

Client Sample ID: CH-CCR-W317-0420

Lab Sample ID: 550-141150-31

Date Collected: 04/16/20 16:48

Matrix: Water

Date Received: 04/21/20 14:51

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1500	D2	400		mg/L			04/23/20 12:10	200
Fluoride	ND	D1 D5	0.80		mg/L			04/23/20 11:52	2
Sulfate	730	D2	400		mg/L			04/23/20 12:10	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.00050	mg/L		04/22/20 13:34	04/29/20 03:59	1
Boron	0.21		0.050	0.0030	mg/L		04/22/20 13:34	04/30/20 18:17	1
Calcium	350		2.0	0.015	mg/L		04/22/20 13:34	04/29/20 03:59	1
Lithium	0.042	E4	0.20	0.040	mg/L		04/22/20 13:34	05/05/20 12:29	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0038	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:59	5
Barium	0.031	D1	0.0050		mg/L		04/22/20 06:44	04/30/20 22:58	10
Cadmium	ND	D1	0.00050		mg/L		04/22/20 06:44	05/04/20 17:59	5

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W317-0420

Lab Sample ID: 550-141150-31

Date Collected: 04/16/20 16:48

Matrix: Water

Date Received: 04/21/20 14:51

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND	D1	0.0050		mg/L		04/22/20 06:44	05/04/20 17:59	5
Cobalt	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:59	5
Lead	ND		0.00050		mg/L		04/22/20 06:44	04/23/20 23:28	1
Molybdenum	0.0037	D1	0.0025		mg/L		05/04/20 05:28	05/04/20 19:22	5
Selenium	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 17:59	5
Thallium	ND		0.00010		mg/L		04/22/20 06:44	04/23/20 23:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3700	D2	100		mg/L			04/23/20 09:33	1
pH	7.5	H5	1.7		SU			04/27/20 13:46	1
Temperature	8.4	H5	0.1		Degrees C			04/27/20 13:46	1

Client Sample ID: CH-CCR-FD04-0420

Lab Sample ID: 550-141150-32

Date Collected: 04/19/20 08:12

Matrix: Water

Date Received: 04/21/20 14:51

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1800	D2	400		mg/L			04/29/20 02:03	200
Fluoride	1.5	D1	0.80		mg/L			04/29/20 01:35	2
Nitrate Nitrite as N	ND	D1 D5	0.50		mg/L			04/30/20 21:14	5
Sulfate	12000	D2	400		mg/L			04/29/20 02:03	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.0017		0.0010	0.00050	mg/L		04/22/20 13:34	04/29/20 04:03	1
Boron	1.1		0.050	0.0030	mg/L		04/22/20 13:34	04/30/20 18:21	1
Calcium	400		2.0	0.015	mg/L		04/22/20 13:34	04/29/20 04:03	1
Iron	ND	E8	0.10	0.030	mg/L		04/22/20 13:34	04/29/20 04:03	1
Lithium	1.2		0.20	0.040	mg/L		04/22/20 13:34	05/05/20 12:33	1
Magnesium	230		2.0	0.055	mg/L		04/22/20 13:34	04/29/20 04:03	1
Manganese	ND	E8	0.010	0.0030	mg/L		04/22/20 13:34	04/30/20 18:21	1
Potassium	9.7		0.50	0.15	mg/L		04/22/20 13:34	04/30/20 18:21	1
Sodium	5500	D2	5.0	0.28	mg/L		04/22/20 13:34	04/30/20 16:59	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0048	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 18:01	5
Barium	0.011	D1	0.0050		mg/L		04/22/20 06:44	04/30/20 23:00	10
Cadmium	ND	D1	0.00050		mg/L		04/22/20 06:44	05/04/20 18:01	5
Chromium	ND	D1	0.0050		mg/L		04/22/20 06:44	05/04/20 18:01	5
Cobalt	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 18:01	5
Lead	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 18:01	5
Molybdenum	0.039	D1	0.0025		mg/L		05/04/20 05:28	05/04/20 19:24	5
Selenium	ND	D1	0.0025		mg/L		04/22/20 06:44	05/04/20 18:01	5
Thallium	ND	D1	0.00050		mg/L		04/22/20 06:44	05/04/20 18:01	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	130		6.0		mg/L			04/23/20 12:26	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-FD04-0420

Lab Sample ID: 550-141150-32

Date Collected: 04/19/20 08:12

Matrix: Water

Date Received: 04/21/20 14:51

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bicarbonate Alkalinity as CaCO3	130		6.0		mg/L			04/23/20 12:26	1
Carbonate Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 12:26	1
Alkalinity, Phenolphthalein	ND		6.0		mg/L			04/23/20 12:26	1
Hydroxide Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 12:26	1
Total Dissolved Solids	19000	D1 D2	200		mg/L			04/24/20 09:09	1
pH	7.9	H5	1.7		SU			04/27/20 13:46	1
Temperature	10.0	H5	0.1		Degrees C			04/27/20 13:46	1
Ammonia	ND		0.50		mg/L			04/22/20 21:38	1
Total Organic Carbon	2.5		0.50		mg/L			04/23/20 23:02	1
Total Organic Carbon - Duplicates	2.5		0.50		mg/L			04/23/20 23:02	1
Total Organic Carbon - Quad	2.5		0.50		mg/L			04/23/20 23:02	1

Client Sample ID: CH-CCR-FD04-0420

Lab Sample ID: 550-141150-33

Date Collected: 04/19/20 08:12

Matrix: Water

Date Received: 04/21/20 14:51

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10		mg/L		04/22/20 13:34	04/29/20 03:51	1
Manganese	ND		0.010		mg/L		04/22/20 13:34	04/30/20 18:09	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0051	D1	0.0050		mg/L		04/22/20 06:33	04/30/20 22:05	10
Cobalt	ND	D1	0.0025		mg/L		04/22/20 06:33	05/01/20 20:36	5

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	2.7		0.50		mg/L			04/23/20 17:13	1
Dissolved Organic Carbon - Duplicate	2.7		0.50		mg/L			04/23/20 17:13	1
Dissolved Organic Carbon - Quad	2.7		0.50		mg/L			04/23/20 17:13	1

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-208652/2

Matrix: Water

Analysis Batch: 208652

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0		mg/L			04/22/20 19:00	1
Fluoride	ND		0.40		mg/L			04/22/20 19:00	1
Sulfate	ND		2.0		mg/L			04/22/20 19:00	1

Lab Sample ID: LCS 550-208652/5

Matrix: Water

Analysis Batch: 208652

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	21.2		mg/L		106	90 - 110
Fluoride	4.00	4.17		mg/L		104	90 - 110
Sulfate	20.0	20.4		mg/L		102	90 - 110

Lab Sample ID: LCSD 550-208652/6

Matrix: Water

Analysis Batch: 208652

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	21.2		mg/L		106	90 - 110	0	20
Fluoride	4.00	4.17		mg/L		104	90 - 110	0	20
Sulfate	20.0	20.4		mg/L		102	90 - 110	0	20

Lab Sample ID: 550-141150-1 MS

Matrix: Water

Analysis Batch: 208652

Client Sample ID: CH-CCR-M52-0420

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.88	D1	8.00	8.19	D1	mg/L		91	80 - 120

Lab Sample ID: 550-141150-1 MS

Matrix: Water

Analysis Batch: 208652

Client Sample ID: CH-CCR-M52-0420

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	4300	D2	4000	8540	D2	mg/L		106	80 - 120
Sulfate	3400	D2	4000	7560	D2	mg/L		104	80 - 120

Lab Sample ID: 550-141150-1 MSD

Matrix: Water

Analysis Batch: 208652

Client Sample ID: CH-CCR-M52-0420

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.88	D1	8.00	8.41	D1	mg/L		94	80 - 120	3	20

Lab Sample ID: 550-141150-1 MSD

Matrix: Water

Analysis Batch: 208652

Client Sample ID: CH-CCR-M52-0420

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	4300	D2	4000	8470	D2	mg/L		104	80 - 120	1	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-141150-1 MSD

Matrix: Water

Analysis Batch: 208652

Client Sample ID: CH-CCR-M52-0420

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	3400	D2	4000	7510	D2	mg/L		103	80 - 120	1	20

Lab Sample ID: MB 550-208874/2

Matrix: Water

Analysis Batch: 208874

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	ND		0.10		mg/L			04/24/20 16:32	1

Lab Sample ID: LCS 550-208874/7

Matrix: Water

Analysis Batch: 208874

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	8.00	8.36		mg/L		105	90 - 110

Lab Sample ID: LCSD 550-208874/8

Matrix: Water

Analysis Batch: 208874

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate Nitrite as N	8.00	8.35		mg/L		104	90 - 110	0	20

Lab Sample ID: 550-141150-1 MS

Matrix: Water

Analysis Batch: 208874

Client Sample ID: CH-CCR-M52-0420

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	ND	D1 D5	40.0	38.0	D1	mg/L		95	80 - 120

Lab Sample ID: 550-141150-1 MSD

Matrix: Water

Analysis Batch: 208874

Client Sample ID: CH-CCR-M52-0420

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate Nitrite as N	ND	D1 D5	40.0	38.5	D1	mg/L		96	80 - 120	1	20

Lab Sample ID: 550-141309-B-1 MS

Matrix: Water

Analysis Batch: 208874

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	0.85		8.00	9.39		mg/L		107	80 - 120

Lab Sample ID: 550-141309-B-1 MSD

Matrix: Water

Analysis Batch: 208874

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate Nitrite as N	0.85		8.00	9.34		mg/L		106	80 - 120	1	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 550-209010/2

Matrix: Water

Analysis Batch: 209010

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0		mg/L			04/28/20 12:21	1
Fluoride	ND		0.40		mg/L			04/28/20 12:21	1
Sulfate	ND		2.0		mg/L			04/28/20 12:21	1

Lab Sample ID: LCS 550-209010/5

Matrix: Water

Analysis Batch: 209010

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	21.1		mg/L		105	90 - 110
Fluoride	4.00	4.16		mg/L		104	90 - 110
Sulfate	20.0	20.6		mg/L		103	90 - 110

Lab Sample ID: LCSD 550-209010/6

Matrix: Water

Analysis Batch: 209010

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	21.0		mg/L		105	90 - 110	0	20
Fluoride	4.00	4.13		mg/L		103	90 - 110	1	20
Sulfate	20.0	20.6		mg/L		103	90 - 110	0	20

Lab Sample ID: 550-141388-A-1 MS

Matrix: Water

Analysis Batch: 209010

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	16	M1	20.0	43.9	M1	mg/L		138	80 - 120
Fluoride	ND	M1 R13	4.00	5.30	M1 R13	mg/L		130	80 - 120
Sulfate	3.2	M1	20.0	29.2	M1	mg/L		130	80 - 120

Lab Sample ID: 550-141388-A-1 MSD

Matrix: Water

Analysis Batch: 209010

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	16	M1	20.0	38.7		mg/L		112	80 - 120	13	20
Fluoride	ND	M1 R13	4.00	4.27	R13	mg/L		105	80 - 120	21	20
Sulfate	3.2	M1	20.0	23.9		mg/L		104	80 - 120	20	20

Lab Sample ID: MB 550-209011/2

Matrix: Water

Analysis Batch: 209011

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	ND		0.10		mg/L			04/28/20 12:21	1

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 550-209011/5

Matrix: Water

Analysis Batch: 209011

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	8.00	8.44		mg/L		106	90 - 110

Lab Sample ID: LCSD 550-209011/6

Matrix: Water

Analysis Batch: 209011

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate Nitrite as N	8.00	8.45		mg/L		106	90 - 110	0	20

Lab Sample ID: 550-141420-A-4 MS

Matrix: Water

Analysis Batch: 209011

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	14		8.00	21.5		mg/L		94	80 - 120

Lab Sample ID: 550-141420-A-4 MSD

Matrix: Water

Analysis Batch: 209011

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate Nitrite as N	14		8.00	21.7		mg/L		96	80 - 120	1	20

Lab Sample ID: MB 550-209282/2

Matrix: Water

Analysis Batch: 209282

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	ND		0.10		mg/L			04/30/20 15:29	1

Lab Sample ID: LCS 550-209282/5

Matrix: Water

Analysis Batch: 209282

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	8.00	8.54		mg/L		107	90 - 110

Lab Sample ID: LCSD 550-209282/6

Matrix: Water

Analysis Batch: 209282

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate Nitrite as N	8.00	8.55		mg/L		107	90 - 110	0	20

Lab Sample ID: 550-141235-B-3 MS ^5

Matrix: Water

Analysis Batch: 209282

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	1.4	D1	40.0	42.5	D1	mg/L		103	80 - 120

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: 550-141235-B-3 MSD ^5

Matrix: Water

Analysis Batch: 209282

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate Nitrite as N	1.4	D1	40.0	42.3	D1	mg/L		102	80 - 120	0	20

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 550-208528/1-A

Matrix: Water

Analysis Batch: 208945

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 208528

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10		mg/L		04/22/20 13:34	04/27/20 22:25	1
Manganese	ND		0.010		mg/L		04/22/20 13:34	04/27/20 22:25	1

Lab Sample ID: MB 550-208528/1-A

Matrix: Water

Analysis Batch: 209335

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 208528

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND	E8	0.050	0.0030	mg/L		04/22/20 13:34	04/30/20 16:35	1
Potassium	ND	E8	0.50	0.15	mg/L		04/22/20 13:34	04/30/20 16:35	1
Sodium	0.141	E4	0.50	0.028	mg/L		04/22/20 13:34	04/30/20 16:35	1
Manganese	ND	E8	0.010	0.0030	mg/L		04/22/20 13:34	04/30/20 16:35	1

Lab Sample ID: MB 550-208528/1-A

Matrix: Water

Analysis Batch: 209509

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 208528

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	ND		2.0		mg/L		04/22/20 13:34	05/04/20 15:12	1
Potassium	ND		0.50		mg/L		04/22/20 13:34	05/04/20 15:12	1

Lab Sample ID: MB 550-208528/1-A

Matrix: Water

Analysis Batch: 209650

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 208528

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.00050	mg/L		04/22/20 13:34	05/05/20 11:56	1
Calcium	0.0153	E4	2.0	0.015	mg/L		04/22/20 13:34	05/05/20 11:56	1
Lithium	ND	E8	0.20	0.040	mg/L		04/22/20 13:34	05/05/20 11:56	1

Lab Sample ID: LCS 550-208528/2-A

Matrix: Water

Analysis Batch: 208945

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 208528

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	1.00	0.981		mg/L		98	85 - 115
Manganese	1.00	0.988		mg/L		99	85 - 115

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCS 550-208528/2-A

Matrix: Water

Analysis Batch: 209335

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 208528

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	0.995		mg/L		99	85 - 115
Potassium	20.0	18.7		mg/L		93	85 - 115
Sodium	20.0	19.2		mg/L		96	85 - 115
Manganese	1.00	1.01		mg/L		101	85 - 115

Lab Sample ID: LCS 550-208528/2-A

Matrix: Water

Analysis Batch: 209509

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 208528

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Magnesium	21.0	20.8		mg/L		99	85 - 115
Potassium	20.0	19.5		mg/L		97	85 - 115

Lab Sample ID: LCS 550-208528/2-A

Matrix: Water

Analysis Batch: 209650

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 208528

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	1.00	0.998		mg/L		100	85 - 115
Calcium	21.0	20.5		mg/L		97	85 - 115
Lithium	1.00	0.909		mg/L		91	85 - 115

Lab Sample ID: LCSD 550-208528/3-A

Matrix: Water

Analysis Batch: 208945

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 208528

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	1.00	0.971		mg/L		97	85 - 115	1	20
Manganese	1.00	0.980		mg/L		98	85 - 115	1	20

Lab Sample ID: LCSD 550-208528/3-A

Matrix: Water

Analysis Batch: 209335

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 208528

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	1.00	1.00		mg/L		100	85 - 115	0	20
Potassium	20.0	18.8		mg/L		94	85 - 115	1	20
Sodium	20.0	19.4		mg/L		97	85 - 115	1	20
Manganese	1.00	1.01		mg/L		101	85 - 115	0	20

Lab Sample ID: LCSD 550-208528/3-A

Matrix: Water

Analysis Batch: 209509

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 208528

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Magnesium	21.0	20.7		mg/L		99	85 - 115	0	20
Potassium	20.0	19.5		mg/L		97	85 - 115	0	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCSD 550-208528/3-A
Matrix: Water
Analysis Batch: 209650

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 208528

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Beryllium	1.00	1.07		mg/L		107	85 - 115	7	20
Calcium	21.0	22.1		mg/L		105	85 - 115	7	20
Lithium	1.00	0.996		mg/L		100	85 - 115	9	20

Lab Sample ID: MB 550-208529/1-A
Matrix: Water
Analysis Batch: 209071

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 208529

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.00050	mg/L		04/22/20 13:37	04/28/20 17:02	1
Calcium	ND	E8	2.0	0.015	mg/L		04/22/20 13:37	04/28/20 17:02	1
Magnesium	ND	E8	2.0	0.055	mg/L		04/22/20 13:37	04/28/20 17:02	1
Potassium	ND	E8	0.50	0.15	mg/L		04/22/20 13:37	04/28/20 17:02	1
Sodium	ND	E8	0.50	0.028	mg/L		04/22/20 13:37	04/28/20 17:02	1
Iron	ND	E8	0.10	0.030	mg/L		04/22/20 13:37	04/28/20 17:02	1

Lab Sample ID: MB 550-208529/1-A
Matrix: Water
Analysis Batch: 209651

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 208529

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND	E8	0.050	0.0030	mg/L		04/22/20 13:37	05/05/20 12:45	1
Lithium	ND	E8	0.20	0.040	mg/L		04/22/20 13:37	05/05/20 12:45	1

Lab Sample ID: MB 550-208529/1-A
Matrix: Water
Analysis Batch: 209859

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 208529

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND	E8	0.20	0.040	mg/L		04/22/20 13:37	05/07/20 17:11	1
Potassium	ND	E8	0.50	0.15	mg/L		04/22/20 13:37	05/07/20 17:11	1
Manganese	ND	E8	0.010	0.0030	mg/L		04/22/20 13:37	05/07/20 17:11	1

Lab Sample ID: LCS 550-208529/2-A
Matrix: Water
Analysis Batch: 209071

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 208529

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	1.00	1.04		mg/L		104	85 - 115
Calcium	21.0	21.2		mg/L		101	85 - 115
Magnesium	21.0	20.7		mg/L		99	85 - 115
Potassium	20.0	19.1		mg/L		96	85 - 115
Sodium	20.0	19.3		mg/L		97	85 - 115
Iron	1.00	1.00		mg/L		100	85 - 115

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCS 550-208529/2-A
Matrix: Water
Analysis Batch: 209651

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 208529
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Boron	1.00	1.08		mg/L		108	85 - 115
Lithium	1.00	0.926		mg/L		93	85 - 115

Lab Sample ID: LCS 550-208529/2-A
Matrix: Water
Analysis Batch: 209859

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 208529
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Lithium	1.00	1.08		mg/L		108	85 - 115
Potassium	20.0	21.9		mg/L		109	85 - 115
Manganese	1.00	1.06		mg/L		106	85 - 115

Lab Sample ID: LCSD 550-208529/3-A
Matrix: Water
Analysis Batch: 209071

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 208529
%Rec.

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Beryllium	1.00	1.04		mg/L		104	85 - 115	0	20
Calcium	21.0	21.1		mg/L		101	85 - 115	0	20
Magnesium	21.0	20.6		mg/L		98	85 - 115	1	20
Potassium	20.0	19.1		mg/L		95	85 - 115	0	20
Sodium	20.0	19.3		mg/L		97	85 - 115	0	20
Iron	1.00	1.00		mg/L		100	85 - 115	0	20

Lab Sample ID: LCSD 550-208529/3-A
Matrix: Water
Analysis Batch: 209651

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 208529
%Rec.

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Boron	1.00	1.07		mg/L		107	85 - 115	1	20
Lithium	1.00	0.969		mg/L		97	85 - 115	5	20

Lab Sample ID: LCSD 550-208529/3-A
Matrix: Water
Analysis Batch: 209859

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 208529
%Rec.

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Lithium	1.00	1.05		mg/L		105	85 - 115	3	20
Potassium	20.0	21.3		mg/L		107	85 - 115	3	20
Manganese	1.00	1.08		mg/L		108	85 - 115	2	20

Lab Sample ID: 550-141149-B-3-B MS
Matrix: Water
Analysis Batch: 209071

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 208529
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Beryllium	ND	E8	1.00	1.02		mg/L		102	70 - 130
Calcium	280	M3	21.0	284	M3	mg/L		-3	70 - 130
Magnesium	110	M3	21.0	121	M3	mg/L		58	70 - 130
Potassium	7.8		20.0	28.1		mg/L		102	70 - 130

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 550-141149-B-3-B MS

Matrix: Water

Analysis Batch: 209071

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 208529

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.43		1.00	1.37		mg/L		94	70 - 130

Lab Sample ID: 550-141149-B-3-B MS ^10

Matrix: Water

Analysis Batch: 209337

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 208529

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sodium	980	D2 B3 M3	20.0	925	M3	mg/L		-271	70 - 130

Lab Sample ID: 550-141149-B-3-B MS ^5

Matrix: Water

Analysis Batch: 209651

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 208529

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	0.23	E4 D1	1.00	1.30	D1	mg/L		107	70 - 130
Lithium	ND	E8 D1	1.00	0.735	D1 E4	mg/L		73	70 - 130

Lab Sample ID: 550-141149-B-3-B MS ^5

Matrix: Water

Analysis Batch: 209859

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 208529

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	ND	E8 D1	1.00	1.05		mg/L		105	70 - 130
Potassium	7.5	D1	20.0	27.0		mg/L		97	70 - 130
Manganese	2.3	D1	1.00	3.13		mg/L		81	70 - 130

Lab Sample ID: 550-141149-B-3-C MSD

Matrix: Water

Analysis Batch: 209071

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 208529

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Beryllium	ND	E8	1.00	1.02		mg/L		102	70 - 130	1	20
Calcium	280	M3	21.0	294	M3	mg/L		45	70 - 130	3	20
Magnesium	110	M3	21.0	125	M3	mg/L		77	70 - 130	3	20
Potassium	7.8		20.0	28.7		mg/L		105	70 - 130	2	20
Iron	0.43		1.00	1.39		mg/L		96	70 - 130	2	20

Lab Sample ID: 550-141149-B-3-C MSD ^10

Matrix: Water

Analysis Batch: 209337

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 208529

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sodium	980	D2 B3 M3	20.0	1020	M3	mg/L		203	70 - 130	10	20

Lab Sample ID: 550-141149-B-3-C MSD ^5

Matrix: Water

Analysis Batch: 209651

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 208529

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	0.23	E4 D1	1.00	1.32	D1	mg/L		110	70 - 130	2	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 550-141149-B-3-C MSD ^5

Matrix: Water

Analysis Batch: 209651

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 208529

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	ND	E8 D1	1.00	0.766	D1 E4	mg/L		77	70 - 130	4	20

Lab Sample ID: 550-141149-B-3-C MSD ^5

Matrix: Water

Analysis Batch: 209859

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 208529

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	ND	E8 D1	1.00	1.09		mg/L		109	70 - 130	4	20
Potassium	7.5	D1	20.0	28.3		mg/L		104	70 - 130	5	20
Manganese	2.3	D1	1.00	3.31		mg/L		99	70 - 130	6	20

Lab Sample ID: 550-141150-6 MS

Matrix: Water

Analysis Batch: 208945

Client Sample ID: CH-CCR-M55-0420

Prep Type: Dissolved

Prep Batch: 208528

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Iron	ND		1.00	0.974		mg/L		97	70 - 130		
Manganese	ND		1.00	0.981		mg/L		98	70 - 130		

Lab Sample ID: 550-141150-6 MS

Matrix: Water

Analysis Batch: 209335

Client Sample ID: CH-CCR-M55-0420

Prep Type: Dissolved

Prep Batch: 208528

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sodium	3100	M3 D2	20.0	2800	M3	mg/L		-1615	70 - 130		

Lab Sample ID: 550-141150-6 MS

Matrix: Water

Analysis Batch: 209335

Client Sample ID: CH-CCR-M55-0420

Prep Type: Dissolved

Prep Batch: 208528

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Boron	0.42		1.00	1.50		mg/L		108	70 - 130		
Potassium	4.9		20.0	25.0		mg/L		100	70 - 130		
Manganese	ND		1.00	1.00		mg/L		100	70 - 130		

Lab Sample ID: 550-141150-6 MS

Matrix: Water

Analysis Batch: 209509

Client Sample ID: CH-CCR-M55-0420

Prep Type: Dissolved

Prep Batch: 208528

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Magnesium	160	M3	21.0	169	M3	mg/L		23	70 - 130		
Potassium	5.6		20.0	27.1		mg/L		108	70 - 130		

Lab Sample ID: 550-141150-6 MS

Matrix: Water

Analysis Batch: 209650

Client Sample ID: CH-CCR-M55-0420

Prep Type: Dissolved

Prep Batch: 208528

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Beryllium	ND		1.00	1.03		mg/L		103	70 - 130		
Boron	0.47		1.00	1.52		mg/L		105	70 - 130		

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 550-141150-6 MS

Matrix: Water

Analysis Batch: 209650

Client Sample ID: CH-CCR-M55-0420

Prep Type: Dissolved

Prep Batch: 208528

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	740	M3	21.0	693	M3	mg/L		-240	70 - 130
Lithium	0.55		1.00	1.64		mg/L		109	70 - 130

Lab Sample ID: 550-141150-6 MSD

Matrix: Water

Analysis Batch: 208945

Client Sample ID: CH-CCR-M55-0420

Prep Type: Dissolved

Prep Batch: 208528

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Iron	ND		1.00	0.965		mg/L		97	70 - 130	1	20
Manganese	ND		1.00	0.990		mg/L		99	70 - 130	1	20

Lab Sample ID: 550-141150-6 MSD

Matrix: Water

Analysis Batch: 209335

Client Sample ID: CH-CCR-M55-0420

Prep Type: Dissolved

Prep Batch: 208528

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Sodium	3100	M3 D2	20.0	2910	M3	mg/L		-1061	70 - 130	4	20

Lab Sample ID: 550-141150-6 MSD

Matrix: Water

Analysis Batch: 209335

Client Sample ID: CH-CCR-M55-0420

Prep Type: Dissolved

Prep Batch: 208528

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Boron	0.42		1.00	1.49		mg/L		107	70 - 130	1	20
Potassium	4.9		20.0	25.9		mg/L		105	70 - 130	4	20
Manganese	ND		1.00	0.998		mg/L		100	70 - 130	1	20

Lab Sample ID: 550-141150-6 MSD

Matrix: Water

Analysis Batch: 209509

Client Sample ID: CH-CCR-M55-0420

Prep Type: Dissolved

Prep Batch: 208528

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Magnesium	160	M3	21.0	168	M3	mg/L		18	70 - 130	1	20
Potassium	5.6		20.0	27.9		mg/L		111	70 - 130	3	20

Lab Sample ID: 550-141150-6 MSD

Matrix: Water

Analysis Batch: 209650

Client Sample ID: CH-CCR-M55-0420

Prep Type: Dissolved

Prep Batch: 208528

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Beryllium	ND		1.00	1.07		mg/L		107	70 - 130	3	20
Boron	0.47		1.00	1.55		mg/L		108	70 - 130	2	20
Calcium	740	M3	21.0	713	M3	mg/L		-145	70 - 130	3	20
Lithium	0.55		1.00	1.69		mg/L		114	70 - 130	3	20

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Method: 200.8 LL - Metals (ICP/MS)

Lab Sample ID: MB 550-208471/1-A

Matrix: Water

Analysis Batch: 209392

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 208471

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.00050		mg/L		04/22/20 06:33	04/30/20 21:20	1
Cobalt	ND		0.00050		mg/L		04/22/20 06:33	04/30/20 21:20	1

Lab Sample ID: LCS 550-208471/2-A

Matrix: Water

Analysis Batch: 209392

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 208471

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.101		mg/L		101	85 - 115
Cobalt	0.100	0.105		mg/L		105	85 - 115

Lab Sample ID: LCSD 550-208471/3-A

Matrix: Water

Analysis Batch: 209392

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 208471

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.100	0.103		mg/L		103	85 - 115	2	20
Cobalt	0.100	0.105		mg/L		105	85 - 115	0	20

Lab Sample ID: MB 550-208488/1-A

Matrix: Water

Analysis Batch: 208774

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 208488

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.00050		mg/L		04/22/20 06:44	04/23/20 22:42	1
Barium	ND		0.00050		mg/L		04/22/20 06:44	04/23/20 22:42	1
Cadmium	ND		0.00010		mg/L		04/22/20 06:44	04/23/20 22:42	1
Chromium	ND		0.0010		mg/L		04/22/20 06:44	04/23/20 22:42	1
Cobalt	ND		0.00050		mg/L		04/22/20 06:44	04/23/20 22:42	1
Lead	ND		0.00050		mg/L		04/22/20 06:44	04/23/20 22:42	1
Thallium	ND		0.00010		mg/L		04/22/20 06:44	04/23/20 22:42	1

Lab Sample ID: MB 550-208488/1-A

Matrix: Water

Analysis Batch: 209393

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 208488

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.00050		mg/L		04/22/20 06:44	04/30/20 22:12	1
Barium	ND		0.00050		mg/L		04/22/20 06:44	04/30/20 22:12	1
Cadmium	ND		0.00010		mg/L		04/22/20 06:44	04/30/20 22:12	1
Chromium	ND		0.0010		mg/L		04/22/20 06:44	04/30/20 22:12	1
Cobalt	ND		0.00050		mg/L		04/22/20 06:44	04/30/20 22:12	1
Lead	ND		0.00050		mg/L		04/22/20 06:44	04/30/20 22:12	1
Selenium	ND		0.00050		mg/L		04/22/20 06:44	04/30/20 22:12	1
Thallium	ND		0.00010		mg/L		04/22/20 06:44	04/30/20 22:12	1

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 550-208488/2-A

Matrix: Water

Analysis Batch: 208774

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 208488

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.0928		mg/L		93	85 - 115
Barium	0.100	0.106		mg/L		106	85 - 115
Cadmium	0.100	0.0942		mg/L		94	85 - 115
Chromium	0.100	0.0880		mg/L		88	85 - 115
Cobalt	0.100	0.0888		mg/L		89	85 - 115
Lead	0.100	0.0970		mg/L		97	85 - 115
Thallium	0.100	0.0986		mg/L		99	85 - 115

Lab Sample ID: LCS 550-208488/2-A

Matrix: Water

Analysis Batch: 209393

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 208488

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.0958		mg/L		96	85 - 115
Barium	0.100	0.107		mg/L		107	85 - 115
Cadmium	0.100	0.0986		mg/L		99	85 - 115
Chromium	0.100	0.102		mg/L		102	85 - 115
Cobalt	0.100	0.0988		mg/L		99	85 - 115
Lead	0.100	0.0980		mg/L		98	85 - 115
Selenium	0.100	0.0959		mg/L		96	85 - 115
Thallium	0.100	0.0968		mg/L		97	85 - 115

Lab Sample ID: LCSD 550-208488/3-A

Matrix: Water

Analysis Batch: 208774

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 208488

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.100	0.0992		mg/L		99	85 - 115	7	20
Barium	0.100	0.111		mg/L		111	85 - 115	5	20
Cadmium	0.100	0.100		mg/L		100	85 - 115	6	20
Chromium	0.100	0.0970		mg/L		97	85 - 115	10	20
Cobalt	0.100	0.0977		mg/L		98	85 - 115	9	20
Lead	0.100	0.101		mg/L		101	85 - 115	4	20
Thallium	0.100	0.103		mg/L		103	85 - 115	4	20

Lab Sample ID: LCSD 550-208488/3-A

Matrix: Water

Analysis Batch: 209393

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 208488

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.100	0.104		mg/L		104	85 - 115	8	20
Barium	0.100	0.114		mg/L		114	85 - 115	6	20
Cadmium	0.100	0.102		mg/L		102	85 - 115	3	20
Chromium	0.100	0.108		mg/L		108	85 - 115	5	20
Cobalt	0.100	0.106		mg/L		106	85 - 115	7	20
Lead	0.100	0.102		mg/L		102	85 - 115	4	20
Selenium	0.100	0.105		mg/L		105	85 - 115	9	20
Thallium	0.100	0.100		mg/L		100	85 - 115	3	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: 550-141150-1 MS

Matrix: Water

Analysis Batch: 208774

Client Sample ID: CH-CCR-M52-0420

Prep Type: Total/NA

Prep Batch: 208488

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	ND		0.100	0.0963		mg/L		96	70 - 130
Thallium	0.00010		0.100	0.0984		mg/L		98	70 - 130

Lab Sample ID: 550-141150-1 MS

Matrix: Water

Analysis Batch: 209393

Client Sample ID: CH-CCR-M52-0420

Prep Type: Total/NA

Prep Batch: 208488

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	0.014	D1	0.100	0.126		mg/L		112	70 - 130
Chromium	0.018	D1	0.100	0.125		mg/L		106	70 - 130
Cobalt	0.039	D1	0.100	0.142		mg/L		103	70 - 130
Selenium	ND	D1	0.100	0.112		mg/L		108	70 - 130

Lab Sample ID: 550-141150-1 MS

Matrix: Water

Analysis Batch: 209501

Client Sample ID: CH-CCR-M52-0420

Prep Type: Total/NA

Prep Batch: 208488

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	ND	D1	0.100	0.103		mg/L		103	70 - 130
Cadmium	ND	D1	0.100	0.0950		mg/L		95	70 - 130
Molybdenum	0.024	B1 D1	0.100	0.129		mg/L		105	70 - 130

Lab Sample ID: 550-141150-1 MSD

Matrix: Water

Analysis Batch: 208774

Client Sample ID: CH-CCR-M52-0420

Prep Type: Total/NA

Prep Batch: 208488

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Lead	ND		0.100	0.0952		mg/L		95	70 - 130	1	20
Thallium	0.00010		0.100	0.0960		mg/L		96	70 - 130	3	20

Lab Sample ID: 550-141150-1 MSD

Matrix: Water

Analysis Batch: 209393

Client Sample ID: CH-CCR-M52-0420

Prep Type: Total/NA

Prep Batch: 208488

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Barium	0.014	D1	0.100	0.126		mg/L		112	70 - 130	0	20
Chromium	0.018	D1	0.100	0.123		mg/L		104	70 - 130	2	20
Cobalt	0.039	D1	0.100	0.140		mg/L		101	70 - 130	2	20
Selenium	ND	D1	0.100	0.106		mg/L		102	70 - 130	6	20

Lab Sample ID: 550-141150-1 MSD

Matrix: Water

Analysis Batch: 209501

Client Sample ID: CH-CCR-M52-0420

Prep Type: Total/NA

Prep Batch: 208488

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Arsenic	ND	D1	0.100	0.0995		mg/L		100	70 - 130	3	20
Cadmium	ND	D1	0.100	0.0939		mg/L		93	70 - 130	1	20
Molybdenum	0.024	B1 D1	0.100	0.125		mg/L		101	70 - 130	3	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 550-209433/1-A

Matrix: Water

Analysis Batch: 209504

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 209433

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Molybdenum	ND		0.00050		mg/L		05/04/20 05:28	05/04/20 18:36	1

Lab Sample ID: LCS 550-209433/2-A

Matrix: Water

Analysis Batch: 209504

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 209433

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Molybdenum	0.100	0.0947		mg/L		95	85 - 115

Lab Sample ID: LCSD 550-209433/3-A

Matrix: Water

Analysis Batch: 209504

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 209433

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Molybdenum	0.100	0.0941		mg/L		94	85 - 115	1	20

Lab Sample ID: 550-141150-5 MS

Matrix: Water

Analysis Batch: 209504

Client Sample ID: CH-CCR-M55-0420

Prep Type: Total/NA

Prep Batch: 209433

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Molybdenum	0.0048	D1	0.100	0.104		mg/L		99	70 - 130

Lab Sample ID: 550-141150-5 MSD

Matrix: Water

Analysis Batch: 209504

Client Sample ID: CH-CCR-M55-0420

Prep Type: Total/NA

Prep Batch: 209433

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Molybdenum	0.0048	D1	0.100	0.108		mg/L		103	70 - 130	4	20

Lab Sample ID: 550-141150-2 MS

Matrix: Water

Analysis Batch: 209392

Client Sample ID: CH-CCR-M52-0420

Prep Type: Dissolved

Prep Batch: 208471

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cobalt	0.039	D1	0.100	0.147		mg/L		108	70 - 130

Lab Sample ID: 550-141150-2 MS

Matrix: Water

Analysis Batch: 209486

Client Sample ID: CH-CCR-M52-0420

Prep Type: Dissolved

Prep Batch: 208471

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	ND	D1	0.100	0.118		mg/L		118	70 - 130

Lab Sample ID: 550-141150-2 MSD

Matrix: Water

Analysis Batch: 209392

Client Sample ID: CH-CCR-M52-0420

Prep Type: Dissolved

Prep Batch: 208471

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Cobalt	0.039	D1	0.100	0.144		mg/L		106	70 - 130	3	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Method: 200.8 LL - Metals (ICP/MS)

Lab Sample ID: 550-141150-2 MSD
Matrix: Water
Analysis Batch: 209486

Client Sample ID: CH-CCR-M52-0420
Prep Type: Dissolved
Prep Batch: 208471

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND	D1	0.100	0.114		mg/L		114	70 - 130	3	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 550-208656/6
Matrix: Water
Analysis Batch: 208656

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 09:13	1
Bicarbonate Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 09:13	1
Carbonate Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 09:13	1
Alkalinity, Phenolphthalein	ND		6.0		mg/L			04/23/20 09:13	1
Hydroxide Alkalinity as CaCO3	ND		6.0		mg/L			04/23/20 09:13	1

Lab Sample ID: LCS 550-208656/5
Matrix: Water
Analysis Batch: 208656

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity as CaCO3	250	234		mg/L		94	90 - 110

Lab Sample ID: LCSD 550-208656/19
Matrix: Water
Analysis Batch: 208656

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity as CaCO3	250	234		mg/L		93	90 - 110	0	20

Lab Sample ID: 550-141140-F-1 DU
Matrix: Water
Analysis Batch: 208656

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity as CaCO3	140		137		mg/L		2	20
Bicarbonate Alkalinity as CaCO3	140		137		mg/L		2	20
Carbonate Alkalinity as CaCO3	ND		ND		mg/L		NC	20
Alkalinity, Phenolphthalein	ND		ND		mg/L		NC	20
Hydroxide Alkalinity as CaCO3	ND		ND		mg/L		NC	20

Lab Sample ID: 550-141150-1 DU
Matrix: Water
Analysis Batch: 208656

Client Sample ID: CH-CCR-M52-0420
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity as CaCO3	210	R8	281	R8	mg/L		28	20
Bicarbonate Alkalinity as CaCO3	210	R8	281	R8	mg/L		28	20
Carbonate Alkalinity as CaCO3	ND		ND		mg/L		NC	20
Alkalinity, Phenolphthalein	ND		ND		mg/L		NC	20
Hydroxide Alkalinity as CaCO3	ND		ND		mg/L		NC	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Method: SM 2320B - Alkalinity

Lab Sample ID: 550-141150-17 DU

Matrix: Water

Analysis Batch: 208656

Client Sample ID: CH-CCR-W304-0420

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Alkalinity as CaCO3	140		138		mg/L		0.2	20
Bicarbonate Alkalinity as CaCO3	140		138		mg/L		0.2	20
Carbonate Alkalinity as CaCO3	ND		ND		mg/L		NC	20
Alkalinity, Phenolphthalein	ND		ND		mg/L		NC	20
Hydroxide Alkalinity as CaCO3	ND		ND		mg/L		NC	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 550-208634/1

Matrix: Water

Analysis Batch: 208634

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		20		mg/L			04/23/20 09:33	1

Lab Sample ID: LCS 550-208634/2

Matrix: Water

Analysis Batch: 208634

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	976		mg/L		98	90 - 110

Lab Sample ID: LCSD 550-208634/3

Matrix: Water

Analysis Batch: 208634

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Total Dissolved Solids	1000	952		mg/L		95	90 - 110	2	10

Lab Sample ID: 550-141150-1 DU

Matrix: Water

Analysis Batch: 208634

Client Sample ID: CH-CCR-M52-0420

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Total Dissolved Solids	11000	D2	10600	D2	mg/L		0.2	10

Lab Sample ID: MB 550-208747/1

Matrix: Water

Analysis Batch: 208747

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		20		mg/L			04/24/20 09:09	1

Lab Sample ID: LCS 550-208747/2

Matrix: Water

Analysis Batch: 208747

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	956		mg/L		96	90 - 110

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCSD 550-208747/3

Matrix: Water

Analysis Batch: 208747

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	1000	960		mg/L		96	90 - 110	0	10

Lab Sample ID: 550-141150-3 DU

Matrix: Water

Analysis Batch: 208747

Client Sample ID: CH-CCR-M53-0420

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	8200	D2	7970	D2	mg/L				2	10

Method: SM 4500 H+ B - pH

Lab Sample ID: LCSSRM 550-208783/1

Matrix: Water

Analysis Batch: 208783

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
pH	7.00	7.0		SU		100.3	98.5 - 101.5		

Lab Sample ID: LCSSRM 550-208783/13

Matrix: Water

Analysis Batch: 208783

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
pH	7.00	7.0		SU		100.1	98.5 - 101.5		

Lab Sample ID: LCSSRM 550-208783/25

Matrix: Water

Analysis Batch: 208783

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
pH	7.00	6.9		SU		99.0	98.5 - 101.5		

Lab Sample ID: 550-140991-A-5 DU

Matrix: Water

Analysis Batch: 208783

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
pH	8.1	H5	8.1	H5	SU				0	5
Temperature	12.5	H5	12.2	H5	Degrees C				2	

Lab Sample ID: 550-141150-9 DU

Matrix: Water

Analysis Batch: 208783

Client Sample ID: CH-CCR-M70-0420

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
pH	7.5	H5	7.5	H5	SU				0	5
Temperature	13.9	H5	13.2	H5	Degrees C				5	

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Method: SM 4500 H+ B - pH (Continued)

Lab Sample ID: LCSSRM 550-208901/1
Matrix: Water
Analysis Batch: 208901

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100.0	98.5 - 101.5

Lab Sample ID: LCSSRM 550-208901/13
Matrix: Water
Analysis Batch: 208901

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100.1	98.5 - 101.5

Lab Sample ID: 550-141150-29 DU
Matrix: Water
Analysis Batch: 208901

Client Sample ID: CH-CCR-W314-0420
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.5	H5	7.5	H5	SU		0.1	5
Temperature	8.0	H5	8.6	H5	Degrees C		7	

Method: SM 4500 NH3 D - Ammonia

Lab Sample ID: MB 550-208605/28
Matrix: Water
Analysis Batch: 208605

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.50		mg/L			04/22/20 18:46	1

Lab Sample ID: LCS 550-208605/29
Matrix: Water
Analysis Batch: 208605

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	25.0	24.5		mg/L		98	80 - 120

Lab Sample ID: LCSD 550-208605/30
Matrix: Water
Analysis Batch: 208605

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	25.0	23.8		mg/L		95	80 - 120	3	20

Lab Sample ID: 550-141150-1 MS
Matrix: Water
Analysis Batch: 208605

Client Sample ID: CH-CCR-M52-0420
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	ND		25.0	22.3		mg/L		89	80 - 120

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Method: SM 4500 NH3 D - Ammonia (Continued)

Lab Sample ID: 550-141150-1 MSD

Matrix: Water

Analysis Batch: 208605

Client Sample ID: CH-CCR-M52-0420

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	ND		25.0	22.0		mg/L		88	80 - 120	1	20

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 550-208813/31

Matrix: Water

Analysis Batch: 208813

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50		mg/L			04/23/20 17:56	1
Total Organic Carbon - Duplicates	ND		0.50		mg/L			04/23/20 17:56	1
Total Organic Carbon - Quad	ND		0.50		mg/L			04/23/20 17:56	1

Lab Sample ID: LCS 550-208813/32

Matrix: Water

Analysis Batch: 208813

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	20.0	20.9		mg/L		104	90 - 110
Total Organic Carbon - Duplicates	20.0	20.9		mg/L		104	90 - 110
Total Organic Carbon - Quad	20.0	20.9		mg/L		104	90 - 110

Lab Sample ID: LCSD 550-208813/33

Matrix: Water

Analysis Batch: 208813

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	20.0	20.8		mg/L		104	90 - 110	0	20
Total Organic Carbon - Duplicates	20.0	20.8		mg/L		104	90 - 110	0	20
Total Organic Carbon - Quad	20.0	20.8		mg/L		104	90 - 110	0	20

Lab Sample ID: 550-141150-1 MS

Matrix: Water

Analysis Batch: 208813

Client Sample ID: CH-CCR-M52-0420

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	1.5		20.0	20.5		mg/L		95	90 - 110
Total Organic Carbon - Duplicates	1.5		20.0	20.5		mg/L		95	90 - 110
Total Organic Carbon - Quad	1.5		20.0	20.5		mg/L		95	90 - 110

Lab Sample ID: 550-141150-1 MSD

Matrix: Water

Analysis Batch: 208813

Client Sample ID: CH-CCR-M52-0420

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	1.5		20.0	20.4		mg/L		95	90 - 110	0	20
Total Organic Carbon - Duplicates	1.5		20.0	20.4		mg/L		95	90 - 110	0	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Method: SM 5310B - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: 550-141150-1 MSD

Matrix: Water

Analysis Batch: 208813

Client Sample ID: CH-CCR-M52-0420

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Quad	1.5		20.0	20.4		mg/L		95	90 - 110	0	20

Lab Sample ID: MB 550-208964/16

Matrix: Water

Analysis Batch: 208964

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50		mg/L			04/27/20 19:04	1
Total Organic Carbon - Duplicates	ND		0.50		mg/L			04/27/20 19:04	1
Total Organic Carbon - Quad	ND		0.50		mg/L			04/27/20 19:04	1

Lab Sample ID: LCS 550-208964/17

Matrix: Water

Analysis Batch: 208964

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	20.0	20.5		mg/L		102	90 - 110
Total Organic Carbon - Duplicates	20.0	20.5		mg/L		102	90 - 110
Total Organic Carbon - Quad	20.0	20.5		mg/L		102	90 - 110

Lab Sample ID: LCSD 550-208964/18

Matrix: Water

Analysis Batch: 208964

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	20.0	20.1		mg/L		101	90 - 110	2	20
Total Organic Carbon - Duplicates	20.0	20.1		mg/L		101	90 - 110	2	20
Total Organic Carbon - Quad	20.0	20.1		mg/L		101	90 - 110	2	20

Lab Sample ID: 550-141210-A-1 MS ^10

Matrix: Water

Analysis Batch: 208964

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	45	D1	200	252	D1	mg/L		102	90 - 110
Total Organic Carbon - Duplicates	45	D1	200	252	D1	mg/L		102	90 - 110
Total Organic Carbon - Quad	45	D1	200	252	D1	mg/L		102	90 - 110

Lab Sample ID: 550-141210-A-1 MSD ^10

Matrix: Water

Analysis Batch: 208964

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	45	D1	200	251	D1	mg/L		103	90 - 110	0	20
Total Organic Carbon - Duplicates	45	D1	200	251	D1	mg/L		103	90 - 110	0	20
Total Organic Carbon - Quad	45	D1	200	251	D1	mg/L		103	90 - 110	0	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Method: SM 5310B - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: MB 550-209233/5

Matrix: Water

Analysis Batch: 209233

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50		mg/L			04/29/20 14:15	1
Total Organic Carbon - Duplicates	ND		0.50		mg/L			04/29/20 14:15	1
Total Organic Carbon - Quad	ND		0.50		mg/L			04/29/20 14:15	1

Lab Sample ID: LCS 550-209233/6

Matrix: Water

Analysis Batch: 209233

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	20.0	20.4		mg/L		102	90 - 110
Total Organic Carbon - Duplicates	20.0	20.4		mg/L		102	90 - 110
Total Organic Carbon - Quad	20.0	20.4		mg/L		102	90 - 110

Lab Sample ID: LCSD 550-209233/7

Matrix: Water

Analysis Batch: 209233

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	20.0	20.1		mg/L		100	90 - 110	2	20
Total Organic Carbon - Duplicates	20.0	20.1		mg/L		100	90 - 110	2	20
Total Organic Carbon - Quad	20.0	20.1		mg/L		100	90 - 110	2	20

Lab Sample ID: 550-141365-A-1 MS ^10

Matrix: Water

Analysis Batch: 209233

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	45	M2 D1	200	43.6	D1 M2	mg/L		-0.5	90 - 110
Total Organic Carbon - Duplicates	45	M2 D1	200	43.6	D1 M2	mg/L		-0.5	90 - 110
Total Organic Carbon - Quad	45	M2 D1	200	43.6	D1 M2	mg/L		-0.5	90 - 110

Lab Sample ID: 550-141365-A-1 MSD ^10

Matrix: Water

Analysis Batch: 209233

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	45	M2 D1	200	41.1	D1 M2	mg/L		-2	90 - 110	6	20
Total Organic Carbon - Duplicates	45	M2 D1	200	41.1	D1 M2	mg/L		-2	90 - 110	6	20
Total Organic Carbon - Quad	45	M2 D1	200	41.1	D1 M2	mg/L		-2	90 - 110	6	20

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Method: SM 5310B - Organic Carbon, Dissolved (DOC)

Lab Sample ID: MB 550-208629/1-A

Matrix: Water

Analysis Batch: 208812

Client Sample ID: Method Blank

Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	ND		0.50		mg/L			04/23/20 12:24	1
Dissolved Organic Carbon - Duplicate	ND		0.50		mg/L			04/23/20 12:24	1
Dissolved Organic Carbon - Quad	ND		0.50		mg/L			04/23/20 12:24	1

Lab Sample ID: LCS 550-208812/6

Matrix: Water

Analysis Batch: 208812

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	20.0	20.7		mg/L		104	90 - 110
Dissolved Organic Carbon - Duplicate	20.0	20.7		mg/L		104	90 - 110
Dissolved Organic Carbon - Quad	20.0	20.7		mg/L		104	90 - 110

Lab Sample ID: LCSD 550-208812/7

Matrix: Water

Analysis Batch: 208812

Client Sample ID: Lab Control Sample Dup

Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	20.0	20.4		mg/L		102	90 - 110	2	20
Dissolved Organic Carbon - Duplicate	20.0	20.4		mg/L		102	90 - 110	2	20
Dissolved Organic Carbon - Quad	20.0	20.4		mg/L		102	90 - 110	2	20

Lab Sample ID: 550-141150-2 MS

Matrix: Water

Analysis Batch: 208812

Client Sample ID: CH-CCR-M52-0420

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	1.4	M2	40.0	21.0	M2	mg/L		49	90 - 110
Dissolved Organic Carbon - Duplicate	1.4	M2	40.0	21.0	M2	mg/L		49	90 - 110
Dissolved Organic Carbon - Quad	1.4	M2	40.0	21.0	M2	mg/L		49	90 - 110

Lab Sample ID: 550-141150-2 MSD

Matrix: Water

Analysis Batch: 208812

Client Sample ID: CH-CCR-M52-0420

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	1.4	M2	40.0	21.2	M2	mg/L		49	90 - 110	1	20
Dissolved Organic Carbon - Duplicate	1.4	M2	40.0	21.2	M2	mg/L		50	90 - 110	1	20
Dissolved Organic Carbon - Quad	1.4	M2	40.0	21.2	M2	mg/L		49	90 - 110	1	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Method: SM 5310B - Organic Carbon, Dissolved (DOC) (Continued)

Lab Sample ID: MB 550-208900/1-A

Matrix: Water

Analysis Batch: 208963

Client Sample ID: Method Blank

Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	ND		0.50		mg/L			04/27/20 17:16	1
Dissolved Organic Carbon - Duplicate	ND		0.50		mg/L			04/27/20 17:16	1
Dissolved Organic Carbon - Quad	ND		0.50		mg/L			04/27/20 17:16	1

Lab Sample ID: LCS 550-208963/6

Matrix: Water

Analysis Batch: 208963

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	20.0	20.2		mg/L		101	90 - 110
Dissolved Organic Carbon - Duplicate	20.0	20.2		mg/L		101	90 - 110
Dissolved Organic Carbon - Quad	20.0	20.2		mg/L		101	90 - 110

Lab Sample ID: LCSD 550-208963/7

Matrix: Water

Analysis Batch: 208963

Client Sample ID: Lab Control Sample Dup

Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	20.0	20.0		mg/L		100	90 - 110	1	20
Dissolved Organic Carbon - Duplicate	20.0	20.0		mg/L		100	90 - 110	1	20
Dissolved Organic Carbon - Quad	20.0	20.0		mg/L		100	90 - 110	1	20

Lab Sample ID: 550-141150-4 MS

Matrix: Water

Analysis Batch: 208963

Client Sample ID: CH-CCR-M53-0420

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	1.2		20.0	22.1		mg/L		104	90 - 110
Dissolved Organic Carbon - Duplicate	1.2		20.0	22.1		mg/L		104	90 - 110
Dissolved Organic Carbon - Quad	1.2		20.0	22.1		mg/L		104	90 - 110

Lab Sample ID: 550-141150-4 MSD

Matrix: Water

Analysis Batch: 208963

Client Sample ID: CH-CCR-M53-0420

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	1.2		20.0	21.4		mg/L		101	90 - 110	3	20
Dissolved Organic Carbon - Duplicate	1.2		20.0	21.4		mg/L		101	90 - 110	3	20
Dissolved Organic Carbon - Quad	1.2		20.0	21.4		mg/L		101	90 - 110	3	20

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

HPLC/IC

Analysis Batch: 208652

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-1	CH-CCR-M52-0420	Total/NA	Water	300.0	
550-141150-1	CH-CCR-M52-0420	Total/NA	Water	300.0	
550-141150-3	CH-CCR-M53-0420	Total/NA	Water	300.0	
550-141150-3	CH-CCR-M53-0420	Total/NA	Water	300.0	
550-141150-5	CH-CCR-M55-0420	Total/NA	Water	300.0	
550-141150-5	CH-CCR-M55-0420	Total/NA	Water	300.0	
550-141150-7	CH-CCR-M69-0420	Total/NA	Water	300.0	
550-141150-7	CH-CCR-M69-0420	Total/NA	Water	300.0	
550-141150-9	CH-CCR-M70-0420	Total/NA	Water	300.0	
550-141150-9	CH-CCR-M70-0420	Total/NA	Water	300.0	
550-141150-11	CH-CCR-W301-0420	Total/NA	Water	300.0	
550-141150-11	CH-CCR-W301-0420	Total/NA	Water	300.0	
550-141150-13	CH-CCR-W302-0420	Total/NA	Water	300.0	
550-141150-13	CH-CCR-W302-0420	Total/NA	Water	300.0	
550-141150-15	CH-CCR-W303-0420	Total/NA	Water	300.0	
550-141150-15	CH-CCR-W303-0420	Total/NA	Water	300.0	
550-141150-17	CH-CCR-W304-0420	Total/NA	Water	300.0	
550-141150-17	CH-CCR-W304-0420	Total/NA	Water	300.0	
550-141150-19	CH-CCR-FD03-0420	Total/NA	Water	300.0	
550-141150-19	CH-CCR-FD03-0420	Total/NA	Water	300.0	
550-141150-21	CH-CCR-W305-0420	Total/NA	Water	300.0	
550-141150-21	CH-CCR-W305-0420	Total/NA	Water	300.0	
550-141150-23	CH-CCR-W306-0420	Total/NA	Water	300.0	
550-141150-23	CH-CCR-W306-0420	Total/NA	Water	300.0	
550-141150-25	CH-CCR-W307-0420	Total/NA	Water	300.0	
550-141150-25	CH-CCR-W307-0420	Total/NA	Water	300.0	
550-141150-27	CH-CCR-W308-0420	Total/NA	Water	300.0	
550-141150-27	CH-CCR-W308-0420	Total/NA	Water	300.0	
550-141150-29	CH-CCR-W314-0420	Total/NA	Water	300.0	
550-141150-29	CH-CCR-W314-0420	Total/NA	Water	300.0	
550-141150-31	CH-CCR-W317-0420	Total/NA	Water	300.0	
550-141150-31	CH-CCR-W317-0420	Total/NA	Water	300.0	
MB 550-208652/2	Method Blank	Total/NA	Water	300.0	
LCS 550-208652/5	Lab Control Sample	Total/NA	Water	300.0	
LCS 550-208652/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-141150-1 MS	CH-CCR-M52-0420	Total/NA	Water	300.0	
550-141150-1 MS	CH-CCR-M52-0420	Total/NA	Water	300.0	
550-141150-1 MSD	CH-CCR-M52-0420	Total/NA	Water	300.0	
550-141150-1 MSD	CH-CCR-M52-0420	Total/NA	Water	300.0	

Analysis Batch: 208874

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-1	CH-CCR-M52-0420	Total/NA	Water	300.0	
550-141150-3	CH-CCR-M53-0420	Total/NA	Water	300.0	
550-141150-5	CH-CCR-M55-0420	Total/NA	Water	300.0	
550-141150-7	CH-CCR-M69-0420	Total/NA	Water	300.0	
550-141150-9	CH-CCR-M70-0420	Total/NA	Water	300.0	
550-141150-11	CH-CCR-W301-0420	Total/NA	Water	300.0	
550-141150-13	CH-CCR-W302-0420	Total/NA	Water	300.0	
550-141150-15	CH-CCR-W303-0420	Total/NA	Water	300.0	
MB 550-208874/2	Method Blank	Total/NA	Water	300.0	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

HPLC/IC (Continued)

Analysis Batch: 208874 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 550-208874/7	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-208874/8	Lab Control Sample Dup	Total/NA	Water	300.0	
550-141150-1 MS	CH-CCR-M52-0420	Total/NA	Water	300.0	
550-141150-1 MSD	CH-CCR-M52-0420	Total/NA	Water	300.0	
550-141309-B-1 MS	Matrix Spike	Total/NA	Water	300.0	
550-141309-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 209010

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-32	CH-CCR-FD04-0420	Total/NA	Water	300.0	
550-141150-32	CH-CCR-FD04-0420	Total/NA	Water	300.0	
MB 550-209010/2	Method Blank	Total/NA	Water	300.0	
LCS 550-209010/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-209010/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-141388-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
550-141388-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 209011

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-17	CH-CCR-W304-0420	Total/NA	Water	300.0	
550-141150-19	CH-CCR-FD03-0420	Total/NA	Water	300.0	
550-141150-21	CH-CCR-W305-0420	Total/NA	Water	300.0	
550-141150-23	CH-CCR-W306-0420	Total/NA	Water	300.0	
550-141150-25	CH-CCR-W307-0420	Total/NA	Water	300.0	
550-141150-27	CH-CCR-W308-0420	Total/NA	Water	300.0	
550-141150-29	CH-CCR-W314-0420	Total/NA	Water	300.0	
MB 550-209011/2	Method Blank	Total/NA	Water	300.0	
LCS 550-209011/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-209011/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-141420-A-4 MS	Matrix Spike	Total/NA	Water	300.0	
550-141420-A-4 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 209282

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-32	CH-CCR-FD04-0420	Total/NA	Water	300.0	
MB 550-209282/2	Method Blank	Total/NA	Water	300.0	
LCS 550-209282/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-209282/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-141235-B-3 MS ^5	Matrix Spike	Total/NA	Water	300.0	
550-141235-B-3 MSD ^5	Matrix Spike Duplicate	Total/NA	Water	300.0	

Metals

Prep Batch: 208471

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-2	CH-CCR-M52-0420	Dissolved	Water	200.8	
550-141150-4	CH-CCR-M53-0420	Dissolved	Water	200.8	
550-141150-6	CH-CCR-M55-0420	Dissolved	Water	200.8	
550-141150-8	CH-CCR-M69-0420	Dissolved	Water	200.8	
550-141150-10	CH-CCR-M70-0420	Dissolved	Water	200.8	
550-141150-12	CH-CCR-W301-0420	Dissolved	Water	200.8	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Metals (Continued)

Prep Batch: 208471 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-14	CH-CCR-W302-0420	Dissolved	Water	200.8	
550-141150-16	CH-CCR-W303-0420	Dissolved	Water	200.8	
550-141150-18	CH-CCR-W304-0420	Dissolved	Water	200.8	
550-141150-20	CH-CCR-FD03-0420	Dissolved	Water	200.8	
550-141150-22	CH-CCR-W305-0420	Dissolved	Water	200.8	
550-141150-24	CH-CCR-W306-0420	Dissolved	Water	200.8	
550-141150-26	CH-CCR-W307-0420	Dissolved	Water	200.8	
550-141150-28	CH-CCR-W308-0420	Dissolved	Water	200.8	
550-141150-30	CH-CCR-W314-0420	Dissolved	Water	200.8	
550-141150-33	CH-CCR-FD04-0420	Dissolved	Water	200.8	
MB 550-208471/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-208471/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-208471/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-141150-2 MS	CH-CCR-M52-0420	Dissolved	Water	200.8	
550-141150-2 MSD	CH-CCR-M52-0420	Dissolved	Water	200.8	

Prep Batch: 208488

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-1	CH-CCR-M52-0420	Total/NA	Water	200.8	
550-141150-3	CH-CCR-M53-0420	Total/NA	Water	200.8	
550-141150-5	CH-CCR-M55-0420	Total/NA	Water	200.8	
550-141150-7	CH-CCR-M69-0420	Total/NA	Water	200.8	
550-141150-9	CH-CCR-M70-0420	Total/NA	Water	200.8	
550-141150-11	CH-CCR-W301-0420	Total/NA	Water	200.8	
550-141150-13	CH-CCR-W302-0420	Total/NA	Water	200.8	
550-141150-15	CH-CCR-W303-0420	Total/NA	Water	200.8	
550-141150-17	CH-CCR-W304-0420	Total/NA	Water	200.8	
550-141150-19	CH-CCR-FD03-0420	Total/NA	Water	200.8	
550-141150-21	CH-CCR-W305-0420	Total/NA	Water	200.8	
550-141150-23	CH-CCR-W306-0420	Total/NA	Water	200.8	
550-141150-25	CH-CCR-W307-0420	Total/NA	Water	200.8	
550-141150-27	CH-CCR-W308-0420	Total/NA	Water	200.8	
550-141150-29	CH-CCR-W314-0420	Total/NA	Water	200.8	
550-141150-31	CH-CCR-W317-0420	Total/NA	Water	200.8	
550-141150-32	CH-CCR-FD04-0420	Total/NA	Water	200.8	
MB 550-208488/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-208488/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-208488/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-141150-1 MS	CH-CCR-M52-0420	Total/NA	Water	200.8	
550-141150-1 MSD	CH-CCR-M52-0420	Total/NA	Water	200.8	

Prep Batch: 208528

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-2	CH-CCR-M52-0420	Dissolved	Water	200.7	
550-141150-4	CH-CCR-M53-0420	Dissolved	Water	200.7	
550-141150-6	CH-CCR-M55-0420	Dissolved	Water	200.7	
550-141150-8	CH-CCR-M69-0420	Dissolved	Water	200.7	
550-141150-10	CH-CCR-M70-0420	Dissolved	Water	200.7	
550-141150-12	CH-CCR-W301-0420	Dissolved	Water	200.7	
550-141150-14	CH-CCR-W302-0420	Dissolved	Water	200.7	
550-141150-16	CH-CCR-W303-0420	Dissolved	Water	200.7	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Metals (Continued)

Prep Batch: 208528 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-18	CH-CCR-W304-0420	Dissolved	Water	200.7	
550-141150-20	CH-CCR-FD03-0420	Dissolved	Water	200.7	
550-141150-22	CH-CCR-W305-0420	Dissolved	Water	200.7	
550-141150-24	CH-CCR-W306-0420	Dissolved	Water	200.7	
550-141150-26	CH-CCR-W307-0420	Dissolved	Water	200.7	
550-141150-28	CH-CCR-W308-0420	Dissolved	Water	200.7	
550-141150-30	CH-CCR-W314-0420	Dissolved	Water	200.7	
550-141150-31	CH-CCR-W317-0420	Total/NA	Water	200.7	
550-141150-32	CH-CCR-FD04-0420	Total/NA	Water	200.7	
550-141150-33	CH-CCR-FD04-0420	Dissolved	Water	200.7	
MB 550-208528/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-208528/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-208528/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-141150-6 MS	CH-CCR-M55-0420	Dissolved	Water	200.7	
550-141150-6 MSD	CH-CCR-M55-0420	Dissolved	Water	200.7	

Prep Batch: 208529

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-1	CH-CCR-M52-0420	Total/NA	Water	200.7	
550-141150-3	CH-CCR-M53-0420	Total/NA	Water	200.7	
550-141150-5	CH-CCR-M55-0420	Total/NA	Water	200.7	
550-141150-7	CH-CCR-M69-0420	Total/NA	Water	200.7	
550-141150-9	CH-CCR-M70-0420	Total/NA	Water	200.7	
550-141150-11	CH-CCR-W301-0420	Total/NA	Water	200.7	
550-141150-13	CH-CCR-W302-0420	Total/NA	Water	200.7	
550-141150-15	CH-CCR-W303-0420	Total/NA	Water	200.7	
550-141150-17	CH-CCR-W304-0420	Total/NA	Water	200.7	
550-141150-19	CH-CCR-FD03-0420	Total/NA	Water	200.7	
550-141150-21	CH-CCR-W305-0420	Total/NA	Water	200.7	
550-141150-23	CH-CCR-W306-0420	Total/NA	Water	200.7	
550-141150-25	CH-CCR-W307-0420	Total/NA	Water	200.7	
550-141150-27	CH-CCR-W308-0420	Total/NA	Water	200.7	
550-141150-29	CH-CCR-W314-0420	Total/NA	Water	200.7	
MB 550-208529/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-208529/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-208529/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-141149-B-3-B MS	Matrix Spike	Total/NA	Water	200.7	
550-141149-B-3-B MS ^10	Matrix Spike	Total/NA	Water	200.7	
550-141149-B-3-B MS ^5	Matrix Spike	Total/NA	Water	200.7	
550-141149-B-3-C MSD	Matrix Spike Duplicate	Total/NA	Water	200.7	
550-141149-B-3-C MSD ^10	Matrix Spike Duplicate	Total/NA	Water	200.7	
550-141149-B-3-C MSD ^5	Matrix Spike Duplicate	Total/NA	Water	200.7	

Analysis Batch: 208774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-1	CH-CCR-M52-0420	Total/NA	Water	200.8 LL	208488
550-141150-3	CH-CCR-M53-0420	Total/NA	Water	200.8 LL	208488
550-141150-5	CH-CCR-M55-0420	Total/NA	Water	200.8 LL	208488
550-141150-7	CH-CCR-M69-0420	Total/NA	Water	200.8 LL	208488
550-141150-9	CH-CCR-M70-0420	Total/NA	Water	200.8 LL	208488
550-141150-11	CH-CCR-W301-0420	Total/NA	Water	200.8 LL	208488

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Metals (Continued)

Analysis Batch: 208774 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-13	CH-CCR-W302-0420	Total/NA	Water	200.8 LL	208488
550-141150-15	CH-CCR-W303-0420	Total/NA	Water	200.8 LL	208488
550-141150-17	CH-CCR-W304-0420	Total/NA	Water	200.8 LL	208488
550-141150-19	CH-CCR-FD03-0420	Total/NA	Water	200.8 LL	208488
550-141150-21	CH-CCR-W305-0420	Total/NA	Water	200.8 LL	208488
550-141150-25	CH-CCR-W307-0420	Total/NA	Water	200.8 LL	208488
550-141150-31	CH-CCR-W317-0420	Total/NA	Water	200.8 LL	208488
MB 550-208488/1-A	Method Blank	Total/NA	Water	200.8 LL	208488
LCS 550-208488/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	208488
LCSD 550-208488/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	208488
550-141150-1 MS	CH-CCR-M52-0420	Total/NA	Water	200.8 LL	208488
550-141150-1 MSD	CH-CCR-M52-0420	Total/NA	Water	200.8 LL	208488

Analysis Batch: 208945

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-2	CH-CCR-M52-0420	Dissolved	Water	200.7 Rev 4.4	208528
550-141150-4	CH-CCR-M53-0420	Dissolved	Water	200.7 Rev 4.4	208528
550-141150-6	CH-CCR-M55-0420	Dissolved	Water	200.7 Rev 4.4	208528
550-141150-8	CH-CCR-M69-0420	Dissolved	Water	200.7 Rev 4.4	208528
550-141150-10	CH-CCR-M70-0420	Dissolved	Water	200.7 Rev 4.4	208528
550-141150-12	CH-CCR-W301-0420	Dissolved	Water	200.7 Rev 4.4	208528
550-141150-14	CH-CCR-W302-0420	Dissolved	Water	200.7 Rev 4.4	208528
550-141150-16	CH-CCR-W303-0420	Dissolved	Water	200.7 Rev 4.4	208528
550-141150-18	CH-CCR-W304-0420	Dissolved	Water	200.7 Rev 4.4	208528
MB 550-208528/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	208528
LCS 550-208528/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	208528
LCSD 550-208528/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	208528
550-141150-6 MS	CH-CCR-M55-0420	Dissolved	Water	200.7 Rev 4.4	208528
550-141150-6 MSD	CH-CCR-M55-0420	Dissolved	Water	200.7 Rev 4.4	208528

Analysis Batch: 209071

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-1	CH-CCR-M52-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-3	CH-CCR-M53-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-5	CH-CCR-M55-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-7	CH-CCR-M69-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-9	CH-CCR-M70-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-11	CH-CCR-W301-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-13	CH-CCR-W302-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-15	CH-CCR-W303-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-17	CH-CCR-W304-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-19	CH-CCR-FD03-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-21	CH-CCR-W305-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-23	CH-CCR-W306-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-25	CH-CCR-W307-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-27	CH-CCR-W308-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-29	CH-CCR-W314-0420	Total/NA	Water	200.7 Rev 4.4	208529
MB 550-208529/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	208529
LCS 550-208529/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	208529
LCSD 550-208529/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	208529
550-141149-B-3-B MS	Matrix Spike	Total/NA	Water	200.7 Rev 4.4	208529

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Metals (Continued)

Analysis Batch: 209071 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141149-B-3-C MSD	Matrix Spike Duplicate	Total/NA	Water	200.7 Rev 4.4	208529

Analysis Batch: 209335

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-20	CH-CCR-FD03-0420	Dissolved	Water	200.7 Rev 4.4	208528
550-141150-22	CH-CCR-W305-0420	Dissolved	Water	200.7 Rev 4.4	208528
550-141150-24	CH-CCR-W306-0420	Dissolved	Water	200.7 Rev 4.4	208528
550-141150-26	CH-CCR-W307-0420	Dissolved	Water	200.7 Rev 4.4	208528
550-141150-28	CH-CCR-W308-0420	Dissolved	Water	200.7 Rev 4.4	208528
550-141150-30	CH-CCR-W314-0420	Dissolved	Water	200.7 Rev 4.4	208528
550-141150-31	CH-CCR-W317-0420	Total/NA	Water	200.7 Rev 4.4	208528
550-141150-32	CH-CCR-FD04-0420	Total/NA	Water	200.7 Rev 4.4	208528
550-141150-32	CH-CCR-FD04-0420	Total/NA	Water	200.7 Rev 4.4	208528
550-141150-33	CH-CCR-FD04-0420	Dissolved	Water	200.7 Rev 4.4	208528
MB 550-208528/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	208528
LCS 550-208528/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	208528
LCSD 550-208528/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	208528
550-141150-6 MS	CH-CCR-M55-0420	Dissolved	Water	200.7 Rev 4.4	208528
550-141150-6 MS	CH-CCR-M55-0420	Dissolved	Water	200.7 Rev 4.4	208528
550-141150-6 MSD	CH-CCR-M55-0420	Dissolved	Water	200.7 Rev 4.4	208528
550-141150-6 MSD	CH-CCR-M55-0420	Dissolved	Water	200.7 Rev 4.4	208528

Analysis Batch: 209337

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-1	CH-CCR-M52-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-3	CH-CCR-M53-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-5	CH-CCR-M55-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-7	CH-CCR-M69-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-9	CH-CCR-M70-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-11	CH-CCR-W301-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-13	CH-CCR-W302-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-15	CH-CCR-W303-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-17	CH-CCR-W304-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-19	CH-CCR-FD03-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-21	CH-CCR-W305-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-23	CH-CCR-W306-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-25	CH-CCR-W307-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-27	CH-CCR-W308-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-29	CH-CCR-W314-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141149-B-3-B MS ^10	Matrix Spike	Total/NA	Water	200.7 Rev 4.4	208529
550-141149-B-3-C MSD ^10	Matrix Spike Duplicate	Total/NA	Water	200.7 Rev 4.4	208529

Analysis Batch: 209342

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-20	CH-CCR-FD03-0420	Dissolved	Water	200.7 Rev 4.4	208528
550-141150-22	CH-CCR-W305-0420	Dissolved	Water	200.7 Rev 4.4	208528
550-141150-24	CH-CCR-W306-0420	Dissolved	Water	200.7 Rev 4.4	208528
550-141150-26	CH-CCR-W307-0420	Dissolved	Water	200.7 Rev 4.4	208528
550-141150-28	CH-CCR-W308-0420	Dissolved	Water	200.7 Rev 4.4	208528
550-141150-30	CH-CCR-W314-0420	Dissolved	Water	200.7 Rev 4.4	208528
550-141150-31	CH-CCR-W317-0420	Total/NA	Water	200.7 Rev 4.4	208528

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Metals (Continued)

Analysis Batch: 209342 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-32	CH-CCR-FD04-0420	Total/NA	Water	200.7 Rev 4.4	208528
550-141150-33	CH-CCR-FD04-0420	Dissolved	Water	200.7 Rev 4.4	208528

Analysis Batch: 209392

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-2	CH-CCR-M52-0420	Dissolved	Water	200.8 LL	208471
550-141150-4	CH-CCR-M53-0420	Dissolved	Water	200.8 LL	208471
550-141150-6	CH-CCR-M55-0420	Dissolved	Water	200.8 LL	208471
550-141150-8	CH-CCR-M69-0420	Dissolved	Water	200.8 LL	208471
550-141150-10	CH-CCR-M70-0420	Dissolved	Water	200.8 LL	208471
550-141150-12	CH-CCR-W301-0420	Dissolved	Water	200.8 LL	208471
550-141150-14	CH-CCR-W302-0420	Dissolved	Water	200.8 LL	208471
550-141150-16	CH-CCR-W303-0420	Dissolved	Water	200.8 LL	208471
550-141150-20	CH-CCR-FD03-0420	Dissolved	Water	200.8 LL	208471
550-141150-22	CH-CCR-W305-0420	Dissolved	Water	200.8 LL	208471
550-141150-24	CH-CCR-W306-0420	Dissolved	Water	200.8 LL	208471
550-141150-26	CH-CCR-W307-0420	Dissolved	Water	200.8 LL	208471
550-141150-30	CH-CCR-W314-0420	Dissolved	Water	200.8 LL	208471
550-141150-33	CH-CCR-FD04-0420	Dissolved	Water	200.8 LL	208471
MB 550-208471/1-A	Method Blank	Total/NA	Water	200.8 LL	208471
LCS 550-208471/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	208471
LCSD 550-208471/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	208471
550-141150-2 MS	CH-CCR-M52-0420	Dissolved	Water	200.8 LL	208471
550-141150-2 MSD	CH-CCR-M52-0420	Dissolved	Water	200.8 LL	208471

Analysis Batch: 209393

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-1	CH-CCR-M52-0420	Total/NA	Water	200.8 LL	208488
550-141150-3	CH-CCR-M53-0420	Total/NA	Water	200.8 LL	208488
550-141150-5	CH-CCR-M55-0420	Total/NA	Water	200.8 LL	208488
550-141150-7	CH-CCR-M69-0420	Total/NA	Water	200.8 LL	208488
550-141150-9	CH-CCR-M70-0420	Total/NA	Water	200.8 LL	208488
550-141150-11	CH-CCR-W301-0420	Total/NA	Water	200.8 LL	208488
550-141150-13	CH-CCR-W302-0420	Total/NA	Water	200.8 LL	208488
550-141150-15	CH-CCR-W303-0420	Total/NA	Water	200.8 LL	208488
550-141150-17	CH-CCR-W304-0420	Total/NA	Water	200.8 LL	208488
550-141150-19	CH-CCR-FD03-0420	Total/NA	Water	200.8 LL	208488
550-141150-21	CH-CCR-W305-0420	Total/NA	Water	200.8 LL	208488
550-141150-23	CH-CCR-W306-0420	Total/NA	Water	200.8 LL	208488
550-141150-25	CH-CCR-W307-0420	Total/NA	Water	200.8 LL	208488
550-141150-27	CH-CCR-W308-0420	Total/NA	Water	200.8 LL	208488
550-141150-29	CH-CCR-W314-0420	Total/NA	Water	200.8 LL	208488
550-141150-31	CH-CCR-W317-0420	Total/NA	Water	200.8 LL	208488
550-141150-32	CH-CCR-FD04-0420	Total/NA	Water	200.8 LL	208488
MB 550-208488/1-A	Method Blank	Total/NA	Water	200.8 LL	208488
LCS 550-208488/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	208488
LCSD 550-208488/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	208488
550-141150-1 MS	CH-CCR-M52-0420	Total/NA	Water	200.8 LL	208488
550-141150-1 MSD	CH-CCR-M52-0420	Total/NA	Water	200.8 LL	208488

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Metals

Prep Batch: 209433

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-1	CH-CCR-M52-0420	Total/NA	Water	200.8	
550-141150-3	CH-CCR-M53-0420	Total/NA	Water	200.8	
550-141150-5	CH-CCR-M55-0420	Total/NA	Water	200.8	
550-141150-7	CH-CCR-M69-0420	Total/NA	Water	200.8	
550-141150-9	CH-CCR-M70-0420	Total/NA	Water	200.8	
550-141150-11	CH-CCR-W301-0420	Total/NA	Water	200.8	
550-141150-13	CH-CCR-W302-0420	Total/NA	Water	200.8	
550-141150-15	CH-CCR-W303-0420	Total/NA	Water	200.8	
550-141150-17	CH-CCR-W304-0420	Total/NA	Water	200.8	
550-141150-19	CH-CCR-FD03-0420	Total/NA	Water	200.8	
550-141150-21	CH-CCR-W305-0420	Total/NA	Water	200.8	
550-141150-23	CH-CCR-W306-0420	Total/NA	Water	200.8	
550-141150-25	CH-CCR-W307-0420	Total/NA	Water	200.8	
550-141150-27	CH-CCR-W308-0420	Total/NA	Water	200.8	
550-141150-29	CH-CCR-W314-0420	Total/NA	Water	200.8	
550-141150-31	CH-CCR-W317-0420	Total/NA	Water	200.8	
550-141150-32	CH-CCR-FD04-0420	Total/NA	Water	200.8	
MB 550-209433/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-209433/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-209433/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-141150-5 MS	CH-CCR-M55-0420	Total/NA	Water	200.8	
550-141150-5 MSD	CH-CCR-M55-0420	Total/NA	Water	200.8	

Analysis Batch: 209486

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-2	CH-CCR-M52-0420	Dissolved	Water	200.8 LL	208471
550-141150-4	CH-CCR-M53-0420	Dissolved	Water	200.8 LL	208471
550-141150-6	CH-CCR-M55-0420	Dissolved	Water	200.8 LL	208471
550-141150-8	CH-CCR-M69-0420	Dissolved	Water	200.8 LL	208471
550-141150-10	CH-CCR-M70-0420	Dissolved	Water	200.8 LL	208471
550-141150-12	CH-CCR-W301-0420	Dissolved	Water	200.8 LL	208471
550-141150-14	CH-CCR-W302-0420	Dissolved	Water	200.8 LL	208471
550-141150-16	CH-CCR-W303-0420	Dissolved	Water	200.8 LL	208471
550-141150-18	CH-CCR-W304-0420	Dissolved	Water	200.8 LL	208471
550-141150-20	CH-CCR-FD03-0420	Dissolved	Water	200.8 LL	208471
550-141150-22	CH-CCR-W305-0420	Dissolved	Water	200.8 LL	208471
550-141150-24	CH-CCR-W306-0420	Dissolved	Water	200.8 LL	208471
550-141150-26	CH-CCR-W307-0420	Dissolved	Water	200.8 LL	208471
550-141150-28	CH-CCR-W308-0420	Dissolved	Water	200.8 LL	208471
550-141150-30	CH-CCR-W314-0420	Dissolved	Water	200.8 LL	208471
550-141150-33	CH-CCR-FD04-0420	Dissolved	Water	200.8 LL	208471
550-141150-2 MS	CH-CCR-M52-0420	Dissolved	Water	200.8 LL	208471
550-141150-2 MSD	CH-CCR-M52-0420	Dissolved	Water	200.8 LL	208471

Analysis Batch: 209501

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-1	CH-CCR-M52-0420	Total/NA	Water	200.8 LL	208488
550-141150-3	CH-CCR-M53-0420	Total/NA	Water	200.8 LL	208488
550-141150-5	CH-CCR-M55-0420	Total/NA	Water	200.8 LL	208488
550-141150-7	CH-CCR-M69-0420	Total/NA	Water	200.8 LL	208488
550-141150-9	CH-CCR-M70-0420	Total/NA	Water	200.8 LL	208488

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Metals (Continued)

Analysis Batch: 209501 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-11	CH-CCR-W301-0420	Total/NA	Water	200.8 LL	208488
550-141150-13	CH-CCR-W302-0420	Total/NA	Water	200.8 LL	208488
550-141150-15	CH-CCR-W303-0420	Total/NA	Water	200.8 LL	208488
550-141150-17	CH-CCR-W304-0420	Total/NA	Water	200.8 LL	208488
550-141150-19	CH-CCR-FD03-0420	Total/NA	Water	200.8 LL	208488
550-141150-21	CH-CCR-W305-0420	Total/NA	Water	200.8 LL	208488
550-141150-23	CH-CCR-W306-0420	Total/NA	Water	200.8 LL	208488
550-141150-25	CH-CCR-W307-0420	Total/NA	Water	200.8 LL	208488
550-141150-27	CH-CCR-W308-0420	Total/NA	Water	200.8 LL	208488
550-141150-29	CH-CCR-W314-0420	Total/NA	Water	200.8 LL	208488
550-141150-31	CH-CCR-W317-0420	Total/NA	Water	200.8 LL	208488
550-141150-32	CH-CCR-FD04-0420	Total/NA	Water	200.8 LL	208488
550-141150-1 MS	CH-CCR-M52-0420	Total/NA	Water	200.8 LL	208488
550-141150-1 MSD	CH-CCR-M52-0420	Total/NA	Water	200.8 LL	208488

Analysis Batch: 209504

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-1	CH-CCR-M52-0420	Total/NA	Water	200.8 LL	209433
550-141150-3	CH-CCR-M53-0420	Total/NA	Water	200.8 LL	209433
550-141150-5	CH-CCR-M55-0420	Total/NA	Water	200.8 LL	209433
550-141150-7	CH-CCR-M69-0420	Total/NA	Water	200.8 LL	209433
550-141150-9	CH-CCR-M70-0420	Total/NA	Water	200.8 LL	209433
550-141150-11	CH-CCR-W301-0420	Total/NA	Water	200.8 LL	209433
550-141150-13	CH-CCR-W302-0420	Total/NA	Water	200.8 LL	209433
550-141150-15	CH-CCR-W303-0420	Total/NA	Water	200.8 LL	209433
550-141150-17	CH-CCR-W304-0420	Total/NA	Water	200.8 LL	209433
550-141150-19	CH-CCR-FD03-0420	Total/NA	Water	200.8 LL	209433
550-141150-21	CH-CCR-W305-0420	Total/NA	Water	200.8 LL	209433
550-141150-23	CH-CCR-W306-0420	Total/NA	Water	200.8 LL	209433
550-141150-25	CH-CCR-W307-0420	Total/NA	Water	200.8 LL	209433
550-141150-27	CH-CCR-W308-0420	Total/NA	Water	200.8 LL	209433
550-141150-29	CH-CCR-W314-0420	Total/NA	Water	200.8 LL	209433
550-141150-31	CH-CCR-W317-0420	Total/NA	Water	200.8 LL	209433
550-141150-32	CH-CCR-FD04-0420	Total/NA	Water	200.8 LL	209433
MB 550-209433/1-A	Method Blank	Total/NA	Water	200.8 LL	209433
LCS 550-209433/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	209433
LCSD 550-209433/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	209433
550-141150-5 MS	CH-CCR-M55-0420	Total/NA	Water	200.8 LL	209433
550-141150-5 MSD	CH-CCR-M55-0420	Total/NA	Water	200.8 LL	209433

Analysis Batch: 209509

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 550-208528/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	208528
LCS 550-208528/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	208528
LCSD 550-208528/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	208528
550-141150-6 MS	CH-CCR-M55-0420	Dissolved	Water	200.7 Rev 4.4	208528
550-141150-6 MSD	CH-CCR-M55-0420	Dissolved	Water	200.7 Rev 4.4	208528

Analysis Batch: 209650

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-31	CH-CCR-W317-0420	Total/NA	Water	200.7 Rev 4.4	208528

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Metals (Continued)

Analysis Batch: 209650 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-32	CH-CCR-FD04-0420	Total/NA	Water	200.7 Rev 4.4	208528
MB 550-208528/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	208528
LCS 550-208528/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	208528
LCSD 550-208528/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	208528
550-141150-6 MS	CH-CCR-M55-0420	Dissolved	Water	200.7 Rev 4.4	208528
550-141150-6 MSD	CH-CCR-M55-0420	Dissolved	Water	200.7 Rev 4.4	208528

Analysis Batch: 209651

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-1	CH-CCR-M52-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-3	CH-CCR-M53-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-5	CH-CCR-M55-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-7	CH-CCR-M69-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-9	CH-CCR-M70-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-11	CH-CCR-W301-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-13	CH-CCR-W302-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-15	CH-CCR-W303-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-17	CH-CCR-W304-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-19	CH-CCR-FD03-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-21	CH-CCR-W305-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-23	CH-CCR-W306-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-25	CH-CCR-W307-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-27	CH-CCR-W308-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-29	CH-CCR-W314-0420	Total/NA	Water	200.7 Rev 4.4	208529
MB 550-208529/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	208529
LCS 550-208529/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	208529
LCSD 550-208529/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	208529
550-141149-B-3-B MS ^5	Matrix Spike	Total/NA	Water	200.7 Rev 4.4	208529
550-141149-B-3-C MSD ^5	Matrix Spike Duplicate	Total/NA	Water	200.7 Rev 4.4	208529

Analysis Batch: 209859

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-1	CH-CCR-M52-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-3	CH-CCR-M53-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-5	CH-CCR-M55-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-7	CH-CCR-M69-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-9	CH-CCR-M70-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-11	CH-CCR-W301-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-13	CH-CCR-W302-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-15	CH-CCR-W303-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-17	CH-CCR-W304-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-19	CH-CCR-FD03-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-21	CH-CCR-W305-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-23	CH-CCR-W306-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-25	CH-CCR-W307-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-27	CH-CCR-W308-0420	Total/NA	Water	200.7 Rev 4.4	208529
550-141150-29	CH-CCR-W314-0420	Total/NA	Water	200.7 Rev 4.4	208529
MB 550-208529/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	208529
LCS 550-208529/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	208529
LCSD 550-208529/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	208529
550-141149-B-3-B MS ^5	Matrix Spike	Total/NA	Water	200.7 Rev 4.4	208529

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Metals (Continued)

Analysis Batch: 209859 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141149-B-3-C MSD ^5	Matrix Spike Duplicate	Total/NA	Water	200.7 Rev 4.4	208529

General Chemistry

Analysis Batch: 208605

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-1	CH-CCR-M52-0420	Total/NA	Water	SM 4500 NH3 D	
550-141150-3	CH-CCR-M53-0420	Total/NA	Water	SM 4500 NH3 D	
550-141150-5	CH-CCR-M55-0420	Total/NA	Water	SM 4500 NH3 D	
550-141150-7	CH-CCR-M69-0420	Total/NA	Water	SM 4500 NH3 D	
550-141150-9	CH-CCR-M70-0420	Total/NA	Water	SM 4500 NH3 D	
550-141150-11	CH-CCR-W301-0420	Total/NA	Water	SM 4500 NH3 D	
550-141150-13	CH-CCR-W302-0420	Total/NA	Water	SM 4500 NH3 D	
550-141150-15	CH-CCR-W303-0420	Total/NA	Water	SM 4500 NH3 D	
550-141150-17	CH-CCR-W304-0420	Total/NA	Water	SM 4500 NH3 D	
550-141150-19	CH-CCR-FD03-0420	Total/NA	Water	SM 4500 NH3 D	
550-141150-21	CH-CCR-W305-0420	Total/NA	Water	SM 4500 NH3 D	
550-141150-23	CH-CCR-W306-0420	Total/NA	Water	SM 4500 NH3 D	
550-141150-25	CH-CCR-W307-0420	Total/NA	Water	SM 4500 NH3 D	
550-141150-27	CH-CCR-W308-0420	Total/NA	Water	SM 4500 NH3 D	
550-141150-29	CH-CCR-W314-0420	Total/NA	Water	SM 4500 NH3 D	
550-141150-32	CH-CCR-FD04-0420	Total/NA	Water	SM 4500 NH3 D	
MB 550-208605/28	Method Blank	Total/NA	Water	SM 4500 NH3 D	
LCS 550-208605/29	Lab Control Sample	Total/NA	Water	SM 4500 NH3 D	
LCSD 550-208605/30	Lab Control Sample Dup	Total/NA	Water	SM 4500 NH3 D	
550-141150-1 MS	CH-CCR-M52-0420	Total/NA	Water	SM 4500 NH3 D	
550-141150-1 MSD	CH-CCR-M52-0420	Total/NA	Water	SM 4500 NH3 D	

Filtration Batch: 208629

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-2	CH-CCR-M52-0420	Dissolved	Water	Filtration	
550-141150-6	CH-CCR-M55-0420	Dissolved	Water	Filtration	
550-141150-8	CH-CCR-M69-0420	Dissolved	Water	Filtration	
550-141150-12	CH-CCR-W301-0420	Dissolved	Water	Filtration	
550-141150-14	CH-CCR-W302-0420	Dissolved	Water	Filtration	
550-141150-16	CH-CCR-W303-0420	Dissolved	Water	Filtration	
550-141150-18	CH-CCR-W304-0420	Dissolved	Water	Filtration	
550-141150-22	CH-CCR-W305-0420	Dissolved	Water	Filtration	
550-141150-24	CH-CCR-W306-0420	Dissolved	Water	Filtration	
550-141150-26	CH-CCR-W307-0420	Dissolved	Water	Filtration	
550-141150-28	CH-CCR-W308-0420	Dissolved	Water	Filtration	
550-141150-30	CH-CCR-W314-0420	Dissolved	Water	Filtration	
550-141150-33	CH-CCR-FD04-0420	Dissolved	Water	Filtration	
MB 550-208629/1-A	Method Blank	Dissolved	Water	Filtration	
550-141150-2 MS	CH-CCR-M52-0420	Dissolved	Water	Filtration	
550-141150-2 MSD	CH-CCR-M52-0420	Dissolved	Water	Filtration	

Analysis Batch: 208634

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-1	CH-CCR-M52-0420	Total/NA	Water	SM 2540C	
550-141150-5	CH-CCR-M55-0420	Total/NA	Water	SM 2540C	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

General Chemistry (Continued)

Analysis Batch: 208634 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-11	CH-CCR-W301-0420	Total/NA	Water	SM 2540C	
550-141150-13	CH-CCR-W302-0420	Total/NA	Water	SM 2540C	
550-141150-15	CH-CCR-W303-0420	Total/NA	Water	SM 2540C	
550-141150-17	CH-CCR-W304-0420	Total/NA	Water	SM 2540C	
550-141150-21	CH-CCR-W305-0420	Total/NA	Water	SM 2540C	
550-141150-25	CH-CCR-W307-0420	Total/NA	Water	SM 2540C	
550-141150-27	CH-CCR-W308-0420	Total/NA	Water	SM 2540C	
550-141150-31	CH-CCR-W317-0420	Total/NA	Water	SM 2540C	
MB 550-208634/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-208634/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-208634/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-141150-1 DU	CH-CCR-M52-0420	Total/NA	Water	SM 2540C	

Analysis Batch: 208656

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-1	CH-CCR-M52-0420	Total/NA	Water	SM 2320B	
550-141150-3	CH-CCR-M53-0420	Total/NA	Water	SM 2320B	
550-141150-5	CH-CCR-M55-0420	Total/NA	Water	SM 2320B	
550-141150-7	CH-CCR-M69-0420	Total/NA	Water	SM 2320B	
550-141150-9	CH-CCR-M70-0420	Total/NA	Water	SM 2320B	
550-141150-11	CH-CCR-W301-0420	Total/NA	Water	SM 2320B	
550-141150-13	CH-CCR-W302-0420	Total/NA	Water	SM 2320B	
550-141150-15	CH-CCR-W303-0420	Total/NA	Water	SM 2320B	
550-141150-17	CH-CCR-W304-0420	Total/NA	Water	SM 2320B	
550-141150-19	CH-CCR-FD03-0420	Total/NA	Water	SM 2320B	
550-141150-21	CH-CCR-W305-0420	Total/NA	Water	SM 2320B	
550-141150-23	CH-CCR-W306-0420	Total/NA	Water	SM 2320B	
550-141150-25	CH-CCR-W307-0420	Total/NA	Water	SM 2320B	
550-141150-27	CH-CCR-W308-0420	Total/NA	Water	SM 2320B	
550-141150-29	CH-CCR-W314-0420	Total/NA	Water	SM 2320B	
550-141150-32	CH-CCR-FD04-0420	Total/NA	Water	SM 2320B	
MB 550-208656/6	Method Blank	Total/NA	Water	SM 2320B	
LCS 550-208656/5	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 550-208656/19	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
550-141140-F-1 DU	Duplicate	Total/NA	Water	SM 2320B	
550-141150-1 DU	CH-CCR-M52-0420	Total/NA	Water	SM 2320B	
550-141150-17 DU	CH-CCR-W304-0420	Total/NA	Water	SM 2320B	

Analysis Batch: 208747

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-3	CH-CCR-M53-0420	Total/NA	Water	SM 2540C	
550-141150-7	CH-CCR-M69-0420	Total/NA	Water	SM 2540C	
550-141150-9	CH-CCR-M70-0420	Total/NA	Water	SM 2540C	
550-141150-19	CH-CCR-FD03-0420	Total/NA	Water	SM 2540C	
550-141150-23	CH-CCR-W306-0420	Total/NA	Water	SM 2540C	
550-141150-29	CH-CCR-W314-0420	Total/NA	Water	SM 2540C	
550-141150-32	CH-CCR-FD04-0420	Total/NA	Water	SM 2540C	
MB 550-208747/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-208747/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-208747/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-141150-3 DU	CH-CCR-M53-0420	Total/NA	Water	SM 2540C	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

General Chemistry

Analysis Batch: 208783

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-1	CH-CCR-M52-0420	Total/NA	Water	SM 4500 H+ B	
550-141150-3	CH-CCR-M53-0420	Total/NA	Water	SM 4500 H+ B	
550-141150-5	CH-CCR-M55-0420	Total/NA	Water	SM 4500 H+ B	
550-141150-7	CH-CCR-M69-0420	Total/NA	Water	SM 4500 H+ B	
550-141150-9	CH-CCR-M70-0420	Total/NA	Water	SM 4500 H+ B	
550-141150-11	CH-CCR-W301-0420	Total/NA	Water	SM 4500 H+ B	
550-141150-13	CH-CCR-W302-0420	Total/NA	Water	SM 4500 H+ B	
550-141150-15	CH-CCR-W303-0420	Total/NA	Water	SM 4500 H+ B	
550-141150-17	CH-CCR-W304-0420	Total/NA	Water	SM 4500 H+ B	
550-141150-19	CH-CCR-FD03-0420	Total/NA	Water	SM 4500 H+ B	
550-141150-21	CH-CCR-W305-0420	Total/NA	Water	SM 4500 H+ B	
550-141150-23	CH-CCR-W306-0420	Total/NA	Water	SM 4500 H+ B	
550-141150-25	CH-CCR-W307-0420	Total/NA	Water	SM 4500 H+ B	
550-141150-27	CH-CCR-W308-0420	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-208783/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-208783/13	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-208783/25	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
550-140991-A-5 DU	Duplicate	Total/NA	Water	SM 4500 H+ B	
550-141150-9 DU	CH-CCR-M70-0420	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 208812

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-2	CH-CCR-M52-0420	Dissolved	Water	SM 5310B	208629
550-141150-6	CH-CCR-M55-0420	Dissolved	Water	SM 5310B	208629
550-141150-8	CH-CCR-M69-0420	Dissolved	Water	SM 5310B	208629
550-141150-12	CH-CCR-W301-0420	Dissolved	Water	SM 5310B	208629
550-141150-14	CH-CCR-W302-0420	Dissolved	Water	SM 5310B	208629
550-141150-16	CH-CCR-W303-0420	Dissolved	Water	SM 5310B	208629
550-141150-18	CH-CCR-W304-0420	Dissolved	Water	SM 5310B	208629
550-141150-22	CH-CCR-W305-0420	Dissolved	Water	SM 5310B	208629
550-141150-24	CH-CCR-W306-0420	Dissolved	Water	SM 5310B	208629
550-141150-26	CH-CCR-W307-0420	Dissolved	Water	SM 5310B	208629
550-141150-28	CH-CCR-W308-0420	Dissolved	Water	SM 5310B	208629
550-141150-30	CH-CCR-W314-0420	Dissolved	Water	SM 5310B	208629
550-141150-33	CH-CCR-FD04-0420	Dissolved	Water	SM 5310B	208629
MB 550-208629/1-A	Method Blank	Dissolved	Water	SM 5310B	208629
LCS 550-208812/6	Lab Control Sample	Dissolved	Water	SM 5310B	
LCSD 550-208812/7	Lab Control Sample Dup	Dissolved	Water	SM 5310B	
550-141150-2 MS	CH-CCR-M52-0420	Dissolved	Water	SM 5310B	208629
550-141150-2 MSD	CH-CCR-M52-0420	Dissolved	Water	SM 5310B	208629

Analysis Batch: 208813

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-1	CH-CCR-M52-0420	Total/NA	Water	SM 5310B	
550-141150-5	CH-CCR-M55-0420	Total/NA	Water	SM 5310B	
550-141150-9	CH-CCR-M70-0420	Total/NA	Water	SM 5310B	
550-141150-11	CH-CCR-W301-0420	Total/NA	Water	SM 5310B	
550-141150-17	CH-CCR-W304-0420	Total/NA	Water	SM 5310B	
550-141150-21	CH-CCR-W305-0420	Total/NA	Water	SM 5310B	
550-141150-23	CH-CCR-W306-0420	Total/NA	Water	SM 5310B	
550-141150-27	CH-CCR-W308-0420	Total/NA	Water	SM 5310B	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

General Chemistry (Continued)

Analysis Batch: 208813 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-29	CH-CCR-W314-0420	Total/NA	Water	SM 5310B	
550-141150-32	CH-CCR-FD04-0420	Total/NA	Water	SM 5310B	
MB 550-208813/31	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-208813/32	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-208813/33	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-141150-1 MS	CH-CCR-M52-0420	Total/NA	Water	SM 5310B	
550-141150-1 MSD	CH-CCR-M52-0420	Total/NA	Water	SM 5310B	

Filtration Batch: 208900

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-4	CH-CCR-M53-0420	Dissolved	Water	Filtration	
550-141150-10	CH-CCR-M70-0420	Dissolved	Water	Filtration	
550-141150-20	CH-CCR-FD03-0420	Dissolved	Water	Filtration	
MB 550-208900/1-A	Method Blank	Dissolved	Water	Filtration	
550-141150-4 MS	CH-CCR-M53-0420	Dissolved	Water	Filtration	
550-141150-4 MSD	CH-CCR-M53-0420	Dissolved	Water	Filtration	

Analysis Batch: 208901

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-29	CH-CCR-W314-0420	Total/NA	Water	SM 4500 H+ B	
550-141150-31	CH-CCR-W317-0420	Total/NA	Water	SM 4500 H+ B	
550-141150-32	CH-CCR-FD04-0420	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-208901/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-208901/13	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
550-141150-29 DU	CH-CCR-W314-0420	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 208963

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-4	CH-CCR-M53-0420	Dissolved	Water	SM 5310B	208900
550-141150-10	CH-CCR-M70-0420	Dissolved	Water	SM 5310B	208900
550-141150-20	CH-CCR-FD03-0420	Dissolved	Water	SM 5310B	208900
MB 550-208900/1-A	Method Blank	Dissolved	Water	SM 5310B	208900
LCS 550-208963/6	Lab Control Sample	Dissolved	Water	SM 5310B	
LCSD 550-208963/7	Lab Control Sample Dup	Dissolved	Water	SM 5310B	
550-141150-4 MS	CH-CCR-M53-0420	Dissolved	Water	SM 5310B	208900
550-141150-4 MSD	CH-CCR-M53-0420	Dissolved	Water	SM 5310B	208900

Analysis Batch: 208964

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-3	CH-CCR-M53-0420	Total/NA	Water	SM 5310B	
550-141150-7	CH-CCR-M69-0420	Total/NA	Water	SM 5310B	
550-141150-13	CH-CCR-W302-0420	Total/NA	Water	SM 5310B	
550-141150-15	CH-CCR-W303-0420	Total/NA	Water	SM 5310B	
550-141150-19	CH-CCR-FD03-0420	Total/NA	Water	SM 5310B	
MB 550-208964/16	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-208964/17	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-208964/18	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-141210-A-1 MS ^10	Matrix Spike	Total/NA	Water	SM 5310B	
550-141210-A-1 MSD ^10	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

General Chemistry

Analysis Batch: 209233

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141150-25	CH-CCR-W307-0420	Total/NA	Water	SM 5310B	
MB 550-209233/5	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-209233/6	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-209233/7	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-141365-A-1 MS ^10	Matrix Spike	Total/NA	Water	SM 5310B	
550-141365-A-1 MSD ^10	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-M52-0420

Lab Sample ID: 550-141150-1

Date Collected: 04/19/20 11:52

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	208652	04/23/20 00:13	KJS	TAL PHX
Total/NA	Analysis	300.0		200	208652	04/23/20 01:08	KJS	TAL PHX
Total/NA	Analysis	300.0		5	208874	04/25/20 04:00	NEL	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	209071	04/28/20 17:42	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	209337	04/30/20 19:34	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209651	05/05/20 13:33	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209859	05/07/20 17:35	SRA	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	208774	04/23/20 22:52	ARE	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		10	209393	04/30/20 22:22	ARE	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209501	05/04/20 17:24	ARE	TAL PHX
Total/NA	Prep	200.8			209433	05/04/20 05:28	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209504	05/04/20 18:51	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	208656	04/23/20 09:39	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	208634		YET	TAL PHX
					(Start)	04/23/20 09:33		
					(End)	04/24/20 10:55		
Total/NA	Analysis	SM 4500 H+ B		1	208783	04/24/20 15:00	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	208605	04/22/20 19:09	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	208813	04/23/20 18:40	DGS	TAL PHX

Client Sample ID: CH-CCR-M52-0420

Lab Sample ID: 550-141150-2

Date Collected: 04/19/20 11:52

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			208528	04/22/20 13:34	MGM	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	208945	04/27/20 22:49	SRA	TAL PHX
Dissolved	Prep	200.8			208471	04/22/20 06:33	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		10	209392	04/30/20 21:30	ARE	TAL PHX
Dissolved	Prep	200.8			208471	04/22/20 06:33	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		5	209486	05/01/20 20:01	ARE	TAL PHX
Dissolved	Filtration	Filtration			208629	04/23/20 09:20	DGS	TAL PHX
Dissolved	Analysis	SM 5310B		1	208812	04/23/20 12:41	DGS	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-M53-0420

Lab Sample ID: 550-141150-3

Date Collected: 04/19/20 10:04

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	208652	04/22/20 22:59	KJS	TAL PHX
Total/NA	Analysis	300.0		200	208652	04/22/20 23:17	KJS	TAL PHX
Total/NA	Analysis	300.0		5	208874	04/25/20 06:45	NEL	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	209071	04/28/20 17:46	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	209337	04/30/20 19:38	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209651	05/05/20 13:37	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209859	05/07/20 17:39	SRA	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	208774	04/23/20 22:54	ARE	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		10	209393	04/30/20 22:24	ARE	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209501	05/04/20 17:26	ARE	TAL PHX
Total/NA	Prep	200.8			209433	05/04/20 05:28	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209504	05/04/20 18:48	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	208656	04/23/20 09:58	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	208747		YET	TAL PHX
					(Start)	04/24/20 09:09		
					(End)	04/27/20 11:55		
Total/NA	Analysis	SM 4500 H+ B		1	208783	04/24/20 15:00	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	208605	04/22/20 19:35	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	208964	04/27/20 19:46	DGS	TAL PHX

Client Sample ID: CH-CCR-M53-0420

Lab Sample ID: 550-141150-4

Date Collected: 04/19/20 10:04

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			208528	04/22/20 13:34	MGM	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	208945	04/27/20 22:53	SRA	TAL PHX
Dissolved	Prep	200.8			208471	04/22/20 06:33	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		10	209392	04/30/20 21:32	ARE	TAL PHX
Dissolved	Prep	200.8			208471	04/22/20 06:33	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		5	209486	05/01/20 20:03	ARE	TAL PHX
Dissolved	Filtration	Filtration			208900	04/27/20 14:15	DGS	TAL PHX
Dissolved	Analysis	SM 5310B		1	208963	04/27/20 17:27	DGS	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-M55-0420

Lab Sample ID: 550-141150-5

Date Collected: 04/17/20 15:56

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	208652	04/23/20 02:03	KJS	TAL PHX
Total/NA	Analysis	300.0		200	208652	04/23/20 02:22	KJS	TAL PHX
Total/NA	Analysis	300.0		5	208874	04/25/20 07:12	NEL	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	209071	04/28/20 17:50	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	209337	04/30/20 19:42	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209651	05/05/20 13:49	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209859	05/07/20 17:43	SRA	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	208774	04/23/20 22:57	ARE	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		10	209393	04/30/20 22:26	ARE	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209501	05/04/20 17:28	ARE	TAL PHX
Total/NA	Prep	200.8			209433	05/04/20 05:28	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209504	05/04/20 18:46	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	208656	04/23/20 10:07	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	208634	(Start) 04/23/20 09:33 (End) 04/24/20 10:55	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	208783	04/24/20 15:00	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	208605	04/22/20 19:43	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	208813	04/23/20 19:35	DGS	TAL PHX

Client Sample ID: CH-CCR-M55-0420

Lab Sample ID: 550-141150-6

Date Collected: 04/17/20 15:56

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			208528	04/22/20 13:34	MGM	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	208945	04/27/20 22:45	SRA	TAL PHX
Dissolved	Prep	200.8			208471	04/22/20 06:33	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		10	209392	04/30/20 21:34	ARE	TAL PHX
Dissolved	Prep	200.8			208471	04/22/20 06:33	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		5	209486	05/01/20 20:05	ARE	TAL PHX
Dissolved	Filtration	Filtration			208629	04/23/20 09:20	DGS	TAL PHX
Dissolved	Analysis	SM 5310B		1	208812	04/23/20 13:36	DGS	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-M69-0420

Lab Sample ID: 550-141150-7

Date Collected: 04/19/20 13:12

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	208652	04/23/20 02:40	KJS	TAL PHX
Total/NA	Analysis	300.0		200	208652	04/23/20 02:58	KJS	TAL PHX
Total/NA	Analysis	300.0		5	208874	04/25/20 07:39	NEL	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	209071	04/28/20 17:54	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	209337	04/30/20 19:46	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209651	05/05/20 13:53	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209859	05/07/20 17:47	SRA	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	208774	04/23/20 22:59	ARE	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		10	209393	04/30/20 22:28	ARE	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209501	05/04/20 17:30	ARE	TAL PHX
Total/NA	Prep	200.8			209433	05/04/20 05:28	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209504	05/04/20 18:53	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	208656	04/23/20 10:15	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	208747		YET	TAL PHX
					(Start)	04/24/20 09:09		
					(End)	04/27/20 11:55		
Total/NA	Analysis	SM 4500 H+ B		1	208783	04/24/20 15:00	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	208605	04/22/20 19:50	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	208964	04/27/20 20:00	DGS	TAL PHX

Client Sample ID: CH-CCR-M69-0420

Lab Sample ID: 550-141150-8

Date Collected: 04/19/20 13:12

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			208528	04/22/20 13:34	MGM	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	208945	04/27/20 22:57	SRA	TAL PHX
Dissolved	Prep	200.8			208471	04/22/20 06:33	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		10	209392	04/30/20 21:36	ARE	TAL PHX
Dissolved	Prep	200.8			208471	04/22/20 06:33	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		5	209486	05/01/20 20:07	ARE	TAL PHX
Dissolved	Filtration	Filtration			208629	04/23/20 09:20	DGS	TAL PHX
Dissolved	Analysis	SM 5310B		1	208812	04/23/20 13:50	DGS	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-M70-0420

Lab Sample ID: 550-141150-9

Date Collected: 04/19/20 14:55

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	208652	04/23/20 03:53	KJS	TAL PHX
Total/NA	Analysis	300.0		200	208652	04/23/20 04:12	KJS	TAL PHX
Total/NA	Analysis	300.0		5	208874	04/25/20 08:34	NEL	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	209071	04/28/20 17:58	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	209337	04/30/20 19:50	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209651	05/05/20 13:57	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209859	05/07/20 17:51	SRA	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	208774	04/23/20 23:01	ARE	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		10	209393	04/30/20 22:31	ARE	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209501	05/04/20 17:32	ARE	TAL PHX
Total/NA	Prep	200.8			209433	05/04/20 05:28	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209504	05/04/20 18:55	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	208656	04/23/20 10:24	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	208747		YET	TAL PHX
					(Start)	04/24/20 09:09		
					(End)	04/27/20 11:55		
Total/NA	Analysis	SM 4500 H+ B		1	208783	04/24/20 15:00	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	208605	04/22/20 19:59	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	208813	04/23/20 20:00	DGS	TAL PHX

Client Sample ID: CH-CCR-M70-0420

Lab Sample ID: 550-141150-10

Date Collected: 04/19/20 14:55

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			208528	04/22/20 13:34	MGM	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	208945	04/27/20 23:01	SRA	TAL PHX
Dissolved	Prep	200.8			208471	04/22/20 06:33	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		10	209392	04/30/20 21:38	ARE	TAL PHX
Dissolved	Prep	200.8			208471	04/22/20 06:33	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		5	209486	05/01/20 20:09	ARE	TAL PHX
Dissolved	Filtration	Filtration			208900	04/27/20 14:15	DGS	TAL PHX
Dissolved	Analysis	SM 5310B		1	208963	04/27/20 18:07	DGS	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W301-0420

Lab Sample ID: 550-141150-11

Date Collected: 04/18/20 13:37

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	208652	04/23/20 04:30	KJS	TAL PHX
Total/NA	Analysis	300.0		200	208652	04/23/20 04:49	KJS	TAL PHX
Total/NA	Analysis	300.0		5	208874	04/25/20 09:02	NEL	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	209071	04/28/20 18:10	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	209337	04/30/20 19:54	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209651	05/05/20 14:01	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209859	05/07/20 17:55	SRA	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	208774	04/23/20 23:03	ARE	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		10	209393	04/30/20 22:33	ARE	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209501	05/04/20 17:34	ARE	TAL PHX
Total/NA	Prep	200.8			209433	05/04/20 05:28	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209504	05/04/20 18:57	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	208656	04/23/20 10:33	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	208634		YET	TAL PHX
					(Start)	04/23/20 09:33		
					(End)	04/24/20 10:55		
Total/NA	Analysis	SM 4500 H+ B		1	208783	04/24/20 15:00	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	208605	04/22/20 20:06	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	208813	04/23/20 20:12	DGS	TAL PHX

Client Sample ID: CH-CCR-W301-0420

Lab Sample ID: 550-141150-12

Date Collected: 04/18/20 13:37

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			208528	04/22/20 13:34	MGM	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	208945	04/27/20 23:05	SRA	TAL PHX
Dissolved	Prep	200.8			208471	04/22/20 06:33	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		10	209392	04/30/20 21:40	ARE	TAL PHX
Dissolved	Prep	200.8			208471	04/22/20 06:33	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		5	209486	05/01/20 20:11	ARE	TAL PHX
Dissolved	Filtration	Filtration			208629	04/23/20 09:20	DGS	TAL PHX
Dissolved	Analysis	SM 5310B		1	208812	04/23/20 14:24	DGS	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W302-0420

Lab Sample ID: 550-141150-13

Date Collected: 04/17/20 09:45

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	208652	04/23/20 05:07	KJS	TAL PHX
Total/NA	Analysis	300.0		200	208652	04/23/20 05:26	KJS	TAL PHX
Total/NA	Analysis	300.0		5	208874	04/25/20 09:29	NEL	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	209071	04/28/20 18:14	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	209337	04/30/20 20:06	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209651	05/05/20 14:05	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209859	05/07/20 18:07	SRA	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	208774	04/23/20 23:05	ARE	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		10	209393	04/30/20 22:35	ARE	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209501	05/04/20 17:36	ARE	TAL PHX
Total/NA	Prep	200.8			209433	05/04/20 05:28	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209504	05/04/20 18:59	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	208656	04/23/20 10:43	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	208634		YET	TAL PHX
					(Start)	04/23/20 09:33		
					(End)	04/24/20 10:55		
Total/NA	Analysis	SM 4500 H+ B		1	208783	04/24/20 15:00	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	208605	04/22/20 20:13	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	208964	04/27/20 20:13	DGS	TAL PHX

Client Sample ID: CH-CCR-W302-0420

Lab Sample ID: 550-141150-14

Date Collected: 04/17/20 09:45

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			208528	04/22/20 13:34	MGM	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	208945	04/27/20 23:09	SRA	TAL PHX
Dissolved	Prep	200.8			208471	04/22/20 06:33	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		10	209392	04/30/20 21:47	ARE	TAL PHX
Dissolved	Prep	200.8			208471	04/22/20 06:33	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		5	209486	05/01/20 20:17	ARE	TAL PHX
Dissolved	Filtration	Filtration			208629	04/23/20 09:20	DGS	TAL PHX
Dissolved	Analysis	SM 5310B		1	208812	04/23/20 14:38	DGS	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W303-0420

Lab Sample ID: 550-141150-15

Date Collected: 04/18/20 14:49

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	208652	04/23/20 05:44	KJS	TAL PHX
Total/NA	Analysis	300.0		200	208652	04/23/20 06:02	KJS	TAL PHX
Total/NA	Analysis	300.0		5	208874	04/25/20 10:24	NEL	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	209071	04/28/20 18:18	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	209337	04/30/20 20:10	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209651	05/05/20 14:09	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209859	05/07/20 18:11	SRA	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	208774	04/23/20 23:11	ARE	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		10	209393	04/30/20 22:41	ARE	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209501	05/04/20 17:42	ARE	TAL PHX
Total/NA	Prep	200.8			209433	05/04/20 05:28	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209504	05/04/20 19:01	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	208656	04/23/20 10:51	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	208634		YET	TAL PHX
					(Start)	04/23/20 09:33		
					(End)	04/24/20 10:55		
Total/NA	Analysis	SM 4500 H+ B		1	208783	04/24/20 15:00	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	208605	04/22/20 20:20	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	208964	04/27/20 20:28	DGS	TAL PHX

Client Sample ID: CH-CCR-W303-0420

Lab Sample ID: 550-141150-16

Date Collected: 04/18/20 14:49

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			208528	04/22/20 13:34	MGM	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	208945	04/27/20 23:13	SRA	TAL PHX
Dissolved	Prep	200.8			208471	04/22/20 06:33	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		10	209392	04/30/20 21:49	ARE	TAL PHX
Dissolved	Prep	200.8			208471	04/22/20 06:33	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		5	209486	05/01/20 20:19	ARE	TAL PHX
Dissolved	Filtration	Filtration			208629	04/23/20 09:20	DGS	TAL PHX
Dissolved	Analysis	SM 5310B		1	208812	04/23/20 14:52	DGS	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W304-0420

Lab Sample ID: 550-141150-17

Date Collected: 04/17/20 11:16

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	208652	04/23/20 06:21	KJS	TAL PHX
Total/NA	Analysis	300.0		200	208652	04/23/20 06:39	KJS	TAL PHX
Total/NA	Analysis	300.0		5	209011	04/29/20 03:15	RDC	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	209071	04/28/20 18:22	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	209337	04/30/20 20:14	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209651	05/05/20 14:21	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209859	05/07/20 18:15	SRA	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	208774	04/23/20 23:13	ARE	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		10	209393	04/30/20 22:43	ARE	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209501	05/04/20 17:44	ARE	TAL PHX
Total/NA	Prep	200.8			209433	05/04/20 05:28	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209504	05/04/20 19:03	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	208656	04/23/20 11:18	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	208634		YET	TAL PHX
					(Start)	04/23/20 09:33		
					(End)	04/24/20 10:55		
Total/NA	Analysis	SM 4500 H+ B		1	208783	04/24/20 15:00	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	208605	04/22/20 20:27	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	208813	04/23/20 20:54	DGS	TAL PHX

Client Sample ID: CH-CCR-W304-0420

Lab Sample ID: 550-141150-18

Date Collected: 04/17/20 11:16

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			208528	04/22/20 13:34	MGM	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	208945	04/27/20 23:17	SRA	TAL PHX
Dissolved	Prep	200.8			208471	04/22/20 06:33	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		5	209486	05/01/20 20:21	ARE	TAL PHX
Dissolved	Filtration	Filtration			208629	04/23/20 09:20	DGS	TAL PHX
Dissolved	Analysis	SM 5310B		1	208812	04/23/20 15:05	DGS	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-FD03-0420

Lab Sample ID: 550-141150-19

Date Collected: 04/19/20 10:04

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	208652	04/23/20 07:34	KJS	TAL PHX
Total/NA	Analysis	300.0		200	208652	04/23/20 07:53	KJS	TAL PHX
Total/NA	Analysis	300.0		5	209011	04/29/20 02:20	RDC	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	209071	04/28/20 18:26	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	209337	04/30/20 20:18	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209651	05/05/20 14:25	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209859	05/07/20 18:19	SRA	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	208774	04/23/20 23:15	ARE	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		10	209393	04/30/20 22:45	ARE	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209501	05/04/20 17:46	ARE	TAL PHX
Total/NA	Prep	200.8			209433	05/04/20 05:28	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209504	05/04/20 19:09	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	208656	04/23/20 11:35	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	208747		YET	TAL PHX
					(Start)	04/24/20 09:09		
					(End)	04/27/20 11:55		
Total/NA	Analysis	SM 4500 H+ B		1	208783	04/24/20 15:00	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	208605	04/22/20 20:37	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	208964	04/27/20 20:41	DGS	TAL PHX

Client Sample ID: CH-CCR-FD03-0420

Lab Sample ID: 550-141150-20

Date Collected: 04/19/20 10:04

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			208528	04/22/20 13:34	MGM	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	209342	04/29/20 03:27	SRA	TAL PHX
Dissolved	Prep	200.7			208528	04/22/20 13:34	MGM	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	209335	04/30/20 17:37	SRA	TAL PHX
Dissolved	Prep	200.8			208471	04/22/20 06:33	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		10	209392	04/30/20 21:53	ARE	TAL PHX
Dissolved	Prep	200.8			208471	04/22/20 06:33	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		5	209486	05/01/20 20:23	ARE	TAL PHX
Dissolved	Filtration	Filtration			208900	04/27/20 14:15	DGS	TAL PHX
Dissolved	Analysis	SM 5310B		1	208963	04/27/20 18:22	DGS	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W305-0420

Lab Sample ID: 550-141150-21

Date Collected: 04/18/20 16:24

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	208652	04/23/20 08:11	KJS	TAL PHX
Total/NA	Analysis	300.0		200	208652	04/23/20 08:30	KJS	TAL PHX
Total/NA	Analysis	300.0		5	209011	04/29/20 01:53	RDC	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	209071	04/28/20 18:30	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	209337	04/30/20 20:22	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209651	05/05/20 14:29	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209859	05/07/20 18:23	SRA	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	208774	04/23/20 23:17	ARE	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		10	209393	04/30/20 22:47	ARE	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209501	05/04/20 17:48	ARE	TAL PHX
Total/NA	Prep	200.8			209433	05/04/20 05:28	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209504	05/04/20 19:11	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	208656	04/23/20 11:44	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	208634		YET	TAL PHX
					(Start)	04/23/20 09:33		
					(End)	04/24/20 10:55		
Total/NA	Analysis	SM 4500 H+ B		1	208783	04/24/20 15:00	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	208605	04/22/20 21:04	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	208813	04/23/20 21:50	DGS	TAL PHX

Client Sample ID: CH-CCR-W305-0420

Lab Sample ID: 550-141150-22

Date Collected: 04/18/20 16:24

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			208528	04/22/20 13:34	MGM	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	209342	04/29/20 03:31	SRA	TAL PHX
Dissolved	Prep	200.7			208528	04/22/20 13:34	MGM	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	209335	04/30/20 17:41	SRA	TAL PHX
Dissolved	Prep	200.8			208471	04/22/20 06:33	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		10	209392	04/30/20 21:55	ARE	TAL PHX
Dissolved	Prep	200.8			208471	04/22/20 06:33	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		5	209486	05/01/20 20:25	ARE	TAL PHX
Dissolved	Filtration	Filtration			208629	04/23/20 09:20	DGS	TAL PHX
Dissolved	Analysis	SM 5310B		1	208812	04/23/20 16:06	DGS	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W306-0420

Lab Sample ID: 550-141150-23

Date Collected: 04/19/20 08:12

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	208652	04/23/20 08:48	KJS	TAL PHX
Total/NA	Analysis	300.0		200	208652	04/23/20 09:06	KJS	TAL PHX
Total/NA	Analysis	300.0		5	209011	04/29/20 01:25	RDC	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	209071	04/28/20 18:34	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	209337	04/30/20 20:26	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209651	05/05/20 14:33	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209859	05/07/20 18:27	SRA	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		10	209393	04/30/20 22:49	ARE	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209501	05/04/20 17:51	ARE	TAL PHX
Total/NA	Prep	200.8			209433	05/04/20 05:28	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209504	05/04/20 19:13	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	208656	04/23/20 11:52	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	208747		YET	TAL PHX
					(Start)	04/24/20 09:09		
					(End)	04/27/20 11:55		
Total/NA	Analysis	SM 4500 H+ B		1	208783	04/24/20 15:00	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	208605	04/22/20 21:11	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	208813	04/23/20 22:03	DGS	TAL PHX

Client Sample ID: CH-CCR-W306-0420

Lab Sample ID: 550-141150-24

Date Collected: 04/19/20 08:12

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			208528	04/22/20 13:34	MGM	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	209342	04/29/20 03:35	SRA	TAL PHX
Dissolved	Prep	200.7			208528	04/22/20 13:34	MGM	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	209335	04/30/20 17:45	SRA	TAL PHX
Dissolved	Prep	200.8			208471	04/22/20 06:33	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		10	209392	04/30/20 21:57	ARE	TAL PHX
Dissolved	Prep	200.8			208471	04/22/20 06:33	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		5	209486	05/01/20 20:28	ARE	TAL PHX
Dissolved	Filtration	Filtration			208629	04/23/20 09:20	DGS	TAL PHX
Dissolved	Analysis	SM 5310B		1	208812	04/23/20 16:19	DGS	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W307-0420

Lab Sample ID: 550-141150-25

Date Collected: 04/17/20 12:27

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	208652	04/23/20 09:25	KJS	TAL PHX
Total/NA	Analysis	300.0		200	208652	04/23/20 09:43	KJS	TAL PHX
Total/NA	Analysis	300.0		5	209011	04/29/20 00:31	RDC	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	209071	04/28/20 18:38	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	209337	04/30/20 20:30	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209651	05/05/20 14:37	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209859	05/07/20 18:31	SRA	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	208774	04/23/20 23:22	ARE	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		10	209393	04/30/20 22:51	ARE	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209501	05/04/20 17:53	ARE	TAL PHX
Total/NA	Prep	200.8			209433	05/04/20 05:28	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209504	05/04/20 19:15	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	208656	04/23/20 12:01	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	208634		YET	TAL PHX
					(Start)	04/23/20 09:33		
					(End)	04/24/20 10:55		
Total/NA	Analysis	SM 4500 H+ B		1	208783	04/24/20 15:00	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	208605	04/22/20 21:18	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	209233	04/29/20 14:55	DGS	TAL PHX

Client Sample ID: CH-CCR-W307-0420

Lab Sample ID: 550-141150-26

Date Collected: 04/17/20 12:27

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			208528	04/22/20 13:34	MGM	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	209342	04/29/20 03:39	SRA	TAL PHX
Dissolved	Prep	200.7			208528	04/22/20 13:34	MGM	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	209335	04/30/20 17:49	SRA	TAL PHX
Dissolved	Prep	200.8			208471	04/22/20 06:33	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		10	209392	04/30/20 21:59	ARE	TAL PHX
Dissolved	Prep	200.8			208471	04/22/20 06:33	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		5	209486	05/01/20 20:30	ARE	TAL PHX
Dissolved	Filtration	Filtration			208629	04/23/20 09:20	DGS	TAL PHX
Dissolved	Analysis	SM 5310B		1	208812	04/23/20 16:31	DGS	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W308-0420

Lab Sample ID: 550-141150-27

Date Collected: 04/17/20 14:18

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	208652	04/23/20 10:02	KJS	TAL PHX
Total/NA	Analysis	300.0		200	208652	04/23/20 10:20	KJS	TAL PHX
Total/NA	Analysis	300.0		5	209011	04/29/20 00:03	RDC	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	209071	04/28/20 18:42	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	209337	04/30/20 20:34	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209651	05/05/20 14:41	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209859	05/07/20 18:35	SRA	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		10	209393	04/30/20 22:53	ARE	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209501	05/04/20 17:55	ARE	TAL PHX
Total/NA	Prep	200.8			209433	05/04/20 05:28	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209504	05/04/20 19:17	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	208656	04/23/20 12:10	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	208634		YET	TAL PHX
					(Start)	04/23/20 09:33		
					(End)	04/24/20 10:55		
Total/NA	Analysis	SM 4500 H+ B		1	208783	04/24/20 15:00	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	208605	04/22/20 21:25	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	208813	04/23/20 22:30	DGS	TAL PHX

Client Sample ID: CH-CCR-W308-0420

Lab Sample ID: 550-141150-28

Date Collected: 04/17/20 14:18

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			208528	04/22/20 13:34	MGM	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	209342	04/29/20 03:43	SRA	TAL PHX
Dissolved	Prep	200.7			208528	04/22/20 13:34	MGM	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	209335	04/30/20 17:53	SRA	TAL PHX
Dissolved	Prep	200.8			208471	04/22/20 06:33	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		5	209486	05/01/20 20:32	ARE	TAL PHX
Dissolved	Filtration	Filtration			208629	04/23/20 09:20	DGS	TAL PHX
Dissolved	Analysis	SM 5310B		1	208812	04/23/20 16:44	DGS	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W314-0420

Lab Sample ID: 550-141150-29

Date Collected: 04/19/20 16:09

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	208652	04/23/20 11:15	KJS	TAL PHX
Total/NA	Analysis	300.0		200	208652	04/23/20 11:34	KJS	TAL PHX
Total/NA	Analysis	300.0		5	209011	04/28/20 23:36	RDC	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	209071	04/28/20 18:46	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	209337	04/30/20 20:38	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209651	05/05/20 14:45	SRA	TAL PHX
Total/NA	Prep	200.7			208529	04/22/20 13:37	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	209859	05/07/20 18:39	SRA	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		10	209393	04/30/20 22:56	ARE	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209501	05/04/20 17:57	ARE	TAL PHX
Total/NA	Prep	200.8			209433	05/04/20 05:28	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209504	05/04/20 19:20	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	208656	04/23/20 12:18	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	208747		YET	TAL PHX
					(Start)	04/24/20 09:09		
					(End)	04/27/20 11:55		
Total/NA	Analysis	SM 4500 H+ B		1	208901	04/27/20 13:46	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	208605	04/22/20 21:32	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	208813	04/23/20 22:46	DGS	TAL PHX

Client Sample ID: CH-CCR-W314-0420

Lab Sample ID: 550-141150-30

Date Collected: 04/19/20 16:09

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			208528	04/22/20 13:34	MGM	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	209342	04/29/20 03:47	SRA	TAL PHX
Dissolved	Prep	200.7			208528	04/22/20 13:34	MGM	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	209335	04/30/20 18:05	SRA	TAL PHX
Dissolved	Prep	200.8			208471	04/22/20 06:33	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		10	209392	04/30/20 22:03	ARE	TAL PHX
Dissolved	Prep	200.8			208471	04/22/20 06:33	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		5	209486	05/01/20 20:34	ARE	TAL PHX
Dissolved	Filtration	Filtration			208629	04/23/20 09:20	DGS	TAL PHX
Dissolved	Analysis	SM 5310B		1	208812	04/23/20 16:58	DGS	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W317-0420

Lab Sample ID: 550-141150-31

Date Collected: 04/16/20 16:48

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	208652	04/23/20 11:52	KJS	TAL PHX
Total/NA	Analysis	300.0		200	208652	04/23/20 12:10	KJS	TAL PHX
Total/NA	Prep	200.7			208528	04/22/20 13:34	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	209342	04/29/20 03:59	SRA	TAL PHX
Total/NA	Prep	200.7			208528	04/22/20 13:34	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	209335	04/30/20 18:17	SRA	TAL PHX
Total/NA	Prep	200.7			208528	04/22/20 13:34	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	209650	05/05/20 12:29	SRA	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	208774	04/23/20 23:28	ARE	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		10	209393	04/30/20 22:58	ARE	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209501	05/04/20 17:59	ARE	TAL PHX
Total/NA	Prep	200.8			209433	05/04/20 05:28	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209504	05/04/20 19:22	ARE	TAL PHX
Total/NA	Analysis	SM 2540C		1	208634		YET	TAL PHX
					(Start)	04/23/20 09:33		
					(End)	04/24/20 10:55		
Total/NA	Analysis	SM 4500 H+ B		1	208901	04/27/20 13:46	MRR	TAL PHX

Client Sample ID: CH-CCR-FD04-0420

Lab Sample ID: 550-141150-32

Date Collected: 04/19/20 08:12

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	209282	04/30/20 21:14	NEL	TAL PHX
Total/NA	Analysis	300.0		2	209010	04/29/20 01:35	RDC	TAL PHX
Total/NA	Analysis	300.0		200	209010	04/29/20 02:03	RDC	TAL PHX
Total/NA	Prep	200.7			208528	04/22/20 13:34	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	209342	04/29/20 04:03	SRA	TAL PHX
Total/NA	Prep	200.7			208528	04/22/20 13:34	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	209335	04/30/20 16:59	SRA	TAL PHX
Total/NA	Prep	200.7			208528	04/22/20 13:34	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	209335	04/30/20 18:21	SRA	TAL PHX
Total/NA	Prep	200.7			208528	04/22/20 13:34	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	209650	05/05/20 12:33	SRA	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		10	209393	04/30/20 23:00	ARE	TAL PHX
Total/NA	Prep	200.8			208488	04/22/20 06:44	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209501	05/04/20 18:01	ARE	TAL PHX
Total/NA	Prep	200.8			209433	05/04/20 05:28	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		5	209504	05/04/20 19:24	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	208656	04/23/20 12:26	DGS	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-FD04-0420

Lab Sample ID: 550-141150-32

Date Collected: 04/19/20 08:12

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	208747		YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	208901	04/27/20 13:46	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	208605	04/22/20 21:38	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	208813	04/23/20 23:02	DGS	TAL PHX

Client Sample ID: CH-CCR-FD04-0420

Lab Sample ID: 550-141150-33

Date Collected: 04/19/20 08:12

Matrix: Water

Date Received: 04/21/20 14:51

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			208528	04/22/20 13:34	MGM	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	209342	04/29/20 03:51	SRA	TAL PHX
Dissolved	Prep	200.7			208528	04/22/20 13:34	MGM	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	209335	04/30/20 18:09	SRA	TAL PHX
Dissolved	Prep	200.8			208471	04/22/20 06:33	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		10	209392	04/30/20 22:05	ARE	TAL PHX
Dissolved	Prep	200.8			208471	04/22/20 06:33	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		5	209486	05/01/20 20:36	ARE	TAL PHX
Dissolved	Filtration	Filtration			208629	04/23/20 09:20	DGS	TAL PHX
Dissolved	Analysis	SM 5310B		1	208812	04/23/20 17:13	DGS	TAL PHX

Laboratory References:

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Laboratory: Eurofins TestAmerica, Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-08-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
200.8 LL	200.8	Water	Molybdenum
SM 2320B		Water	Alkalinity, Phenolphthalein
SM 2540C		Water	Total Dissolved Solids
SM 4500 H+ B		Water	Temperature
SM 5310B		Water	Dissolved Organic Carbon - Quad

Method Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141150-1
SDG: APS Cholla Power Plant (BAP)

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PHX
200.7 Rev 4.4	Metals (ICP)	40CFR136A	TAL PHX
200.8 LL	Metals (ICP/MS)	EPA	TAL PHX
SM 2320B	Alkalinity	SM	TAL PHX
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PHX
SM 4500 H+ B	pH	SM	TAL PHX
SM 4500 NH3 D	Ammonia	SM	TAL PHX
SM 5310B	Organic Carbon, Dissolved (DOC)	SM	TAL PHX
SM 5310B	Organic Carbon, Total (TOC)	SM	TAL PHX
200.7	Preparation, Total Metals	EPA	TAL PHX
200.8	Preparation, Total Metals	EPA	TAL PHX
Filtration	Sample Filtration	None	TAL PHX

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

None = None

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

4625 E Cotton Center Blvd

Suite 189

Phoenix, AZ 85040

phone 602.437.3340 fax 602.454.9303

141150

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other: CCR

Client Contact

Natalie Chrisman

Lab Contact: Ken Baker

Date: 04/21/20

COC No: 1 of 2 COCs

Arizona Public Service
4801 Cholla Lake Rd
Joseph City, AZ 86032

Analysis Turnaround Time
☒ CALENDAR DAYS ☒ WORKING DAYS
TAT if different from Below

Date: 04/21/20

Sampler:
Walk-in Client:
Lab Sampling:

Phone (928) 587-0319

☒ 2 weeks
☐ 1 week
☐ 2 days
☐ 1 day

Carrier: 141150

Job / SDG No.:

Project Name: CCR Groundwater Monitoring

Site: APS Cholla Power Plant (BAP)

SM 4500-HB (pH)
SM 2540C (TDS)
SM 5310B (TOC, DOC)
SM 4500D (NH3 as N)
SM 4500E/B (NO3+NO2 as N)
SM 2320B (CO3 Alkalinity as CaCO3, HCO3 Alkalinity as CaCO3)

Sample Specific Notes:

PO #

Sample Identification

Sample Date

Sample Time

Sample Type (C-Comp, G-Grab)

Matrix

of Cont.

Filtered Sample (Y / N)

Perform MS / MSD (Y / N)

EPA 300.0 (Cl, F, SO4)

EPA 200.7 - Totals (B, Ca, Be, Li, Fe, Mn, K, Mg, Na)

EPA 200.7 - Dissolved (Fe, Mn)

EPA 200.8 - Totals (As, Ba, Cd, Co, Cr, Pb, Mo, Se, Ti)

EPA 200.8 - Dissolved (As, Co)

CH-CCR-M52-0420

4/19/20 11:52

G

W

X

X

X

X

X

X

X

X

X

CH-CCR-M53-0420

4/19/20 10:04

G

W

X

X

X

X

X

X

X

X

X

CH-CCR-M55-0420

4/17/20 15:56

G

W

X

X

X

X

X

X

X

X

X

CH-CCR-M69-0420

4/19/20 13:12

G

W

X

X

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X

X

CH-CCR-M70-0420

4/19/20 14:55

G

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CH-CCR-W301-0420

4/18/20 13:51

G

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CH-CCR-W302-0420

4/17/20 05:45

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CH-CCR-W303-0420

4/18/20 14:49

G

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X

CH-CCR-W304-0420

4/17/20 11:16

G

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X

X

X

X

CH-CCR-FD03-0420

4/19/20 10:04

G

W

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X

X

X

Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other

Sample Disposal (A fee may be assessed if sam)

1 4 4 4 4 4 1 1 2 3 3 1

550-141150 Chain of Custody

Barcode

550-141150 Chain of Custody

550-141150 Chain of Custody

550-141150 Chain of Custody

550-141150 Chain of Custody

550-141150 Chain of Custody

550-141150 Chain of Custody

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Special Instructions/QC Requirements & Comments:

Perform Method 200.8 with collision cell; * As marked on the bottle, perform dissolved analyses with sample provided in bottles marked 'field filtered'

3.7°C, 3.2°C, 9.8°C, 1.7°C, 2.0°C

3.7°C, 3.2°C, 9.8°C, 1.7°C, 2.0°C

3.7°C, 3.2°C, 9.8°C, 1.7°C, 2.0°C

3.7°C, 3.2°C, 9.8°C, 1.7°C, 2.0°C

3.7°C, 3.2°C, 9.8°C, 1.7°C, 2.0°C

3.7°C, 3.2°C, 9.8°C, 1.7°C, 2.0°C

3.7°C, 3.2°C, 9.8°C, 1.7°C, 2.0°C

3.7°C, 3.2°C, 9.8°C, 1.7°C, 2.0°C

Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Return to Client ☐ Disposal by Lab ☒ Archive for _____ Months

Return to Client ☐ Disposal by Lab ☒ Archive for _____ Months

Return to Client ☐ Disposal by Lab ☒ Archive for _____ Months

Return to Client ☐ Disposal by Lab ☒ Archive for _____ Months

Return to Client ☐ Disposal by Lab ☒ Archive for _____ Months

Return to Client ☐ Disposal by Lab ☒ Archive for _____ Months

Return to Client ☐ Disposal by Lab ☒ Archive for _____ Months

Return to Client ☐ Disposal by Lab ☒ Archive for _____ Months

Return to Client ☐ Disposal by Lab ☒ Archive for _____ Months

Return to Client ☐ Disposal by Lab ☒ Archive for _____ Months

Custody Seal Intact: ☐ Yes ☐ No

Custody Seal No.:

Cooler Temp. (°C): Obs'd:

Therm ID No.:

Relinquished by: _____

Relinquished by: _____

Relinquished by: _____

Relinquished by: _____

Relinquished by: _____

Relinquished by: _____

Relinquished by: _____

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Relinquished by: _____

Relinquished by: _____

Relinquished by: _____

Relinquished by: _____

Relinquished by: _____

Relinquished by: _____

Relinquished by: _____

TestAmerica Phoenix

4625 E Cotton Center Blvd

Suite 189

Phoenix, AZ 85040

phone 602.437.3340 fax 602.454.9303

Chain of Custody Record

141150

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other: CCR

Client Contact

Arizona Public Service

4801 Cholla Lake Rd

Joseph City, AZ 86032

(928) 587-0319 Phone

FAX

Project Name: CCR Groundwater Monitoring

Site: APS Cholla Power Plant (BAP)

PO #

Natalie Chrisman

(602) 250-3608

Analysis Turnaround Time

☒ CALENDAR DAYS ☒ WORKING DAYS

TAT if different from Below

☒ 2 weeks

☐ 1 week

☐ 2 days

☐ 1 day

Jim Edwards / (928) 288-1241

Lab Contact: Ken Baker

Date: 04/21/20

Carrier:

COC No: 2 of 2 COCs

Sampler:

For Lab Use Only:

Walk-in Client:

Lab Sampling:

Job / SDG No.:

Sample Specific Notes:

CH-CCR-W305-0420

CH-CCR-W306-0420

CH-CCR-W307-0420

CH-CCR-W308-0420

CH-CCR-W309-0420

CH-CCR-W314-0420

CH-CCR-W317-0420

CH-CCR-FD04-0420

CH-CCR-W309-0420

CH-CCR-W314-0420

CH-CCR-W317-0420

CH-CCR-FD04-0420

CH-CCR-W309-0420

CH-CCR-W314-0420

CH-CCR-W317-0420

CH-CCR-FD04-0420

CH-CCR-W309-0420

CH-CCR-W314-0420

CH-CCR-W317-0420

CH-CCR-FD04-0420

CH-CCR-W309-0420

CH-CCR-W314-0420

CH-CCR-W317-0420

CH-CCR-FD04-0420

CH-CCR-W309-0420

CH-CCR-W314-0420

CH-CCR-W317-0420

CH-CCR-FD04-0420

CH-CCR-W309-0420

CH-CCR-W314-0420

CH-CCR-W317-0420

CH-CCR-FD04-0420

Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Special Instructions/QC Requirements & Comments:

Perform Method 200.8 with collision cell. * As marked on the bottle, perform dissolved analyses with sample provided in bottles marked 'field filtered'

Custody Seals Intact: ☐ Yes ☐ No

Relinquished by: *Isaac Torres*

Relinquished by: *Isaac Torres*

Relinquished by: *Isaac Torres*

Custody Seal No.:

Company:

Company:

Company:

Date/Time:

Date/Time:

Date/Time:

Date/Time:

Received by:

Received by:

Received by:

Received by:

Cooler Temp. (°C): Obsd:

Cor'd:

Therm ID No.:

Therm ID No.:

Received by:

Received by:

Received by:

Received by:

Received in Laboratory by:

Received in Laboratory by:

Received in Laboratory by:

Received in Laboratory by:

Date/Time:

Date/Time:

Date/Time:

Date/Time:

Company:

Company:

Company:

Company:

Login Sample Receipt Checklist

Client: Arizona Public Service Company

Job Number: 550-141150-1

SDG Number: APS Cholla Power Plant (BAP)

Login Number: 141150

List Number: 1

Creator: Maycock, Lisa

List Source: Eurofins TestAmerica, Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

ANALYTICAL REPORT

Eurofins TestAmerica, Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-141924-1

Laboratory SDG: APS Cholla Power Plant (BAM)
Client Project/Site: CCR Groundwater Monitoring

For:

Arizona Public Service Company
PO BOX 188, Ste. 4458
Joseph City, Arizona 86032

Attn: Natalie Chrisman



Authorized for release by:
5/22/2020 3:50:16 PM

Ken Baker, Project Manager II
(602)659-7624
ken.baker@testamericainc.com

LINKS

Review your project
results through

TotalAccess

Have a Question?



Visit us at:

www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Sample Summary	5
Detection Summary	6
Client Sample Results	8
QC Sample Results	10
QC Association Summary	14
Lab Chronicle	16
Certification Summary	18
Method Summary	19
Chain of Custody	20
Receipt Checklists	21



Definitions/Glossary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141924-1
SDG: APS Cholla Power Plant (BAM)

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.

Metals

Qualifier	Qualifier Description
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.

General Chemistry

Qualifier	Qualifier Description
D2	Sample required dilution due to high concentration of analyte.
H5	This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141924-1
SDG: APS Cholla Power Plant (BAM)

Job ID: 550-141924-1

Laboratory: Eurofins TestAmerica, Phoenix

Narrative

Job Narrative
550-141924-1

Comments

No additional comments.

Receipt

The samples were received on 5/8/2020 12:35 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.6° C.

HPLC/IC

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141924-1
SDG: APS Cholla Power Plant (BAM)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
550-141924-1	CH-CCR-M54-0520	Water	05/07/20 14:38	05/08/20 12:35	
550-141924-2	CH-CCR-M59-0520	Water	05/07/20 11:13	05/08/20 12:35	
550-141924-3	CH-CCR-M60-0520	Water	05/07/20 13:36	05/08/20 12:35	
550-141924-4	CH-CCR-M61-0520	Water	05/07/20 12:18	05/08/20 12:35	
550-141924-5	CH-CCR-FD01-0520	Water	05/07/20 12:18	05/08/20 12:35	

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141924-1
SDG: APS Cholla Power Plant (BAM)

Client Sample ID: CH-CCR-M54-0520

Lab Sample ID: 550-141924-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1400	D2	400	mg/L	200		300.0	Total/NA
Fluoride	1.8	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	360	D1	4.0	mg/L	2		300.0	Total/NA
Boron	0.51		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	98		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Total Dissolved Solids	3100	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.6	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	15.3	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: CH-CCR-M59-0520

Lab Sample ID: 550-141924-2

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1200	D2	400	mg/L	200		300.0	Total/NA
Fluoride	1.8	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	350	D1	4.0	mg/L	2		300.0	Total/NA
Boron	0.50		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	89		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Total Dissolved Solids	2800	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.7	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	15.1	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: CH-CCR-M60-0520

Lab Sample ID: 550-141924-3

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1200	D2	400	mg/L	200		300.0	Total/NA
Fluoride	1.7	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	350	D1	4.0	mg/L	2		300.0	Total/NA
Boron	0.50		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	88		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Total Dissolved Solids	2900	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.7	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	15.3	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: CH-CCR-M61-0520

Lab Sample ID: 550-141924-4

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1300	D2	200	mg/L	100		300.0	Total/NA
Fluoride	1.6	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	350	D1 M3	4.0	mg/L	2		300.0	Total/NA
Boron	0.51		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	93		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Total Dissolved Solids	3000	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.7	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	16.0	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: CH-CCR-FD01-0520

Lab Sample ID: 550-141924-5

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1200	D2	400	mg/L	200		300.0	Total/NA
Fluoride	1.7	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	350	D1	4.0	mg/L	2		300.0	Total/NA
Boron	0.51		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	93		2.0	mg/L	1		200.7 Rev 4.4	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141924-1
SDG: APS Cholla Power Plant (BAM)

Client Sample ID: CH-CCR-FD01-0520 (Continued)

Lab Sample ID: 550-141924-5

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	2900	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.6	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	8.6	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141924-1
SDG: APS Cholla Power Plant (BAM)

Client Sample ID: CH-CCR-M54-0520

Lab Sample ID: 550-141924-1

Date Collected: 05/07/20 14:38

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1400	D2	400	mg/L			05/11/20 17:07	200
Fluoride	1.8	D1	0.80	mg/L			05/11/20 16:40	2
Sulfate	360	D1	4.0	mg/L			05/11/20 16:40	2

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.51		0.050	mg/L		05/11/20 05:12	05/19/20 01:23	1
Calcium	98		2.0	mg/L		05/11/20 05:12	05/19/20 01:23	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3100	D2	100	mg/L			05/11/20 11:20	1
pH	7.6	H5	1.7	SU			05/14/20 13:35	1
Temperature	15.3	H5	0.1	Degrees C			05/14/20 13:35	1

Client Sample ID: CH-CCR-M59-0520

Lab Sample ID: 550-141924-2

Date Collected: 05/07/20 11:13

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1200	D2	400	mg/L			05/11/20 18:02	200
Fluoride	1.8	D1	0.80	mg/L			05/11/20 17:35	2
Sulfate	350	D1	4.0	mg/L			05/11/20 17:35	2

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.50		0.050	mg/L		05/11/20 05:12	05/19/20 00:07	1
Calcium	89		2.0	mg/L		05/11/20 05:12	05/19/20 00:07	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2800	D2	100	mg/L			05/11/20 11:20	1
pH	7.7	H5	1.7	SU			05/14/20 13:35	1
Temperature	15.1	H5	0.1	Degrees C			05/14/20 13:35	1

Client Sample ID: CH-CCR-M60-0520

Lab Sample ID: 550-141924-3

Date Collected: 05/07/20 13:36

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1200	D2	400	mg/L			05/11/20 18:57	200
Fluoride	1.7	D1	0.80	mg/L			05/11/20 18:30	2
Sulfate	350	D1	4.0	mg/L			05/11/20 18:30	2

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.50		0.050	mg/L		05/11/20 05:12	05/19/20 00:11	1
Calcium	88		2.0	mg/L		05/11/20 05:12	05/19/20 00:11	1

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141924-1
SDG: APS Cholla Power Plant (BAM)

Client Sample ID: CH-CCR-M60-0520

Lab Sample ID: 550-141924-3

Date Collected: 05/07/20 13:36

Matrix: Water

Date Received: 05/08/20 12:35

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2900	D2	100	mg/L			05/12/20 11:12	1
pH	7.7	H5	1.7	SU			05/14/20 13:35	1
Temperature	15.3	H5	0.1	Degrees C			05/14/20 13:35	1

Client Sample ID: CH-CCR-M61-0520

Lab Sample ID: 550-141924-4

Date Collected: 05/07/20 12:18

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1300	D2	200	mg/L			05/12/20 10:20	100
Fluoride	1.6	D1	0.80	mg/L			05/11/20 19:24	2
Sulfate	350	D1 M3	4.0	mg/L			05/11/20 19:24	2

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.51		0.050	mg/L		05/11/20 05:12	05/18/20 23:51	1
Calcium	93		2.0	mg/L		05/11/20 05:12	05/18/20 23:51	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3000	D2	100	mg/L			05/11/20 11:20	1
pH	7.7	H5	1.7	SU			05/14/20 13:35	1
Temperature	16.0	H5	0.1	Degrees C			05/14/20 13:35	1

Client Sample ID: CH-CCR-FD01-0520

Lab Sample ID: 550-141924-5

Date Collected: 05/07/20 12:18

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1200	D2	400	mg/L			05/11/20 23:31	200
Fluoride	1.7	D1	0.80	mg/L			05/11/20 23:04	2
Sulfate	350	D1	4.0	mg/L			05/11/20 23:04	2

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.51		0.050	mg/L		05/11/20 05:12	05/19/20 00:15	1
Calcium	93		2.0	mg/L		05/11/20 05:12	05/19/20 00:15	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2900	D2	100	mg/L			05/12/20 11:12	1
pH	7.6	H5	1.7	SU			05/21/20 16:30	1
Temperature	8.6	H5	0.1	Degrees C			05/21/20 16:30	1

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141924-1
SDG: APS Cholla Power Plant (BAM)

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-210078/2

Matrix: Water

Analysis Batch: 210078

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0	mg/L			05/11/20 14:23	1
Fluoride	ND		0.40	mg/L			05/11/20 14:23	1
Sulfate	ND		2.0	mg/L			05/11/20 14:23	1

Lab Sample ID: LCS 550-210078/5

Matrix: Water

Analysis Batch: 210078

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	20.9		mg/L		105	90 - 110
Fluoride	4.00	4.17		mg/L		104	90 - 110
Sulfate	20.0	20.8		mg/L		104	90 - 110

Lab Sample ID: LCSD 550-210078/6

Matrix: Water

Analysis Batch: 210078

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	20.9		mg/L		105	90 - 110	0	20
Fluoride	4.00	4.17		mg/L		104	90 - 110	0	20
Sulfate	20.0	20.8		mg/L		104	90 - 110	0	20

Lab Sample ID: 550-141924-4 MS

Matrix: Water

Analysis Batch: 210078

Client Sample ID: CH-CCR-M61-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	1.6	D1	8.00	9.96	D1	mg/L		104	80 - 120
Sulfate	350	D1 M3	40.0	391	D1 M3	mg/L		95	80 - 120

Lab Sample ID: 550-141924-4 MS

Matrix: Water

Analysis Batch: 210078

Client Sample ID: CH-CCR-M61-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	1300	D2	2000	3600	D2	mg/L		114	80 - 120

Lab Sample ID: 550-141924-4 MSD

Matrix: Water

Analysis Batch: 210078

Client Sample ID: CH-CCR-M61-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	1.6	D1	8.00	10.1	D1	mg/L		106	80 - 120	1	20
Sulfate	350	D1 M3	40.0	390	D1 M3	mg/L		92	80 - 120	0	20

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141924-1
SDG: APS Cholla Power Plant (BAM)

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-141924-4 MSD

Matrix: Water

Analysis Batch: 210078

Client Sample ID: CH-CCR-M61-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	1300	D2	2000	3600	D2	mg/L		114	80 - 120	0	20

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 550-209972/1-A

Matrix: Water

Analysis Batch: 210622

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 209972

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.050	mg/L		05/11/20 05:12	05/18/20 23:31	1
Calcium	ND		2.0	mg/L		05/11/20 05:12	05/18/20 23:31	1

Lab Sample ID: LCS 550-209972/2-A

Matrix: Water

Analysis Batch: 210622

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 209972

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	0.979		mg/L		98	85 - 115
Calcium	21.0	22.4		mg/L		107	85 - 115

Lab Sample ID: LCSD 550-209972/3-A

Matrix: Water

Analysis Batch: 210622

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 209972

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	1.00	0.989		mg/L		99	85 - 115	1	20
Calcium	21.0	21.6		mg/L		103	85 - 115	4	20

Lab Sample ID: 550-141924-4 MS

Matrix: Water

Analysis Batch: 210622

Client Sample ID: CH-CCR-M61-0520

Prep Type: Total/NA

Prep Batch: 209972

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	0.51		1.00	1.51		mg/L		100	70 - 130
Calcium	93		21.0	109	M3	mg/L		77	70 - 130

Lab Sample ID: 550-141924-4 MSD

Matrix: Water

Analysis Batch: 210622

Client Sample ID: CH-CCR-M61-0520

Prep Type: Total/NA

Prep Batch: 209972

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	0.51		1.00	1.54		mg/L		103	70 - 130	2	20
Calcium	93		21.0	111	M3	mg/L		86	70 - 130	2	20

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141924-1
SDG: APS Cholla Power Plant (BAM)

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 550-210029/1

Matrix: Water

Analysis Batch: 210029

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		20	mg/L			05/11/20 11:20	1

Lab Sample ID: LCS 550-210029/2

Matrix: Water

Analysis Batch: 210029

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	980		mg/L		98	90 - 110

Lab Sample ID: LCSD 550-210029/3

Matrix: Water

Analysis Batch: 210029

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	1000	990		mg/L		99	90 - 110	1	10

Lab Sample ID: 550-141924-4 DU

Matrix: Water

Analysis Batch: 210029

Client Sample ID: CH-CCR-M61-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	3000	D2	2960	D2	mg/L		0	10

Lab Sample ID: MB 550-210140/1

Matrix: Water

Analysis Batch: 210140

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		20	mg/L			05/12/20 11:12	1

Lab Sample ID: LCS 550-210140/2

Matrix: Water

Analysis Batch: 210140

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	976		mg/L		98	90 - 110

Lab Sample ID: LCSD 550-210140/3

Matrix: Water

Analysis Batch: 210140

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	1000	974		mg/L		97	90 - 110	0	10

Lab Sample ID: 550-141762-E-1 DU

Matrix: Water

Analysis Batch: 210140

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	1800		1860		mg/L		0.9	10

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141924-1
SDG: APS Cholla Power Plant (BAM)

Method: SM 4500 H+ B - pH

Lab Sample ID: LCSSRM 550-210392/1

Matrix: Water

Analysis Batch: 210392

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.1		SU		100.7	98.5 - 101.5

Lab Sample ID: LCSSRM 550-210392/11

Matrix: Water

Analysis Batch: 210392

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100.1	98.5 - 101.5

Lab Sample ID: 550-141924-4 DU

Matrix: Water

Analysis Batch: 210392

Client Sample ID: CH-CCR-M61-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.7	H5	7.7	H5	SU		0.1	5
Temperature	16.0	H5	15.9	H5	Degrees C		0.6	

Lab Sample ID: LCSSRM 550-210921/1

Matrix: Water

Analysis Batch: 210921

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		99.4	98.5 - 101.5

Lab Sample ID: LCSSRM 550-210921/13

Matrix: Water

Analysis Batch: 210921

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.1		SU		101.3	98.5 - 101.5

Lab Sample ID: 550-141925-B-2 DU

Matrix: Water

Analysis Batch: 210921

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.4	H5	7.4	H5	SU		0.3	5
Temperature	7.8	H5	8.3	H5	Degrees C		6	

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141924-1
SDG: APS Cholla Power Plant (BAM)

HPLC/IC

Analysis Batch: 210078

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141924-1	CH-CCR-M54-0520	Total/NA	Water	300.0	
550-141924-1	CH-CCR-M54-0520	Total/NA	Water	300.0	
550-141924-2	CH-CCR-M59-0520	Total/NA	Water	300.0	
550-141924-2	CH-CCR-M59-0520	Total/NA	Water	300.0	
550-141924-3	CH-CCR-M60-0520	Total/NA	Water	300.0	
550-141924-3	CH-CCR-M60-0520	Total/NA	Water	300.0	
550-141924-4	CH-CCR-M61-0520	Total/NA	Water	300.0	
550-141924-4	CH-CCR-M61-0520	Total/NA	Water	300.0	
550-141924-5	CH-CCR-FD01-0520	Total/NA	Water	300.0	
550-141924-5	CH-CCR-FD01-0520	Total/NA	Water	300.0	
MB 550-210078/2	Method Blank	Total/NA	Water	300.0	
LCS 550-210078/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-210078/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-141924-4 MS	CH-CCR-M61-0520	Total/NA	Water	300.0	
550-141924-4 MS	CH-CCR-M61-0520	Total/NA	Water	300.0	
550-141924-4 MSD	CH-CCR-M61-0520	Total/NA	Water	300.0	
550-141924-4 MSD	CH-CCR-M61-0520	Total/NA	Water	300.0	

Metals

Prep Batch: 209972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141924-1	CH-CCR-M54-0520	Total/NA	Water	200.7	
550-141924-2	CH-CCR-M59-0520	Total/NA	Water	200.7	
550-141924-3	CH-CCR-M60-0520	Total/NA	Water	200.7	
550-141924-4	CH-CCR-M61-0520	Total/NA	Water	200.7	
550-141924-5	CH-CCR-FD01-0520	Total/NA	Water	200.7	
MB 550-209972/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-209972/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-209972/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-141924-4 MS	CH-CCR-M61-0520	Total/NA	Water	200.7	
550-141924-4 MSD	CH-CCR-M61-0520	Total/NA	Water	200.7	

Analysis Batch: 210622

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141924-1	CH-CCR-M54-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141924-2	CH-CCR-M59-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141924-3	CH-CCR-M60-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141924-4	CH-CCR-M61-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141924-5	CH-CCR-FD01-0520	Total/NA	Water	200.7 Rev 4.4	209972
MB 550-209972/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	209972
LCS 550-209972/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	209972
LCSD 550-209972/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	209972
550-141924-4 MS	CH-CCR-M61-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141924-4 MSD	CH-CCR-M61-0520	Total/NA	Water	200.7 Rev 4.4	209972

General Chemistry

Analysis Batch: 210029

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141924-1	CH-CCR-M54-0520	Total/NA	Water	SM 2540C	
550-141924-2	CH-CCR-M59-0520	Total/NA	Water	SM 2540C	

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QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141924-1
SDG: APS Cholla Power Plant (BAM)

General Chemistry (Continued)

Analysis Batch: 210029 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141924-4	CH-CCR-M61-0520	Total/NA	Water	SM 2540C	
MB 550-210029/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-210029/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-210029/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-141924-4 DU	CH-CCR-M61-0520	Total/NA	Water	SM 2540C	

Analysis Batch: 210140

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141924-3	CH-CCR-M60-0520	Total/NA	Water	SM 2540C	
550-141924-5	CH-CCR-FD01-0520	Total/NA	Water	SM 2540C	
MB 550-210140/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-210140/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-210140/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-141762-E-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 210392

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141924-1	CH-CCR-M54-0520	Total/NA	Water	SM 4500 H+ B	
550-141924-2	CH-CCR-M59-0520	Total/NA	Water	SM 4500 H+ B	
550-141924-3	CH-CCR-M60-0520	Total/NA	Water	SM 4500 H+ B	
550-141924-4	CH-CCR-M61-0520	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-210392/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-210392/11	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
550-141924-4 DU	CH-CCR-M61-0520	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 210921

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141924-5	CH-CCR-FD01-0520	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-210921/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-210921/13	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
550-141925-B-2 DU	Duplicate	Total/NA	Water	SM 4500 H+ B	

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141924-1
SDG: APS Cholla Power Plant (BAM)

Client Sample ID: CH-CCR-M54-0520

Lab Sample ID: 550-141924-1

Date Collected: 05/07/20 14:38

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	210078	05/11/20 16:40	RDC	TAL PHX
Total/NA	Analysis	300.0		200	210078	05/11/20 17:07	RDC	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210622	05/19/20 01:23	SRA	TAL PHX
Total/NA	Analysis	SM 2540C		1	210029		YET	TAL PHX
					(Start)	05/11/20 11:20		
					(End)	05/12/20 10:15		
Total/NA	Analysis	SM 4500 H+ B		1	210392	05/14/20 13:35	MRR	TAL PHX

Client Sample ID: CH-CCR-M59-0520

Lab Sample ID: 550-141924-2

Date Collected: 05/07/20 11:13

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	210078	05/11/20 17:35	RDC	TAL PHX
Total/NA	Analysis	300.0		200	210078	05/11/20 18:02	RDC	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210622	05/19/20 00:07	SRA	TAL PHX
Total/NA	Analysis	SM 2540C		1	210029		YET	TAL PHX
					(Start)	05/11/20 11:20		
					(End)	05/12/20 10:15		
Total/NA	Analysis	SM 4500 H+ B		1	210392	05/14/20 13:35	MRR	TAL PHX

Client Sample ID: CH-CCR-M60-0520

Lab Sample ID: 550-141924-3

Date Collected: 05/07/20 13:36

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	210078	05/11/20 18:30	RDC	TAL PHX
Total/NA	Analysis	300.0		200	210078	05/11/20 18:57	RDC	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210622	05/19/20 00:11	SRA	TAL PHX
Total/NA	Analysis	SM 2540C		1	210140		YET	TAL PHX
					(Start)	05/12/20 11:12		
					(End)	05/13/20 11:20		
Total/NA	Analysis	SM 4500 H+ B		1	210392	05/14/20 13:35	MRR	TAL PHX

Client Sample ID: CH-CCR-M61-0520

Lab Sample ID: 550-141924-4

Date Collected: 05/07/20 12:18

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	210078	05/11/20 19:24	RDC	TAL PHX
Total/NA	Analysis	300.0		100	210078	05/12/20 10:20	RDC	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141924-1
SDG: APS Cholla Power Plant (BAM)

Client Sample ID: CH-CCR-M61-0520

Lab Sample ID: 550-141924-4

Date Collected: 05/07/20 12:18

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210622	05/18/20 23:51	SRA	TAL PHX
Total/NA	Analysis	SM 2540C		1	210029	05/11/20 11:20	YET	TAL PHX
					(Start)	05/12/20 10:15		
					(End)			
Total/NA	Analysis	SM 4500 H+ B		1	210392	05/14/20 13:35	MRR	TAL PHX

Client Sample ID: CH-CCR-FD01-0520

Lab Sample ID: 550-141924-5

Date Collected: 05/07/20 12:18

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	210078	05/11/20 23:04	RDC	TAL PHX
Total/NA	Analysis	300.0		200	210078	05/11/20 23:31	RDC	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210622	05/19/20 00:15	SRA	TAL PHX
Total/NA	Analysis	SM 2540C		1	210140	05/12/20 11:12	YET	TAL PHX
					(Start)	05/13/20 11:20		
					(End)			
Total/NA	Analysis	SM 4500 H+ B		1	210921	05/21/20 16:30	MRR	TAL PHX

Laboratory References:

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141924-1
SDG: APS Cholla Power Plant (BAM)

Laboratory: Eurofins TestAmerica, Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-08-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
SM 2540C		Water	Total Dissolved Solids
SM 4500 H+ B		Water	Temperature

Method Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141924-1
SDG: APS Cholla Power Plant (BAM)

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PHX
200.7 Rev 4.4	Metals (ICP)	40CFR136A	TAL PHX
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PHX
SM 4500 H+ B	pH	SM	TAL PHX
200.7	Preparation, Total Metals	EPA	TAL PHX

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Environmental Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Suite 189
Phoenix, AZ 85040
phone 602.437.3340 fax 602.454.9303

141924

TestAmerica Laboratories, Inc.

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other: CCR

Client Contact	Natalie Chrisman	Lab Contact: Ken Baker	Date:	COC No:
4801 Cholla Lake Rd	(602) 250-3608	Jim Edwards / (928) 288-1241		1 of 1 COCs
Joseph City, AZ 86032				
(928) 587-0319	Phone			
	FAX			
Project Name: CCR Groundwater Monitoring				
Site: APS Cholla Power Plant (BAM)				
PO #				

Sample Identification	Sample Date	Sample Time	Sample Type (Co-Comp, Grav)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	EPA 300.0 (Cl, F, SO4)	EPA 200.7 - Totals (B, Ca)	SM 4500-HB (pH)	SM 2540C (TDS)	Sample Specific Notes:
CH-CCR-M54-0420 0520	5-1-20	1430	G	W		N	X	X	X	X		01 Low Flow
CH-CCR-M59-0420 0520	5/1/20	1113	G	W		N	X	X	X	X		02
CH-CCR-M60-0420 0520	5-1-20	1336	G	W		N	X	X	X	X		03
CH-CCR-M61-0420 0520	5-1-20	1215	G	W		N	X	X	X	X		04
CH-CCR-FD01-0420 0520	5-1-20	1216	G	W		N	X	X	X	X		05



550-141924 Chain of Custody

Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Method 200.8 with collision cell

Custody Seal Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.:	Cooler Temp. (°C): Obs'd: _____	Therm ID No.:
Relinquished by: _____	Company: _____	Received by: _____	Date/Time: _____
Relinquished by: _____	Company: _____	Received by: _____	Date/Time: _____
Relinquished by: _____	Company: _____	Received by: _____	Date/Time: _____

0.6°C CDO

5-17-20 1235

Login Sample Receipt Checklist

Client: Arizona Public Service Company

Job Number: 550-141924-1

SDG Number: APS Cholla Power Plant (BAM)

Login Number: 141924

List Number: 1

Creator: Gravlin, Andrea

List Source: Eurofins TestAmerica, Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

ANALYTICAL REPORT

Eurofins TestAmerica, Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-141925-1

Laboratory SDG: APS Cholla Power Plant (FAP)
Client Project/Site: CCR Groundwater Monitoring

For:

Arizona Public Service Company
PO BOX 188, Ste. 4458
Joseph City, Arizona 86032

Attn: Natalie Chrisman



Authorized for release by:
6/10/2020 9:55:51 AM

Ken Baker, Project Manager II
(602)659-7624
ken.baker@testamericainc.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	5
Sample Summary	9
Detection Summary	10
Client Sample Results	19
QC Sample Results	36
QC Association Summary	64
Lab Chronicle	77
Certification Summary	88
Method Summary	90
Chain of Custody	91
Receipt Checklists	95



Definitions/Glossary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
D5	Minimum Reporting Limit (MRL) adjusted due to sample dilution; analyte was non-detect in the sample.
M1	Matrix spike recovery was high, the associated blank spike recovery was acceptable.
M2	Matrix spike recovery was low, the associated blank spike recovery was acceptable.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.
R13	MS/MSD RPD exceeded the method acceptance limit. Matrix spike recovery was outside acceptance criteria. Batch precision and accuracy were demonstrated.

Metals

Qualifier	Qualifier Description
B3	Target analyte detected in calibration blank at or above the method reporting limit.
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
M2	Matrix spike recovery was low, the associated blank spike recovery was acceptable.

General Chemistry

Qualifier	Qualifier Description
D2	Sample required dilution due to high concentration of analyte.
H1	Sample analysis performed past holding time.
H5	This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.
M1	Matrix spike recovery was high, the associated blank spike recovery was acceptable.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.
N1	See case narrative.
R13	MS/MSD RPD exceeded the method acceptance limit. Matrix spike recovery was outside acceptance criteria. Batch precision and accuracy were demonstrated.
R4	MS/MSD RPD exceeded the method control limit. Recovery met acceptance criteria.
V1	CCV recovery was above method acceptance limits. This target analyte was not detected in the sample.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control

Eurofins TestAmerica, Phoenix

Definitions/Glossary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Job ID: 550-141925-1

Laboratory: Eurofins TestAmerica, Phoenix

Narrative

Job Narrative 550-141925-1

Comments

No additional comments.

Receipt

The samples were received on 5/8/2020 12:35 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 0.5° C, 0.5° C, 0.6° C and 1.0° C.

Receipt Exceptions

Did not receive sample containers for dissolved methods for the last sample on the COC.

CH-TANNERS-0520

CH-CCR-M44D-0520 (550-141925-1), CH-CCR-M46-0520 (550-141925-2), CH-CCR-M46-0520 (550-141925-2[DU]), CH-CCR-M46-0520 (550-141925-2[MS]), CH-CCR-M46-0520 (550-141925-2[MSD]), CH-CCR-M46-0520 (550-141925-3), CH-CCR-M46-0520 (550-141925-3[MS]), CH-CCR-M46-0520 (550-141925-3[MSD]), CH-CCR-M50A-0520 (550-141925-4), CH-CCR-M50A-0520 (550-141925-5), CH-CCR-M51A-0520 (550-141925-6), CH-CCR-M51A-0520 (550-141925-7), CH-CCR-M64-0520 (550-141925-8), CH-CCR-M64-0520 (550-141925-9), CH-CCR-M65-0520 (550-141925-10), CH-CCR-M65-0520 (550-141925-11), CH-CCR-M66-0520 (550-141925-12), CH-CCR-M66-0520 (550-141925-13), CH-CCR-M67-0520 (550-141925-14), CH-CCR-M67-0520 (550-141925-15), CH-CCR-W123-0520 (550-141925-16), CH-CCR-W123-0520 (550-141925-17), CH-CCR-W125-0520 (550-141925-18), CH-CCR-W126-0520 (550-141925-19), CH-CCR-W126-0520 (550-141925-20), CH-CCR-FD05-0520 (550-141925-21), CH-CCR-FD05-0520 (550-141925-22), CH-TANNERS-0520 (550-141925-23), CH-CCR-W309-0520 (550-141925-24) and CH-CCR-W309-0520 (550-141925-25)

The following samples for metals were received unpreserved and were preserved upon receipt to the laboratory: CH-CCR-M44D-0520 (550-141925-1), CH-CCR-M46-0520 (550-141925-2), CH-CCR-M46-0520 (550-141925-2[DU]), CH-CCR-M46-0520 (550-141925-2[MS]), CH-CCR-M46-0520 (550-141925-2[MSD]), CH-CCR-M46-0520 (550-141925-3), CH-CCR-M46-0520 (550-141925-3[MS]), CH-CCR-M46-0520 (550-141925-3[MSD]), CH-CCR-M50A-0520 (550-141925-4), CH-CCR-M50A-0520 (550-141925-5), CH-CCR-M51A-0520 (550-141925-6), CH-CCR-M51A-0520 (550-141925-7), CH-CCR-M64-0520 (550-141925-8), CH-CCR-M64-0520 (550-141925-9), CH-CCR-M65-0520 (550-141925-10), CH-CCR-M65-0520 (550-141925-11), CH-CCR-M66-0520 (550-141925-12), CH-CCR-M66-0520 (550-141925-13), CH-CCR-M67-0520 (550-141925-14), CH-CCR-M67-0520 (550-141925-15), CH-CCR-W123-0520 (550-141925-16), CH-CCR-W123-0520 (550-141925-17), CH-CCR-W125-0520 (550-141925-18), CH-CCR-W126-0520 (550-141925-19), CH-CCR-W126-0520 (550-141925-20), CH-CCR-FD05-0520 (550-141925-21), CH-CCR-FD05-0520 (550-141925-22), CH-TANNERS-0520 (550-141925-23), CH-CCR-W309-0520 (550-141925-24) and CH-CCR-W309-0520 (550-141925-25). Regulatory documents require a 24-hour waiting period from the time of the addition of the acid preservative to the time of digestion.

post preserved for all dissolved metals samples, client has field filtered written on all of the samples they were all received unpreserved.

Samples were received no methods were requested on the COC.

Did not add methods to these samples.

CH-CCR-W309-0520 (550-141925-24) and CH-CCR-W309-0520 (550-141925-25)

Several sample sites were not available for the sample site enforcement.

CH-CCR-M44D-0520 (550-141925-1), CH-CCR-M46-0520 (550-141925-2), CH-CCR-M46-0520 (550-141925-2[DU]), CH-CCR-M46-0520 (550-141925-2[MS]), CH-CCR-M46-0520 (550-141925-2[MSD]), CH-CCR-M46-0520 (550-141925-3), CH-CCR-M46-0520 (550-141925-3[MS]), CH-CCR-M46-0520 (550-141925-3[MSD]), CH-CCR-M50A-0520 (550-141925-4), CH-CCR-M50A-0520 (550-141925-5), CH-CCR-M51A-0520 (550-141925-6), CH-CCR-M51A-0520 (550-141925-7), CH-CCR-M64-0520 (550-141925-8), CH-CCR-M64-0520 (550-141925-9), CH-CCR-M65-0520 (550-141925-10), CH-CCR-M65-0520 (550-141925-11), CH-CCR-M66-0520 (550-141925-12), CH-CCR-M66-0520 (550-141925-13), CH-CCR-M67-0520 (550-141925-14), CH-CCR-M67-0520 (550-141925-15), CH-CCR-W123-0520 (550-141925-16), CH-CCR-W123-0520 (550-141925-17), CH-CCR-W125-0520 (550-141925-18),

Case Narrative

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Job ID: 550-141925-1 (Continued)

Laboratory: Eurofins TestAmerica, Phoenix (Continued)

CH-CCR-W126-0520 (550-141925-19), CH-CCR-W126-0520 (550-141925-20), CH-CCR-FD05-0520 (550-141925-21), CH-CCR-FD05-0520 (550-141925-22), CH-TANNERS-0520 (550-141925-23), CH-CCR-W309-0520 (550-141925-24) and CH-CCR-W309-0520 (550-141925-25)

HPLC/IC

Method 300.0: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for 550-210077 were outside control limits for Fluoride. Sample matrix interference and/or non-homogeneity were suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) recoveries and precision were within acceptance limits.

Method 300.0: The following sample was diluted for Fluoride by method EPA 300.0 due to the nature of the sample matrix: CH-CCR-M46-0520 (550-141925-2). The sample contained high concentrations of Chloride and Sulfate which exceeded the maximum column capacity. Fluoride was not detected in the diluted sample; as such, an elevated reporting limit (RL) has been provided and the data has been qualified with D1 and D5 flags.

Method 300.0: The matrix spike duplicate (MSD) recovery and the matrix spike / matrix spike duplicate (MS/MSD) precision for 550-210077 were outside control limits for Sulfate. Sample matrix interference and/or non-homogeneity were suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) recoveries and precision were within acceptance limits.

Method 300.0: The matrix spike duplicate (MSD) recovery and the matrix spike / matrix spike duplicate (MS/MSD) precision for 550-210201 were outside control limits for Nitrate Nitrite as N by method EPA 300.0. Sample matrix interference and/or non-homogeneity were suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) recoveries and precision were within acceptance limits.

Method 300.0: The following sample was diluted for Fluoride by method EPA 300.0 due to the nature of the sample matrix: CH-CCR-M64-0520 (550-141925-8). The sample contained high concentrations of Chloride and Sulfate which exceeded the instrument's maximum column capacity. Fluoride was not detected in the diluted sample. As such, an elevated reporting limit (RL) has been provided and the data has been qualified with D1 and D5 flags.

Method 300.0: The following samples were diluted for Fluoride by method EPA 300.0 due to the nature of the samples matrix: CH-CCR-W125-0520 (550-141925-18) and CH-CCR-FD05-0520 (550-141925-21). The samples contained high concentrations of Chloride and Sulfate which exceeded the instrument's maximum column capacity. Fluoride was not detected in the diluted samples. As such, elevated reporting limits (RLs) have been provided and these data have been qualified with D1 and D5 flags.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method 200.8 LL: The continuing calibration blank (CCB) for analytical batch 550-210296 contained thallium above the reporting limit (RL). All reported samples associated with this CCB were ND for this analyte; therefore, re-analysis of samples was not performed.

Method 200.7 Rev 4.4: The following sample was diluted to bring the concentration of target analytes within the calibration range: CH-CCR-W309-0520 (550-141925-24). Elevated reporting limits (RLs) are provided.

Method 200.7 Rev 4.4: The following samples were diluted to bring the concentration of target analytes within the calibration range: CH-CCR-M65-0520 (550-141925-10), CH-CCR-M66-0520 (550-141925-12), CH-CCR-M67-0520 (550-141925-14), CH-CCR-W123-0520 (550-141925-16) and CH-CCR-FD05-0520 (550-141925-21). Elevated reporting limits (RLs) are provided.

Method 200.7 Rev 4.4: The continuing calibration blank (CCB) for analytical batch 550-211160 contained sodium above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

Method 200.7 Rev 4.4: The following samples were diluted to bring the concentration of target analytes within the calibration range: CH-CCR-M46-0520 (550-141925-2), CH-CCR-M50A-0520 (550-141925-4), CH-CCR-M51A-0520 (550-141925-6), CH-CCR-M64-0520 (550-141925-8), CH-CCR-W126-0520 (550-141925-19) and CH-TANNERS-0520 (550-141925-23). Elevated reporting limits (RLs) are provided.

Case Narrative

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Job ID: 550-141925-1 (Continued)

Laboratory: Eurofins TestAmerica, Phoenix (Continued)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

Method SM 5310B: The following samples were prepared outside of preparation holding time due to late receipt due to transfer : CH-CCR-M65-0520 (550-141925-11), CH-CCR-M66-0520 (550-141925-13) and CH-CCR-M67-0520 (550-141925-15).

Method SM 5310B: Reanalysis of the following samples were performed outside of the analytical holding time; these samples were received shortly before their hold time expired, so reanalysis was outside of hold time : CH-CCR-M50A-0520 (550-141925-5), CH-CCR-M51A-0520 (550-141925-7), CH-CCR-M64-0520 (550-141925-9), CH-CCR-M65-0520 (550-141925-11), CH-CCR-M66-0520 (550-141925-13), CH-CCR-M67-0520 (550-141925-15), CH-CCR-W123-0520 (550-141925-17), CH-CCR-W126-0520 (550-141925-20), CH-CCR-FD05-0520 (550-141925-22), (550-141925-B-9 MS) and (550-141925-B-9 MSD).

Methods 9060A, SM 5310B: The continuing calibration blank (CCB) associated with analytical batch 280-497611 contained <AffectedAnalytes> greater than one-half the reporting limit (RL). The samples could not be re-analyzed because they were used up in processing. All other associated QC, including associated method blanks were passing, detection in this CCB was most likely the result of a small amount of contamination. The sample results have been qualified and reported.

Method SM 5310B: Reanalysis of the following samples was performed outside of the analytical holding time due to initial late receipt : CH-CCR-M50A-0520 (550-141925-5), CH-CCR-M51A-0520 (550-141925-7), CH-CCR-M64-0520 (550-141925-9), CH-CCR-M65-0520 (550-141925-11), CH-CCR-M66-0520 (550-141925-13), CH-CCR-M67-0520 (550-141925-15), CH-CCR-W123-0520 (550-141925-17), CH-CCR-W126-0520 (550-141925-20), CH-CCR-FD05-0520 (550-141925-22), (550-141925-B-9 MS) and (550-141925-B-9 MSD).

Method SM 5310B: The continuing calibration blank (CCB) associated with analytical batch 280-497612 contained <AffectedAnalytes> greater than one-half the reporting limit (RL). The samples could not be re-analyzed because they were used up in processing. The sample results have been qualified and reported. Since all other associated QC and method blanks are passing, it is likely that this was a result of contamination in the CCB vial, rather than instrument issues.

Method SM 5310B: The following samples in batch 497612 were run out of the hold: CH-CCR-M65-0520 (550-141925-11), CH-CCR-M66-0520 (550-141925-13), CH-CCR-M67-0520 (550-141925-15) and CH-CCR-W126-0520 (550-141925-20). The samples were prepped within hold but due to the instrument run time, the samples were analyzed outside of holding time.

Method SM 5310B: The associated sample was prepared and placed on the instrument prior to hold time exceedance. Due to the instrument run time, the sample was analyzed outside of the holding time.

CH-CCR-M46-0520 (550-141925-3)

Method SM 5310B: The reference method SM5310B requires samples analyzed for the Dissolved Organic Carbon (DOC) to be filtered and preserved to a pH<2. The following sample(was received field filtered but unpreserved: CH-CCR-W309-0520 (550-141925-25) and (550-141925-B-25 DU). The sample was preserved to the appropriate pH<2 using hydrochloric acid 1:1 in the laboratory prior to analysis.

Method SM 5310B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 440-610686. Laboratory Control Sample Duplicate (LCSD) was analyzed and met acceptance criteria.

Method SM 5310B: The results for the source sample corresponding with the matrix spike / matrix spike duplicate (MS/MSD) associated with analytical batch 550-210096 for Total Organic Carbon (TOC) by method SM 5310B did not meet the method quality control requirements for reporting. The consecutive injections exceeded the relative percent difference requirement of 10; therefore, no results could not be reported and reanalysis was required. The associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) results met method acceptance criteria and may be used to verify batch accuracy and precision data. As such, the following associated samples have been reported and qualified with N1 flags.

CH-CCR-M50A-0520 (550-141925-4), CH-CCR-M51A-0520 (550-141925-6), CH-CCR-M64-0520 (550-141925-8), CH-CCR-M66-0520 (550-141925-12), CH-CCR-M67-0520 (550-141925-14), CH-CCR-W123-0520 (550-141925-16) and CH-CCR-FD05-0520 (550-141925-21)

Method SM 5310B: The matrix spike recovery and the matrix spike / matrix spike duplicate (MS/MSD) precision for 550-211616 were

Case Narrative

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Job ID: 550-141925-1 (Continued)

Laboratory: Eurofins TestAmerica, Phoenix (Continued)

outside control limits for Total Organic Carbon (TOC). Sample matrix interference and/or non-homogeneity were suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) recoveries and precision were within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
550-141925-1	CH-CCR-M44D-0520	Water	05/07/20 09:35	05/08/20 12:35	
550-141925-2	CH-CCR-M46-0520	Water	05/05/20 10:01	05/08/20 12:35	
550-141925-3	CH-CCR-M46-0520	Water	05/05/20 10:01	05/08/20 12:35	
550-141925-4	CH-CCR-M50A-0520	Water	05/06/20 13:46	05/08/20 12:35	
550-141925-5	CH-CCR-M50A-0520	Water	05/06/20 13:46	05/08/20 12:35	
550-141925-6	CH-CCR-M51A-0520	Water	05/06/20 15:15	05/08/20 12:35	
550-141925-7	CH-CCR-M51A-0520	Water	05/06/20 15:15	05/08/20 12:35	
550-141925-8	CH-CCR-M64-0520	Water	05/06/20 08:13	05/08/20 12:35	
550-141925-9	CH-CCR-M64-0520	Water	05/06/20 08:13	05/08/20 12:35	
550-141925-10	CH-CCR-M65-0520	Water	05/05/20 08:16	05/08/20 12:35	
550-141925-11	CH-CCR-M65-0520	Water	05/05/20 08:16	05/08/20 12:35	
550-141925-12	CH-CCR-M66-0520	Water	05/05/20 12:46	05/08/20 12:35	
550-141925-13	CH-CCR-M66-0520	Water	05/05/20 12:46	05/08/20 12:35	
550-141925-14	CH-CCR-M67-0520	Water	05/05/20 11:22	05/08/20 12:35	
550-141925-15	CH-CCR-M67-0520	Water	05/05/20 11:22	05/08/20 12:35	
550-141925-16	CH-CCR-W123-0520	Water	05/06/20 11:14	05/08/20 12:35	
550-141925-17	CH-CCR-W123-0520	Water	05/06/20 11:14	05/08/20 12:35	
550-141925-18	CH-CCR-W125-0520	Water	05/06/20 12:45	05/08/20 12:35	
550-141925-19	CH-CCR-W126-0520	Water	05/05/20 14:09	05/08/20 12:35	
550-141925-20	CH-CCR-W126-0520	Water	05/05/20 14:09	05/08/20 12:35	
550-141925-21	CH-CCR-FD05-0520	Water	05/06/20 08:13	05/08/20 12:35	
550-141925-22	CH-CCR-FD05-0520	Water	05/06/20 08:13	05/08/20 12:35	
550-141925-23	CH-TANNERS-0520	Water	05/08/20 08:02	05/08/20 12:35	
550-141925-24	CH-CCR-W309-0520	Water	05/04/20 14:24	05/08/20 12:35	
550-141925-25	CH-CCR-W309-0520	Water	05/04/20 14:24	05/08/20 12:35	

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M44D-0520

Lab Sample ID: 550-141925-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	970	D2	400	mg/L	200		300.0	Total/NA
Fluoride	0.81	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	310	D1	4.0	mg/L	2		300.0	Total/NA
Calcium	89		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	49		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	4.8		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	630		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	100		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	100		6.0	mg/L	1		SM 2320B	Total/NA

Client Sample ID: CH-CCR-M46-0520

Lab Sample ID: 550-141925-2

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7100	D2 M1	400	mg/L	200		300.0	Total/NA
Sulfate	7800	D2 M1 R13	400	mg/L	200		300.0	Total/NA
Boron	0.64		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	1300		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	1.0		0.10	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.35		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	240		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	3.8		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	21		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	2700	D2	5.0	mg/L	10		200.7 Rev 4.4	Total/NA
Arsenic	0.0013		0.00050	mg/L	1		200.8 LL	Total/NA
Barium	0.031	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Chromium	0.0011		0.0010	mg/L	1		200.8 LL	Total/NA
Cobalt	0.00081		0.00050	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.0068		0.00050	mg/L	1		200.8 LL	Total/NA
Alkalinity as CaCO3	200		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	200		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	13000	D2	200	mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	7.8	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Ammonia	0.82		0.50	mg/L	1		SM 4500 NH3 D	Total/NA
Total Organic Carbon	3.2	M1 R13	0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	3.2	M1 R4	0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	3.2	M1 R4	0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-M46-0520

Lab Sample ID: 550-141925-3

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Iron	0.68		0.10	mg/L	1		200.7 Rev 4.4	Dissolved
Manganese	3.6	M2	0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.0011		0.00050	mg/L	1		200.8 LL	Dissolved
Cobalt	0.00079		0.00050	mg/L	1		200.8 LL	Dissolved
Dissolved Organic Carbon	3.8	H1 V1	1.0	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	3.8	H1 V1	1.0	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-M50A-0520

Lab Sample ID: 550-141925-4

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1900	D2	400	mg/L	200		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M50A-0520 (Continued)

Lab Sample ID: 550-141925-4

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	2.3	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	3000	D2	400	mg/L	200		300.0	Total/NA
Boron	3.0		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	600		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.55		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	200		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.25		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	9.8		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	1600	D2	5.0	mg/L	10		200.7 Rev 4.4	Total/NA
Arsenic	0.0027		0.00050	mg/L	1		200.8 LL	Total/NA
Barium	0.0093	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Chromium	0.0024		0.0010	mg/L	1		200.8 LL	Total/NA
Cobalt	0.00066		0.00050	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.0065		0.00050	mg/L	1		200.8 LL	Total/NA
Selenium	0.0018		0.00050	mg/L	1		200.8 LL	Total/NA
Alkalinity as CaCO3	160		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	160		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	7700	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	7.9	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	2.9	N1	0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	3.0	N1	0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	2.9	N1	0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-M50A-0520

Lab Sample ID: 550-141925-5

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.23		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.0024		0.00050	mg/L	1		200.8 LL	Dissolved
Dissolved Organic Carbon	2.9	M1 V1	1.0	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	2.9	M1 V1	1.0	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-M51A-0520

Lab Sample ID: 550-141925-6

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5300	D2	400	mg/L	200		300.0	Total/NA
Fluoride	5.6	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	2900	D2	400	mg/L	200		300.0	Total/NA
Boron	32		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	860		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.65		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	280		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.89		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	35		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	3000	D2	5.0	mg/L	10		200.7 Rev 4.4	Total/NA
Arsenic	0.015		0.00050	mg/L	1		200.8 LL	Total/NA
Barium	0.0091	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Chromium	0.0026	D1	0.0020	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0013	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.090		0.00050	mg/L	1		200.8 LL	Total/NA
Alkalinity as CaCO3	83		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	83		6.0	mg/L	1		SM 2320B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M51A-0520 (Continued)

Lab Sample ID: 550-141925-6

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	12000	D2	200	mg/L	1		SM 2540C	Total/NA
pH	7.2	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	8.4	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	1.7	N1	0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	1.7	N1	0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	1.7	N1	0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-M51A-0520

Lab Sample ID: 550-141925-7

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.84		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.015		0.00050	mg/L	1		200.8 LL	Dissolved
Cobalt	0.00078		0.00050	mg/L	1		200.8 LL	Dissolved
Dissolved Organic Carbon	1.8	V1	1.0	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	1.7	V1	1.0	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-M64-0520

Lab Sample ID: 550-141925-8

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3900	D2	400	mg/L	200		300.0	Total/NA
Sulfate	3900	D2	400	mg/L	200		300.0	Total/NA
Boron	1.2		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	520		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	5.5		0.10	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.47		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	230		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	2.2		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	20		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	3400	D2	5.0	mg/L	10		200.7 Rev 4.4	Total/NA
Arsenic	0.00086		0.00050	mg/L	1		200.8 LL	Total/NA
Barium	0.013	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0042		0.00050	mg/L	1		200.8 LL	Total/NA
Alkalinity as CaCO3	490		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	490		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	12000	D2	200	mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	8.5	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Ammonia	0.73		0.50	mg/L	1		SM 4500 NH3 D	Total/NA
Total Organic Carbon	5.1	N1	0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	5.1	N1	0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	5.1	N1	0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-M64-0520

Lab Sample ID: 550-141925-9

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Iron	5.0		0.10	mg/L	1		200.7 Rev 4.4	Dissolved
Manganese	1.9		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.00050		0.00050	mg/L	1		200.8 LL	Dissolved
Dissolved Organic Carbon	5.0	V1	1.0	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	5.0	V1	1.0	mg/L	1		SM 5310B	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M65-0520

Lab Sample ID: 550-141925-10

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3600	D2	400	mg/L	200		300.0	Total/NA
Fluoride	1.8	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	2900	D2	400	mg/L	200		300.0	Total/NA
Boron	11		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	750		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.67		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	270		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.31		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	30		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	1900	B3 D1	5.0	mg/L	10		200.7 Rev 4.4	Total/NA
Arsenic	0.0016	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Barium	0.015	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Cadmium	0.00010		0.00010	mg/L	1		200.8 LL	Total/NA
Chromium	0.0052	D2	0.0020	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0033	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.065		0.00050	mg/L	1		200.8 LL	Total/NA
Selenium	0.0017	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Alkalinity as CaCO3	150		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	150		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	9400	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	8.4	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	2.1		0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	2.1		0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	2.1		0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-M65-0520

Lab Sample ID: 550-141925-11

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.29		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.0017		0.00050	mg/L	1		200.8 LL	Dissolved
Cobalt	0.0026		0.00050	mg/L	1		200.8 LL	Dissolved
Dissolved Organic Carbon	2.4	H1	1.0	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	2.4	H1	1.0	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-M66-0520

Lab Sample ID: 550-141925-12

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4600	D2	400	mg/L	200		300.0	Total/NA
Fluoride	1.1	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	3100	D2	400	mg/L	200		300.0	Total/NA
Boron	1.6		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	800		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.23		0.10	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.68		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	280		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	4.3		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	14		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	2400	B3 D1	5.0	mg/L	10		200.7 Rev 4.4	Total/NA
Arsenic	0.0017	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Barium	0.015	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Cadmium	0.00027		0.00010	mg/L	1		200.8 LL	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M66-0520 (Continued)

Lab Sample ID: 550-141925-12

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.016	D2	0.0020	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0014	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.014		0.00050	mg/L	1		200.8 LL	Total/NA
Selenium	0.027	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Alkalinity as CaCO3	150		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	150		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	11000	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	10.7	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	2.7	N1	0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	2.7	N1	0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	2.7	N1	0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-M66-0520

Lab Sample ID: 550-141925-13

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Iron	0.15		0.10	mg/L	1		200.7 Rev 4.4	Dissolved
Manganese	4.1		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.0017		0.00050	mg/L	1		200.8 LL	Dissolved
Cobalt	0.0010		0.00050	mg/L	1		200.8 LL	Dissolved
Dissolved Organic Carbon	2.3	H1	1.0	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	2.2	H1	1.0	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-M67-0520

Lab Sample ID: 550-141925-14

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5400	D2	400	mg/L	200		300.0	Total/NA
Fluoride	0.95	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	1500	D2	400	mg/L	200		300.0	Total/NA
Boron	0.36		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	1700		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	8.0		0.10	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.25		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	290		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	5.1		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	14		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	1500	B3 D1	5.0	mg/L	10		200.7 Rev 4.4	Total/NA
Arsenic	0.017	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Barium	0.028	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0045	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0043		0.00050	mg/L	1		200.8 LL	Total/NA
Alkalinity as CaCO3	170		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	170		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	11000	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.1	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	10.4	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Ammonia	1.4		0.50	mg/L	1		SM 4500 NH3 D	Total/NA
Total Organic Carbon	2.3	N1	0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	2.4	N1	0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	2.3	N1	0.50	mg/L	1		SM 5310B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M67-0520

Lab Sample ID: 550-141925-15

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Iron	7.8		0.10	mg/L	1		200.7 Rev 4.4	Dissolved
Manganese	4.9		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.015		0.00050	mg/L	1		200.8 LL	Dissolved
Cobalt	0.0038		0.00050	mg/L	1		200.8 LL	Dissolved
Dissolved Organic Carbon	2.2	H1	1.0	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	2.2	H1	1.0	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-W123-0520

Lab Sample ID: 550-141925-16

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5700	D2	400	mg/L	200		300.0	Total/NA
Fluoride	4.8	D1	0.80	mg/L	2		300.0	Total/NA
Nitrate Nitrite as N	0.83	D1	0.50	mg/L	5		300.0	Total/NA
Sulfate	3400	D2	400	mg/L	200		300.0	Total/NA
Boron	37		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	780		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.16		0.10	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.83		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	270		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	48		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	3500	B3 D1	5.0	mg/L	10		200.7 Rev 4.4	Total/NA
Arsenic	0.0012	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Barium	0.011	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Chromium	0.076	D2	0.0020	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0030	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.30		0.00050	mg/L	1		200.8 LL	Total/NA
Selenium	0.0027	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Alkalinity as CaCO3	54		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	54		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	13000	D2	200	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	10.8	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	2.1	N1	0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	2.1	N1	0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	2.1	N1	0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-W123-0520

Lab Sample ID: 550-141925-17

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0015		0.00050	mg/L	1		200.8 LL	Dissolved
Cobalt	0.0023		0.00050	mg/L	1		200.8 LL	Dissolved
Dissolved Organic Carbon	1.9	V1	1.0	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	1.9	V1	1.0	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-W125-0520

Lab Sample ID: 550-141925-18

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	680	D2	400	mg/L	200		300.0	Total/NA
Sulfate	320	D1	4.0	mg/L	2		300.0	Total/NA
Calcium	130		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	51		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	4.3		0.50	mg/L	1		200.7 Rev 4.4	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-W125-0520 (Continued)

Lab Sample ID: 550-141925-18

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Sodium	450		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO ₃	160		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO ₃	160		6.0	mg/L	1		SM 2320B	Total/NA

Client Sample ID: CH-CCR-W126-0520

Lab Sample ID: 550-141925-19

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6900	D2	400	mg/L	200		300.0	Total/NA
Fluoride	4.1	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	4100	D2	400	mg/L	200		300.0	Total/NA
Boron	50		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	780		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	1.1		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	500		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.12		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	87		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	4200	D2	5.0	mg/L	10		200.7 Rev 4.4	Total/NA
Arsenic	0.0014	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Barium	0.011	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Chromium	0.0053	D2	0.0020	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0038	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.22	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Selenium	0.0015	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Alkalinity as CaCO ₃	95		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO ₃	95		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	16000	D2	200	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	11.4	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	2.3		0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	2.3		0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	2.3		0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-W126-0520

Lab Sample ID: 550-141925-20

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.10		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.0023		0.00050	mg/L	1		200.8 LL	Dissolved
Cobalt	0.0036		0.00050	mg/L	1		200.8 LL	Dissolved
Dissolved Organic Carbon	2.3	H1	1.0	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	2.3	H1	1.0	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-FD05-0520

Lab Sample ID: 550-141925-21

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4100	D2	400	mg/L	200		300.0	Total/NA
Sulfate	4100	D2	400	mg/L	200		300.0	Total/NA
Boron	1.3		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	510		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	5.5		0.10	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.47		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	220		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	2.3		0.010	mg/L	1		200.7 Rev 4.4	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-FD05-0520 (Continued)

Lab Sample ID: 550-141925-21

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Potassium	19		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	3800	B3 D1	5.0	mg/L	10		200.7 Rev 4.4	Total/NA
Barium	0.012		0.00050	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.0043		0.00050	mg/L	1		200.8 LL	Total/NA
Alkalinity as CaCO3	470		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	470		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	12000	D2	200	mg/L	1		SM 2540C	Total/NA
pH	7.6	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	12.1	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Ammonia	0.75		0.50	mg/L	1		SM 4500 NH3 D	Total/NA
Total Organic Carbon	5.5	N1	0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	5.5	N1	0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	5.5	N1	0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-FD05-0520

Lab Sample ID: 550-141925-22

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Iron	4.8		0.10	mg/L	1		200.7 Rev 4.4	Dissolved
Manganese	1.9		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.00093		0.00050	mg/L	1		200.8 LL	Dissolved
Dissolved Organic Carbon	5.5	V1	1.0	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	5.4	V1	1.0	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-TANNERS-0520

Lab Sample ID: 550-141925-23

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2200	D2	400	mg/L	200		300.0	Total/NA
Fluoride	3.8	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	3100	D2	400	mg/L	200		300.0	Total/NA
Boron	4.0		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	680		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.73		0.10	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.33		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	260		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	1.7		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	20		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	1600	D2	5.0	mg/L	10		200.7 Rev 4.4	Total/NA
Arsenic	0.0015		0.00050	mg/L	1		200.8 LL	Total/NA
Barium	0.058	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Cadmium	0.00033		0.00010	mg/L	1		200.8 LL	Total/NA
Chromium	0.0021	D2	0.0020	mg/L	2		200.8 LL	Total/NA
Cobalt	0.020	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Lead	0.0070		0.00050	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.036		0.00050	mg/L	1		200.8 LL	Total/NA
Selenium	0.00054		0.00050	mg/L	1		200.8 LL	Total/NA
Alkalinity as CaCO3	76		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	76		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	8500	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	13.2	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	1.0		0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	1.0		0.50	mg/L	1		SM 5310B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-TANNERS-0520 (Continued)

Lab Sample ID: 550-141925-23

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon - Quad	1.0		0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-W309-0520

Lab Sample ID: 550-141925-24

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1500	D2	400	mg/L	200		300.0	Total/NA
Fluoride	1.2	D1	0.80	mg/L	2		300.0	Total/NA
Nitrate Nitrite as N	2.6	D1	0.50	mg/L	5		300.0	Total/NA
Sulfate	3200	D2	400	mg/L	200		300.0	Total/NA
Boron	0.46		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	440		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.50		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	86		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.83		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	8.9		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	1800	D2	5.0	mg/L	10		200.7 Rev 4.4	Total/NA
Arsenic	0.0047		0.00050	mg/L	1		200.8 LL	Total/NA
Barium	0.0070		0.00050	mg/L	1		200.8 LL	Total/NA
Chromium	0.0052		0.0010	mg/L	1		200.8 LL	Total/NA
Lead	0.023		0.00050	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.010		0.00050	mg/L	1		200.8 LL	Total/NA
Selenium	0.20		0.00050	mg/L	1		200.8 LL	Total/NA
Alkalinity as CaCO3	160		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	160		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	7200	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	13.9	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: CH-CCR-W309-0520

Lab Sample ID: 550-141925-25

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.83		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.0038		0.00050	mg/L	1		200.8 LL	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M44D-0520

Lab Sample ID: 550-141925-1

Date Collected: 05/07/20 09:35

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	970	D2	400	mg/L			05/12/20 00:26	200
Fluoride	0.81	D1	0.80	mg/L			05/11/20 23:59	2
Sulfate	310	D1	4.0	mg/L			05/11/20 23:59	2

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	89		2.0	mg/L		05/11/20 05:12	05/19/20 00:19	1
Magnesium	49		2.0	mg/L		05/11/20 05:12	05/19/20 00:19	1
Potassium	4.8		0.50	mg/L		05/11/20 05:12	05/19/20 00:19	1
Sodium	630		0.50	mg/L		05/11/20 05:12	05/28/20 03:16	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	100		6.0	mg/L			05/09/20 21:02	1
Bicarbonate Alkalinity as CaCO3	100		6.0	mg/L			05/09/20 21:02	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 21:02	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			05/09/20 21:02	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 21:02	1

Client Sample ID: CH-CCR-M46-0520

Lab Sample ID: 550-141925-2

Date Collected: 05/05/20 10:01

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7100	D2 M1	400	mg/L			05/11/20 19:52	200
Fluoride	ND	D1 D5 M2 R13	0.80	mg/L			05/11/20 18:57	2
Nitrate Nitrite as N	ND	D1 D5 M2 R13	0.50	mg/L			05/12/20 17:04	5
Sulfate	7800	D2 M1 R13	400	mg/L			05/11/20 19:52	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		05/11/20 05:12	05/19/20 00:03	1
Boron	0.64		0.050	mg/L		05/11/20 05:12	05/19/20 00:03	1
Calcium	1300		2.0	mg/L		05/11/20 05:12	05/19/20 00:03	1
Iron	1.0		0.10	mg/L		05/11/20 05:12	05/19/20 00:03	1
Lithium	0.35		0.20	mg/L		05/11/20 05:12	05/21/20 18:36	1
Magnesium	240		2.0	mg/L		05/11/20 05:12	05/19/20 00:03	1
Manganese	3.8		0.010	mg/L		05/11/20 05:12	05/19/20 00:03	1
Potassium	21		0.50	mg/L		05/11/20 05:12	05/19/20 00:03	1
Sodium	2700	D2	5.0	mg/L		05/11/20 05:12	05/28/20 03:12	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0013		0.00050	mg/L		05/11/20 08:57	05/21/20 21:42	1
Barium	0.031	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:30	2
Cadmium	ND		0.00010	mg/L		05/11/20 08:57	05/11/20 20:37	1
Chromium	0.0011		0.0010	mg/L		05/11/20 08:57	05/21/20 21:42	1
Cobalt	0.00081		0.00050	mg/L		05/11/20 08:57	05/21/20 21:42	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M46-0520

Lab Sample ID: 550-141925-2

Date Collected: 05/05/20 10:01

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.00050	mg/L		05/11/20 08:57	05/11/20 20:37	1
Molybdenum	0.0068		0.00050	mg/L		05/11/20 08:57	05/11/20 20:37	1
Selenium	ND	D1	0.0010	mg/L		05/22/20 05:16	05/28/20 23:06	2

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	200		6.0	mg/L			05/09/20 20:45	1
Bicarbonate Alkalinity as CaCO3	200		6.0	mg/L			05/09/20 20:45	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 20:45	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			05/09/20 20:45	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 20:45	1
Total Dissolved Solids	13000	D2	200	mg/L			05/11/20 11:20	1
pH	7.4	H5	1.7	SU			05/21/20 16:30	1
Temperature	7.8	H5	0.1	Degrees C			05/21/20 16:30	1
Ammonia	0.82		0.50	mg/L			05/19/20 00:44	1
Total Organic Carbon	3.2	M1 R13	0.50	mg/L			06/01/20 15:16	1
Total Organic Carbon - Duplicates	3.2	M1 R4	0.50	mg/L			06/01/20 15:16	1
Total Organic Carbon - Quad	3.2	M1 R4	0.50	mg/L			06/01/20 15:16	1

Client Sample ID: CH-CCR-M46-0520

Lab Sample ID: 550-141925-3

Date Collected: 05/05/20 10:01

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.68		0.10	mg/L		05/11/20 05:21	05/22/20 23:51	1
Manganese	3.6	M2	0.010	mg/L		05/11/20 05:21	05/22/20 23:51	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0011		0.00050	mg/L		05/11/20 08:45	05/22/20 18:48	1
Cobalt	0.00079		0.00050	mg/L		05/11/20 08:45	05/22/20 18:48	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	3.8	H1 V1	1.0	mg/L			06/03/20 09:37	1
Dissolved Organic Carbon - Duplicate	3.8	H1 V1	1.0	mg/L			06/03/20 09:37	1

Client Sample ID: CH-CCR-M50A-0520

Lab Sample ID: 550-141925-4

Date Collected: 05/06/20 13:46

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1900	D2	400	mg/L			05/12/20 01:21	200
Fluoride	2.3	D1	0.80	mg/L			05/12/20 00:53	2
Nitrate Nitrite as N	ND	D1 D5	0.50	mg/L			05/12/20 18:54	5
Sulfate	3000	D2	400	mg/L			05/12/20 01:21	200

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M50A-0520

Lab Sample ID: 550-141925-4

Date Collected: 05/06/20 13:46

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		05/11/20 05:12	05/19/20 00:23	1
Boron	3.0		0.050	mg/L		05/11/20 05:12	05/19/20 00:23	1
Calcium	600		2.0	mg/L		05/11/20 05:12	05/19/20 00:23	1
Iron	ND		0.10	mg/L		05/11/20 05:12	05/19/20 00:23	1
Lithium	0.55		0.20	mg/L		05/11/20 05:12	05/21/20 18:44	1
Magnesium	200		2.0	mg/L		05/11/20 05:12	05/19/20 00:23	1
Manganese	0.25		0.010	mg/L		05/11/20 05:12	05/19/20 00:23	1
Potassium	9.8		0.50	mg/L		05/11/20 05:12	05/19/20 00:23	1
Sodium	1600	D2	5.0	mg/L		05/11/20 05:12	05/28/20 03:25	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0027		0.00050	mg/L		05/11/20 08:57	05/11/20 20:35	1
Barium	0.0093	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:32	2
Cadmium	ND		0.00010	mg/L		05/11/20 08:57	05/11/20 20:35	1
Chromium	0.0024		0.0010	mg/L		05/11/20 08:57	05/21/20 21:40	1
Cobalt	0.00066		0.00050	mg/L		05/11/20 08:57	05/21/20 21:40	1
Lead	ND		0.00050	mg/L		05/11/20 08:57	05/11/20 20:35	1
Molybdenum	0.0065		0.00050	mg/L		05/11/20 08:57	05/11/20 20:35	1
Selenium	0.0018		0.00050	mg/L		05/11/20 08:57	05/11/20 20:35	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	160		6.0	mg/L			05/09/20 21:10	1
Bicarbonate Alkalinity as CaCO3	160		6.0	mg/L			05/09/20 21:10	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 21:10	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			05/09/20 21:10	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 21:10	1
Total Dissolved Solids	7700	D2	100	mg/L			05/11/20 11:20	1
pH	7.5	H5	1.7	SU			05/21/20 16:30	1
Temperature	7.9	H5	0.1	Degrees C			05/21/20 16:30	1
Ammonia	ND		0.50	mg/L			05/11/20 22:07	1
Total Organic Carbon	2.9	N1	0.50	mg/L			05/11/20 19:17	1
Total Organic Carbon - Duplicates	3.0	N1	0.50	mg/L			05/11/20 19:17	1
Total Organic Carbon - Quad	2.9	N1	0.50	mg/L			05/11/20 19:17	1

Client Sample ID: CH-CCR-M50A-0520

Lab Sample ID: 550-141925-5

Date Collected: 05/06/20 13:46

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10	mg/L		05/11/20 05:21	05/22/20 23:55	1
Manganese	0.23		0.010	mg/L		05/11/20 05:21	05/22/20 23:55	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0024		0.00050	mg/L		05/11/20 08:45	05/11/20 19:59	1
Cobalt	ND		0.00050	mg/L		05/11/20 08:45	05/11/20 19:59	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M50A-0520

Lab Sample ID: 550-141925-5

Date Collected: 05/06/20 13:46

Matrix: Water

Date Received: 05/08/20 12:35

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	2.9	M1 V1	1.0	mg/L			06/03/20 08:44	1
Dissolved Organic Carbon - Duplicate	2.9	M1 V1	1.0	mg/L			06/03/20 08:44	1

Client Sample ID: CH-CCR-M51A-0520

Lab Sample ID: 550-141925-6

Date Collected: 05/06/20 15:15

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5300	D2	400	mg/L			05/12/20 02:16	200
Fluoride	5.6	D1	0.80	mg/L			05/12/20 01:48	2
Nitrate Nitrite as N	ND	D1 D5	0.50	mg/L			05/12/20 19:21	5
Sulfate	2900	D2	400	mg/L			05/12/20 02:16	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		05/11/20 05:12	05/19/20 00:27	1
Boron	32		0.050	mg/L		05/11/20 05:12	05/19/20 00:27	1
Calcium	860		2.0	mg/L		05/11/20 05:12	05/19/20 00:27	1
Iron	ND		0.10	mg/L		05/11/20 05:12	05/19/20 00:27	1
Lithium	0.65		0.20	mg/L		05/11/20 05:12	05/21/20 18:48	1
Magnesium	280		2.0	mg/L		05/11/20 05:12	05/19/20 00:27	1
Manganese	0.89		0.010	mg/L		05/11/20 05:12	05/19/20 00:27	1
Potassium	35		0.50	mg/L		05/11/20 05:12	05/19/20 00:27	1
Sodium	3000	D2	5.0	mg/L		05/11/20 05:12	05/28/20 03:29	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.015		0.00050	mg/L		05/11/20 08:57	05/11/20 20:39	1
Barium	0.0091	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:34	2
Cadmium	ND		0.00010	mg/L		05/11/20 08:57	05/11/20 20:39	1
Chromium	0.0026	D1	0.0020	mg/L		05/11/20 08:57	05/21/20 21:50	2
Cobalt	0.0013	D1	0.0010	mg/L		05/11/20 08:57	05/21/20 21:50	2
Lead	ND		0.00050	mg/L		05/11/20 08:57	05/11/20 20:39	1
Molybdenum	0.090		0.00050	mg/L		05/11/20 08:57	05/11/20 20:39	1
Selenium	ND		0.00050	mg/L		05/11/20 08:57	05/11/20 20:39	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	83		6.0	mg/L			05/09/20 21:19	1
Bicarbonate Alkalinity as CaCO3	83		6.0	mg/L			05/09/20 21:19	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 21:19	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			05/09/20 21:19	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 21:19	1
Total Dissolved Solids	12000	D2	200	mg/L			05/11/20 11:20	1
pH	7.2	H5	1.7	SU			05/21/20 16:30	1
Temperature	8.4	H5	0.1	Degrees C			05/21/20 16:30	1
Ammonia	ND		0.50	mg/L			05/11/20 22:16	1
Total Organic Carbon	1.7	N1	0.50	mg/L			05/11/20 19:35	1
Total Organic Carbon - Duplicates	1.7	N1	0.50	mg/L			05/11/20 19:35	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M51A-0520

Date Collected: 05/06/20 15:15

Date Received: 05/08/20 12:35

Lab Sample ID: 550-141925-6

Matrix: Water

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	1.7	N1	0.50	mg/L			05/11/20 19:35	1

Client Sample ID: CH-CCR-M51A-0520

Date Collected: 05/06/20 15:15

Date Received: 05/08/20 12:35

Lab Sample ID: 550-141925-7

Matrix: Water

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10	mg/L		05/11/20 05:21	05/22/20 23:59	1
Manganese	0.84		0.010	mg/L		05/11/20 05:21	05/22/20 23:59	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.015		0.00050	mg/L		05/11/20 08:45	05/11/20 20:03	1
Cobalt	0.00078		0.00050	mg/L		05/11/20 08:45	05/11/20 20:03	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.8	V1	1.0	mg/L			06/03/20 09:52	1
Dissolved Organic Carbon - Duplicate	1.7	V1	1.0	mg/L			06/03/20 09:52	1

Client Sample ID: CH-CCR-M64-0520

Date Collected: 05/06/20 08:13

Date Received: 05/08/20 12:35

Lab Sample ID: 550-141925-8

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3900	D2	400	mg/L			05/12/20 04:05	200
Fluoride	ND	D1 D5	0.80	mg/L			05/12/20 03:38	2
Nitrate Nitrite as N	ND	D1 D5	0.50	mg/L			05/12/20 19:49	5
Sulfate	3900	D2	400	mg/L			05/12/20 04:05	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		05/11/20 05:12	05/19/20 00:31	1
Boron	1.2		0.050	mg/L		05/11/20 05:12	05/19/20 00:31	1
Calcium	520		2.0	mg/L		05/11/20 05:12	05/19/20 00:31	1
Iron	5.5		0.10	mg/L		05/11/20 05:12	05/19/20 00:31	1
Lithium	0.47		0.20	mg/L		05/11/20 05:12	05/21/20 18:52	1
Magnesium	230		2.0	mg/L		05/11/20 05:12	05/19/20 00:31	1
Manganese	2.2		0.010	mg/L		05/11/20 05:12	05/19/20 00:31	1
Potassium	20		0.50	mg/L		05/11/20 05:12	05/19/20 00:31	1
Sodium	3400	D2	5.0	mg/L		05/11/20 05:12	05/28/20 03:33	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00086		0.00050	mg/L		05/11/20 08:57	05/21/20 21:46	1
Barium	0.013	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:36	2
Cadmium	ND		0.00010	mg/L		05/11/20 08:57	05/11/20 20:41	1
Chromium	ND		0.0010	mg/L		05/11/20 08:57	05/21/20 21:46	1
Cobalt	ND		0.00050	mg/L		05/11/20 08:57	05/21/20 21:46	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M64-0520

Lab Sample ID: 550-141925-8

Date Collected: 05/06/20 08:13

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.00050	mg/L		05/11/20 08:57	05/11/20 20:41	1
Molybdenum	0.0042		0.00050	mg/L		05/11/20 08:57	05/11/20 20:41	1
Selenium	ND	D1	0.0010	mg/L		05/22/20 05:16	05/29/20 14:56	2

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	490		6.0	mg/L			05/09/20 21:30	1
Bicarbonate Alkalinity as CaCO3	490		6.0	mg/L			05/09/20 21:30	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 21:30	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			05/09/20 21:30	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 21:30	1
Total Dissolved Solids	12000	D2	200	mg/L			05/11/20 11:20	1
pH	7.3	H5	1.7	SU			05/21/20 16:30	1
Temperature	8.5	H5	0.1	Degrees C			05/21/20 16:30	1
Ammonia	0.73		0.50	mg/L			05/11/20 22:25	1
Total Organic Carbon	5.1	N1	0.50	mg/L			05/11/20 19:53	1
Total Organic Carbon - Duplicates	5.1	N1	0.50	mg/L			05/11/20 19:53	1
Total Organic Carbon - Quad	5.1	N1	0.50	mg/L			05/11/20 19:53	1

Client Sample ID: CH-CCR-M64-0520

Lab Sample ID: 550-141925-9

Date Collected: 05/06/20 08:13

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	5.0		0.10	mg/L		05/11/20 05:21	05/23/20 00:03	1
Manganese	1.9		0.010	mg/L		05/11/20 05:21	05/23/20 00:03	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00050		0.00050	mg/L		05/11/20 08:45	05/22/20 18:46	1
Cobalt	ND		0.00050	mg/L		05/11/20 08:45	05/22/20 18:46	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	5.0	V1	1.0	mg/L			06/03/20 10:11	1
Dissolved Organic Carbon - Duplicate	5.0	V1	1.0	mg/L			06/03/20 10:11	1

Client Sample ID: CH-CCR-M65-0520

Lab Sample ID: 550-141925-10

Date Collected: 05/05/20 08:16

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3600	D2	400	mg/L			05/11/20 21:05	200
Fluoride	1.8	D1	0.80	mg/L			05/11/20 20:47	2
Nitrate Nitrite as N	ND	D1 D5	0.50	mg/L			05/12/20 20:44	5
Sulfate	2900	D2	400	mg/L			05/11/20 21:05	200

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M65-0520

Lab Sample ID: 550-141925-10

Date Collected: 05/05/20 08:16

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		05/11/20 05:12	05/19/20 00:47	1
Boron	11		0.050	mg/L		05/11/20 05:12	05/19/20 00:47	1
Calcium	750		2.0	mg/L		05/11/20 05:12	05/19/20 00:47	1
Iron	ND		0.10	mg/L		05/11/20 05:12	05/19/20 00:47	1
Lithium	0.67		0.20	mg/L		05/11/20 05:12	05/21/20 19:00	1
Magnesium	270		2.0	mg/L		05/11/20 05:12	05/19/20 00:47	1
Manganese	0.31		0.010	mg/L		05/11/20 05:12	05/19/20 00:47	1
Potassium	30		0.50	mg/L		05/11/20 05:12	05/19/20 00:47	1
Sodium	1900	B3 D1	5.0	mg/L		05/11/20 05:12	05/26/20 18:58	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0016	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:39	2
Barium	0.015	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:39	2
Cadmium	0.00010		0.00010	mg/L		05/11/20 08:57	05/11/20 20:43	1
Chromium	0.0052	D2	0.0020	mg/L		05/22/20 05:16	05/28/20 00:39	2
Cobalt	0.0033	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:39	2
Lead	ND		0.00050	mg/L		05/11/20 08:57	05/11/20 20:43	1
Molybdenum	0.065		0.00050	mg/L		05/11/20 08:57	05/11/20 20:43	1
Selenium	0.0017	D1	0.0010	mg/L		05/22/20 05:16	05/29/20 14:58	2

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	150		6.0	mg/L			05/09/20 21:38	1
Bicarbonate Alkalinity as CaCO3	150		6.0	mg/L			05/09/20 21:38	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 21:38	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			05/09/20 21:38	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 21:38	1
Total Dissolved Solids	9400	D2	100	mg/L			05/11/20 11:20	1
pH	7.4	H5	1.7	SU			05/21/20 16:30	1
Temperature	8.4	H5	0.1	Degrees C			05/21/20 16:30	1
Ammonia	ND		0.50	mg/L			05/11/20 22:32	1
Total Organic Carbon	2.1		0.50	mg/L			06/01/20 15:52	1
Total Organic Carbon - Duplicates	2.1		0.50	mg/L			06/01/20 15:52	1
Total Organic Carbon - Quad	2.1		0.50	mg/L			06/01/20 15:52	1

Client Sample ID: CH-CCR-M65-0520

Lab Sample ID: 550-141925-11

Date Collected: 05/05/20 08:16

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10	mg/L		05/11/20 05:21	05/23/20 00:07	1
Manganese	0.29		0.010	mg/L		05/11/20 05:21	05/23/20 00:07	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0017		0.00050	mg/L		05/11/20 08:45	05/11/20 20:08	1
Cobalt	0.0026		0.00050	mg/L		05/11/20 08:45	05/11/20 20:08	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M65-0520

Lab Sample ID: 550-141925-11

Date Collected: 05/05/20 08:16

Matrix: Water

Date Received: 05/08/20 12:35

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	2.4	H1	1.0	mg/L			06/04/20 18:53	1
Dissolved Organic Carbon - Duplicate	2.4	H1	1.0	mg/L			06/04/20 18:53	1

Client Sample ID: CH-CCR-M66-0520

Lab Sample ID: 550-141925-12

Date Collected: 05/05/20 12:46

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4600	D2	400	mg/L			05/11/20 21:42	200
Fluoride	1.1	D1	0.80	mg/L			05/11/20 21:24	2
Nitrate Nitrite as N	ND	D1 D5	0.50	mg/L			05/12/20 21:11	5
Sulfate	3100	D2	400	mg/L			05/11/20 21:42	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		05/11/20 05:12	05/19/20 00:35	1
Boron	1.6		0.050	mg/L		05/11/20 05:12	05/19/20 00:35	1
Calcium	800		2.0	mg/L		05/11/20 05:12	05/19/20 00:35	1
Iron	0.23		0.10	mg/L		05/11/20 05:12	05/19/20 00:35	1
Lithium	0.68		0.20	mg/L		05/11/20 05:12	05/21/20 18:56	1
Magnesium	280		2.0	mg/L		05/11/20 05:12	05/19/20 00:35	1
Manganese	4.3		0.010	mg/L		05/11/20 05:12	05/19/20 00:35	1
Potassium	14		0.50	mg/L		05/11/20 05:12	05/19/20 00:35	1
Sodium	2400	B3 D1	5.0	mg/L		05/11/20 05:12	05/26/20 18:54	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0017	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:41	2
Barium	0.015	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:41	2
Cadmium	0.00027		0.00010	mg/L		05/11/20 08:57	05/11/20 20:45	1
Chromium	0.016	D2	0.0020	mg/L		05/22/20 05:16	05/28/20 00:41	2
Cobalt	0.0014	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:41	2
Lead	ND		0.00050	mg/L		05/11/20 08:57	05/11/20 20:45	1
Molybdenum	0.014		0.00050	mg/L		05/11/20 08:57	05/11/20 20:45	1
Selenium	0.027	D1	0.0010	mg/L		05/22/20 05:16	05/29/20 15:00	2

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	150		6.0	mg/L			05/09/20 21:47	1
Bicarbonate Alkalinity as CaCO3	150		6.0	mg/L			05/09/20 21:47	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 21:47	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			05/09/20 21:47	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 21:47	1
Total Dissolved Solids	11000	D2	100	mg/L			05/11/20 11:20	1
pH	7.3	H5	1.7	SU			05/21/20 16:30	1
Temperature	10.7	H5	0.1	Degrees C			05/21/20 16:30	1
Ammonia	ND		0.50	mg/L			05/11/20 22:38	1
Total Organic Carbon	2.7	N1	0.50	mg/L			05/11/20 20:21	1
Total Organic Carbon - Duplicates	2.7	N1	0.50	mg/L			05/11/20 20:21	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M66-0520

Lab Sample ID: 550-141925-12

Date Collected: 05/05/20 12:46

Matrix: Water

Date Received: 05/08/20 12:35

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	2.7	N1	0.50	mg/L			05/11/20 20:21	1

Client Sample ID: CH-CCR-M66-0520

Lab Sample ID: 550-141925-13

Date Collected: 05/05/20 12:46

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.15		0.10	mg/L		05/11/20 05:21	05/23/20 00:11	1
Manganese	4.1		0.010	mg/L		05/11/20 05:21	05/23/20 00:11	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0017		0.00050	mg/L		05/11/20 08:45	05/11/20 20:10	1
Cobalt	0.0010		0.00050	mg/L		05/11/20 08:45	05/11/20 20:10	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	2.3	H1	1.0	mg/L			06/04/20 19:07	1
Dissolved Organic Carbon - Duplicate	2.2	H1	1.0	mg/L			06/04/20 19:07	1

Client Sample ID: CH-CCR-M67-0520

Lab Sample ID: 550-141925-14

Date Collected: 05/05/20 11:22

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5400	D2	400	mg/L			05/18/20 20:59	200
Fluoride	0.95	D1	0.80	mg/L			05/14/20 23:39	2
Nitrate Nitrite as N	ND	D1 D5	0.50	mg/L			05/12/20 22:33	5
Sulfate	1500	D2	400	mg/L			05/18/20 20:59	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		05/11/20 05:12	05/19/20 00:51	1
Boron	0.36		0.050	mg/L		05/11/20 05:12	05/19/20 00:51	1
Calcium	1700		2.0	mg/L		05/11/20 05:12	05/19/20 00:51	1
Iron	8.0		0.10	mg/L		05/11/20 05:12	05/19/20 00:51	1
Lithium	0.25		0.20	mg/L		05/11/20 05:12	05/21/20 19:12	1
Magnesium	290		2.0	mg/L		05/11/20 05:12	05/19/20 00:51	1
Manganese	5.1		0.010	mg/L		05/11/20 05:12	05/19/20 00:51	1
Potassium	14		0.50	mg/L		05/11/20 05:12	05/19/20 00:51	1
Sodium	1500	B3 D1	5.0	mg/L		05/11/20 05:12	05/26/20 19:02	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.017	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:43	2
Barium	0.028	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:43	2
Cadmium	ND		0.00010	mg/L		05/11/20 08:57	05/11/20 20:47	1
Chromium	ND	D2	0.0020	mg/L		05/22/20 05:16	05/28/20 00:43	2
Cobalt	0.0045	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:43	2

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M67-0520

Lab Sample ID: 550-141925-14

Date Collected: 05/05/20 11:22

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.00050	mg/L		05/11/20 08:57	05/11/20 20:47	1
Molybdenum	0.0043		0.00050	mg/L		05/11/20 08:57	05/11/20 20:47	1
Selenium	ND	D1	0.0010	mg/L		05/22/20 05:16	05/29/20 15:02	2

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	170		6.0	mg/L			05/09/20 21:55	1
Bicarbonate Alkalinity as CaCO3	170		6.0	mg/L			05/09/20 21:55	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 21:55	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			05/09/20 21:55	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 21:55	1
Total Dissolved Solids	11000	D2	100	mg/L			05/11/20 11:20	1
pH	7.1	H5	1.7	SU			05/21/20 16:30	1
Temperature	10.4	H5	0.1	Degrees C			05/21/20 16:30	1
Ammonia	1.4		0.50	mg/L			05/11/20 22:47	1
Total Organic Carbon	2.3	N1	0.50	mg/L			05/11/20 20:36	1
Total Organic Carbon - Duplicates	2.4	N1	0.50	mg/L			05/11/20 20:36	1
Total Organic Carbon - Quad	2.3	N1	0.50	mg/L			05/11/20 20:36	1

Client Sample ID: CH-CCR-M67-0520

Lab Sample ID: 550-141925-15

Date Collected: 05/05/20 11:22

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	7.8		0.10	mg/L		05/11/20 05:21	05/23/20 00:15	1
Manganese	4.9		0.010	mg/L		05/11/20 05:21	05/23/20 00:15	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.015		0.00050	mg/L		05/11/20 08:45	05/22/20 18:50	1
Cobalt	0.0038		0.00050	mg/L		05/11/20 08:45	05/22/20 18:50	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	2.2	H1	1.0	mg/L			06/04/20 19:24	1
Dissolved Organic Carbon - Duplicate	2.2	H1	1.0	mg/L			06/04/20 19:24	1

Client Sample ID: CH-CCR-W123-0520

Lab Sample ID: 550-141925-16

Date Collected: 05/06/20 11:14

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5700	D2	400	mg/L			05/15/20 03:45	200
Fluoride	4.8	D1	0.80	mg/L			05/15/20 03:18	2
Nitrate Nitrite as N	0.83	D1	0.50	mg/L			05/12/20 23:28	5
Sulfate	3400	D2	400	mg/L			05/15/20 03:45	200

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-W123-0520

Lab Sample ID: 550-141925-16

Date Collected: 05/06/20 11:14

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		05/11/20 05:12	05/19/20 00:55	1
Boron	37		0.050	mg/L		05/11/20 05:12	05/19/20 00:55	1
Calcium	780		2.0	mg/L		05/11/20 05:12	05/19/20 00:55	1
Iron	0.16		0.10	mg/L		05/11/20 05:12	05/19/20 00:55	1
Lithium	0.83		0.20	mg/L		05/11/20 05:12	05/21/20 19:16	1
Magnesium	270		2.0	mg/L		05/11/20 05:12	05/19/20 00:55	1
Manganese	ND		0.010	mg/L		05/11/20 05:12	05/19/20 00:55	1
Potassium	48		0.50	mg/L		05/11/20 05:12	05/19/20 00:55	1
Sodium	3500	B3 D1	5.0	mg/L		05/11/20 05:12	05/26/20 19:06	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0012	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:45	2
Barium	0.011	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:45	2
Cadmium	ND		0.00010	mg/L		05/11/20 08:57	05/11/20 20:49	1
Chromium	0.076	D2	0.0020	mg/L		05/22/20 05:16	05/28/20 00:45	2
Cobalt	0.0030	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:45	2
Lead	ND		0.00050	mg/L		05/11/20 08:57	05/11/20 20:49	1
Molybdenum	0.30		0.00050	mg/L		05/11/20 08:57	05/11/20 20:49	1
Selenium	0.0027	D1	0.0010	mg/L		05/22/20 05:16	05/29/20 15:04	2

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	54		6.0	mg/L			05/09/20 22:04	1
Bicarbonate Alkalinity as CaCO3	54		6.0	mg/L			05/09/20 22:04	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 22:04	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			05/09/20 22:04	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 22:04	1
Total Dissolved Solids	13000	D2	200	mg/L			05/11/20 11:20	1
pH	7.5	H5	1.7	SU			05/21/20 16:30	1
Temperature	10.8	H5	0.1	Degrees C			05/21/20 16:30	1
Ammonia	ND		0.50	mg/L			05/11/20 22:54	1
Total Organic Carbon	2.1	N1	0.50	mg/L			05/11/20 20:57	1
Total Organic Carbon - Duplicates	2.1	N1	0.50	mg/L			05/11/20 20:57	1
Total Organic Carbon - Quad	2.1	N1	0.50	mg/L			05/11/20 20:57	1

Client Sample ID: CH-CCR-W123-0520

Lab Sample ID: 550-141925-17

Date Collected: 05/06/20 11:14

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10	mg/L		05/11/20 05:21	05/23/20 00:19	1
Manganese	ND		0.010	mg/L		05/11/20 05:21	05/23/20 00:19	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0015		0.00050	mg/L		05/11/20 08:45	05/22/20 18:52	1
Cobalt	0.0023		0.00050	mg/L		05/11/20 08:45	05/22/20 18:52	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-W123-0520

Lab Sample ID: 550-141925-17

Date Collected: 05/06/20 11:14

Matrix: Water

Date Received: 05/08/20 12:35

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.9	V1	1.0	mg/L			06/03/20 11:18	1
Dissolved Organic Carbon - Duplicate	1.9	V1	1.0	mg/L			06/03/20 11:18	1

Client Sample ID: CH-CCR-W125-0520

Lab Sample ID: 550-141925-18

Date Collected: 05/06/20 12:45

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	680	D2	400	mg/L			05/15/20 04:40	200
Fluoride	ND	D1 D5	0.80	mg/L			05/15/20 04:13	2
Sulfate	320	D1	4.0	mg/L			05/15/20 04:13	2

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	130		2.0	mg/L		05/11/20 05:12	05/19/20 00:59	1
Magnesium	51		2.0	mg/L		05/11/20 05:12	05/19/20 00:59	1
Potassium	4.3		0.50	mg/L		05/11/20 05:12	05/19/20 00:59	1
Sodium	450		0.50	mg/L		05/11/20 05:12	05/28/20 03:20	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	160		6.0	mg/L			05/09/20 22:13	1
Bicarbonate Alkalinity as CaCO3	160		6.0	mg/L			05/09/20 22:13	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 22:13	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			05/09/20 22:13	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 22:13	1

Client Sample ID: CH-CCR-W126-0520

Lab Sample ID: 550-141925-19

Date Collected: 05/05/20 14:09

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6900	D2	400	mg/L			05/15/20 05:35	200
Fluoride	4.1	D1	0.80	mg/L			05/15/20 05:07	2
Nitrate Nitrite as N	ND	D1 D5	0.50	mg/L			05/12/20 23:55	5
Sulfate	4100	D2	400	mg/L			05/15/20 05:35	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		05/11/20 05:12	05/19/20 01:03	1
Boron	50		0.050	mg/L		05/11/20 05:12	05/19/20 01:03	1
Calcium	780		2.0	mg/L		05/11/20 05:12	05/19/20 01:03	1
Iron	ND		0.10	mg/L		05/11/20 05:12	05/19/20 01:03	1
Lithium	1.1		0.20	mg/L		05/11/20 05:12	05/21/20 19:24	1
Magnesium	500		2.0	mg/L		05/11/20 05:12	05/19/20 01:03	1
Manganese	0.12		0.010	mg/L		05/11/20 05:12	05/19/20 01:03	1
Potassium	87		0.50	mg/L		05/11/20 05:12	05/19/20 01:03	1
Sodium	4200	D2	5.0	mg/L		05/11/20 05:12	05/28/20 03:37	10

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-W126-0520

Lab Sample ID: 550-141925-19

Date Collected: 05/05/20 14:09

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0014	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:47	2
Barium	0.011	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:47	2
Cadmium	ND	D2	0.00020	mg/L		05/22/20 05:16	05/28/20 00:47	2
Chromium	0.0053	D2	0.0020	mg/L		05/22/20 05:16	05/28/20 00:47	2
Cobalt	0.0038	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:47	2
Lead	ND		0.00050	mg/L		05/11/20 08:57	05/11/20 20:55	1
Molybdenum	0.22	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:47	2
Selenium	0.0015	D1	0.0010	mg/L		05/22/20 05:16	05/29/20 15:06	2

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	95		6.0	mg/L			05/09/20 22:38	1
Bicarbonate Alkalinity as CaCO3	95		6.0	mg/L			05/09/20 22:38	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 22:38	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			05/09/20 22:38	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 22:38	1
Total Dissolved Solids	16000	D2	200	mg/L			05/11/20 11:20	1
pH	7.5	H5	1.7	SU			05/21/20 16:30	1
Temperature	11.4	H5	0.1	Degrees C			05/21/20 16:30	1
Ammonia	ND		0.50	mg/L			05/11/20 23:03	1
Total Organic Carbon	2.3		0.50	mg/L			06/01/20 16:03	1
Total Organic Carbon - Duplicates	2.3		0.50	mg/L			06/01/20 16:03	1
Total Organic Carbon - Quad	2.3		0.50	mg/L			06/01/20 16:03	1

Client Sample ID: CH-CCR-W126-0520

Lab Sample ID: 550-141925-20

Date Collected: 05/05/20 14:09

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10	mg/L		05/11/20 05:21	05/23/20 00:23	1
Manganese	0.10		0.010	mg/L		05/11/20 05:21	05/23/20 00:23	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0023		0.00050	mg/L		05/11/20 08:45	05/22/20 18:54	1
Cobalt	0.0036		0.00050	mg/L		05/11/20 08:45	05/22/20 18:54	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	2.3	H1	1.0	mg/L			06/04/20 20:26	1
Dissolved Organic Carbon - Duplicate	2.3	H1	1.0	mg/L			06/04/20 20:26	1

Client Sample ID: CH-CCR-FD05-0520

Lab Sample ID: 550-141925-21

Date Collected: 05/06/20 08:13

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4100	D2	400	mg/L			05/15/20 06:30	200

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-FD05-0520

Lab Sample ID: 550-141925-21

Date Collected: 05/06/20 08:13

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND	D1 D5	0.80	mg/L			05/15/20 06:02	2
Nitrate Nitrite as N	ND	D1 D5	0.50	mg/L			05/13/20 00:23	5
Sulfate	4100	D2	400	mg/L			05/15/20 06:30	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		05/11/20 05:12	05/19/20 01:07	1
Boron	1.3		0.050	mg/L		05/11/20 05:12	05/19/20 01:07	1
Calcium	510		2.0	mg/L		05/11/20 05:12	05/19/20 01:07	1
Iron	5.5		0.10	mg/L		05/11/20 05:12	05/19/20 01:07	1
Lithium	0.47		0.20	mg/L		05/11/20 05:12	05/21/20 19:28	1
Magnesium	220		2.0	mg/L		05/11/20 05:12	05/19/20 01:07	1
Manganese	2.3		0.010	mg/L		05/11/20 05:12	05/19/20 01:07	1
Potassium	19		0.50	mg/L		05/11/20 05:12	05/19/20 01:07	1
Sodium	3800	B3 D1	5.0	mg/L		05/11/20 05:12	05/26/20 19:14	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:24	2
Barium	0.012		0.00050	mg/L		05/22/20 05:16	05/22/20 19:13	1
Cadmium	ND		0.00010	mg/L		05/11/20 08:57	05/11/20 20:57	1
Chromium	ND	D2	0.0020	mg/L		05/22/20 05:16	05/28/20 00:24	2
Cobalt	ND	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:24	2
Lead	ND		0.00050	mg/L		05/11/20 08:57	05/11/20 20:57	1
Molybdenum	0.0043		0.00050	mg/L		05/11/20 08:57	05/11/20 20:57	1
Selenium	ND	D1	0.0010	mg/L		05/22/20 05:16	05/28/20 23:00	2

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	470		6.0	mg/L			05/09/20 22:57	1
Bicarbonate Alkalinity as CaCO3	470		6.0	mg/L			05/09/20 22:57	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 22:57	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			05/09/20 22:57	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 22:57	1
Total Dissolved Solids	12000	D2	200	mg/L			05/11/20 11:20	1
pH	7.6	H5	1.7	SU			05/21/20 16:30	1
Temperature	12.1	H5	0.1	Degrees C			05/21/20 16:30	1
Ammonia	0.75		0.50	mg/L			05/11/20 23:12	1
Total Organic Carbon	5.5	N1	0.50	mg/L			05/11/20 21:31	1
Total Organic Carbon - Duplicates	5.5	N1	0.50	mg/L			05/11/20 21:31	1
Total Organic Carbon - Quad	5.5	N1	0.50	mg/L			05/11/20 21:31	1

Client Sample ID: CH-CCR-FD05-0520

Lab Sample ID: 550-141925-22

Date Collected: 05/06/20 08:13

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	4.8		0.10	mg/L		05/11/20 05:21	05/23/20 00:27	1
Manganese	1.9		0.010	mg/L		05/11/20 05:21	05/23/20 00:27	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-FD05-0520

Lab Sample ID: 550-141925-22

Date Collected: 05/06/20 08:13

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00093		0.00050	mg/L		05/11/20 08:45	05/22/20 18:56	1
Cobalt	ND		0.00050	mg/L		05/11/20 08:45	05/22/20 18:56	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	5.5	V1	1.0	mg/L			06/03/20 12:38	1
Dissolved Organic Carbon - Duplicate	5.4	V1	1.0	mg/L			06/03/20 12:38	1

Client Sample ID: CH-TANNERS-0520

Lab Sample ID: 550-141925-23

Date Collected: 05/08/20 08:02

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2200	D2	400	mg/L			05/15/20 07:25	200
Fluoride	3.8	D1	0.80	mg/L			05/15/20 06:57	2
Nitrate Nitrite as N	ND	D1 D5	0.50	mg/L			05/13/20 01:18	5
Sulfate	3100	D2	400	mg/L			05/15/20 07:25	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		05/11/20 05:12	05/19/20 01:11	1
Boron	4.0		0.050	mg/L		05/11/20 05:12	05/19/20 01:11	1
Calcium	680		2.0	mg/L		05/11/20 05:12	05/19/20 01:11	1
Iron	0.73		0.10	mg/L		05/11/20 05:12	05/19/20 01:11	1
Lithium	0.33		0.20	mg/L		05/11/20 05:12	05/21/20 19:32	1
Magnesium	260		2.0	mg/L		05/11/20 05:12	05/19/20 01:11	1
Manganese	1.7		0.010	mg/L		05/11/20 05:12	05/19/20 01:11	1
Potassium	20		0.50	mg/L		05/11/20 05:12	05/19/20 01:11	1
Sodium	1600	D2	5.0	mg/L		05/11/20 05:12	05/28/20 03:41	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0015		0.00050	mg/L		05/11/20 08:57	05/11/20 20:59	1
Barium	0.058	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:49	2
Cadmium	0.00033		0.00010	mg/L		05/11/20 08:57	05/11/20 20:59	1
Chromium	0.0021	D2	0.0020	mg/L		05/22/20 05:16	05/28/20 00:49	2
Cobalt	0.020	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:49	2
Lead	0.0070		0.00050	mg/L		05/11/20 08:57	05/11/20 20:59	1
Molybdenum	0.036		0.00050	mg/L		05/11/20 08:57	05/11/20 20:59	1
Selenium	0.00054		0.00050	mg/L		05/11/20 08:57	05/11/20 20:59	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	76		6.0	mg/L			05/09/20 23:06	1
Bicarbonate Alkalinity as CaCO3	76		6.0	mg/L			05/09/20 23:06	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 23:06	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			05/09/20 23:06	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 23:06	1
Total Dissolved Solids	8500	D2	100	mg/L			05/12/20 11:12	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-TANNERS-0520

Lab Sample ID: 550-141925-23

Date Collected: 05/08/20 08:02

Matrix: Water

Date Received: 05/08/20 12:35

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.4	H5	1.7	SU			05/21/20 16:30	1
Temperature	13.2	H5	0.1	Degrees C			05/21/20 16:30	1
Ammonia	ND		0.50	mg/L			05/18/20 22:58	1
Total Organic Carbon	1.0		0.50	mg/L			06/01/20 16:13	1
Total Organic Carbon - Duplicates	1.0		0.50	mg/L			06/01/20 16:13	1
Total Organic Carbon - Quad	1.0		0.50	mg/L			06/01/20 16:13	1

Client Sample ID: CH-CCR-W309-0520

Lab Sample ID: 550-141925-24

Date Collected: 05/04/20 14:24

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1500	D2	400	mg/L			05/15/20 09:14	200
Fluoride	1.2	D1	0.80	mg/L			05/15/20 08:47	2
Nitrate Nitrite as N	2.6	D1	0.50	mg/L			05/13/20 01:45	5
Sulfate	3200	D2	400	mg/L			05/15/20 09:14	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		05/12/20 13:26	05/13/20 20:09	1
Boron	0.46		0.050	mg/L		05/12/20 13:26	05/13/20 20:09	1
Calcium	440		2.0	mg/L		05/12/20 13:26	05/13/20 20:09	1
Iron	ND		0.10	mg/L		05/12/20 13:26	05/13/20 20:09	1
Lithium	0.50		0.20	mg/L		05/12/20 13:26	05/13/20 20:09	1
Magnesium	86		2.0	mg/L		05/12/20 13:26	05/13/20 20:09	1
Manganese	0.83		0.010	mg/L		05/12/20 13:26	05/14/20 20:14	1
Potassium	8.9		0.50	mg/L		05/12/20 13:26	05/13/20 20:09	1
Sodium	1800	D2	5.0	mg/L		05/12/20 13:26	05/19/20 21:32	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0010	mg/L		05/12/20 13:29	05/13/20 17:54	1
Arsenic	0.0047		0.00050	mg/L		05/12/20 13:29	05/13/20 18:49	1
Barium	0.0070		0.00050	mg/L		05/20/20 05:21	05/20/20 22:40	1
Cadmium	ND		0.00010	mg/L		05/12/20 13:29	05/13/20 17:54	1
Chromium	0.0052		0.0010	mg/L		05/12/20 13:29	05/13/20 18:49	1
Cobalt	ND		0.00050	mg/L		05/12/20 13:29	05/13/20 18:49	1
Lead	0.023		0.00050	mg/L		05/12/20 13:29	05/13/20 17:54	1
Molybdenum	0.010		0.00050	mg/L		05/12/20 13:29	05/13/20 17:54	1
Selenium	0.20		0.00050	mg/L		05/12/20 13:29	05/13/20 18:49	1
Thallium	ND	B3	0.00010	mg/L		05/12/20 13:29	05/13/20 17:54	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	160		6.0	mg/L			05/16/20 18:27	1
Bicarbonate Alkalinity as CaCO3	160		6.0	mg/L			05/16/20 18:27	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/16/20 18:27	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			05/16/20 18:27	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			05/16/20 18:27	1
Total Dissolved Solids	7200	D2	100	mg/L			05/11/20 11:20	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-W309-0520

Lab Sample ID: 550-141925-24

Date Collected: 05/04/20 14:24

Matrix: Water

Date Received: 05/08/20 12:35

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.5	H5	1.7	SU			05/21/20 16:30	1
Temperature	13.9	H5	0.1	Degrees C			05/21/20 16:30	1
Ammonia	ND		0.50	mg/L			05/18/20 23:05	1
Total Organic Carbon	ND		1.0	mg/L			05/29/20 21:31	1

Client Sample ID: CH-CCR-W309-0520

Lab Sample ID: 550-141925-25

Date Collected: 05/04/20 14:24

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10	mg/L		05/12/20 10:33	05/13/20 23:28	1
Manganese	0.83		0.010	mg/L		05/12/20 10:33	05/13/20 23:28	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0038		0.00050	mg/L		05/12/20 09:27	05/13/20 19:06	1
Cobalt	ND		0.00050	mg/L		05/12/20 09:27	05/13/20 19:06	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	ND		1.0	mg/L			05/30/20 08:12	1

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-210077/2

Matrix: Water

Analysis Batch: 210077

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0	mg/L			05/11/20 17:25	1
Fluoride	ND		0.40	mg/L			05/11/20 17:25	1
Sulfate	ND		2.0	mg/L			05/11/20 17:25	1

Lab Sample ID: LCS 550-210077/5

Matrix: Water

Analysis Batch: 210077

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	21.4		mg/L		107	90 - 110
Fluoride	4.00	4.17		mg/L		104	90 - 110
Sulfate	20.0	20.9		mg/L		105	90 - 110

Lab Sample ID: LCSD 550-210077/6

Matrix: Water

Analysis Batch: 210077

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	21.4		mg/L		107	90 - 110	0	20
Fluoride	4.00	4.24		mg/L		106	90 - 110	2	20
Sulfate	20.0	20.8		mg/L		104	90 - 110	0	20

Lab Sample ID: 550-141925-2 MS

Matrix: Water

Analysis Batch: 210077

Client Sample ID: CH-CCR-M46-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	ND	M2 D1 R13 D5	8.00	5.31	D1 M2	mg/L		59	80 - 120

Lab Sample ID: 550-141925-2 MS

Matrix: Water

Analysis Batch: 210077

Client Sample ID: CH-CCR-M46-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	7100	M1 D2	4000	10900	D2	mg/L		94	80 - 120
Sulfate	7800	M1 D2 R13	4000	11100	D2	mg/L		82	80 - 120

Lab Sample ID: 550-141925-2 MSD

Matrix: Water

Analysis Batch: 210077

Client Sample ID: CH-CCR-M46-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	ND	M2 D1 R13 D5	8.00	6.86	D1 M2 R13	mg/L		78	80 - 120	26	20

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-141925-2 MSD

Matrix: Water

Analysis Batch: 210077

Client Sample ID: CH-CCR-M46-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	7100	M1 D2	4000	12900	D2 M1	mg/L		145	80 - 120	17	20
Sulfate	7800	M1 D2 R13	4000	14500	D2 M1 R13	mg/L		169	80 - 120	27	20

Lab Sample ID: MB 550-210078/2

Matrix: Water

Analysis Batch: 210078

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0	mg/L			05/11/20 14:23	1
Fluoride	ND		0.40	mg/L			05/11/20 14:23	1
Sulfate	ND		2.0	mg/L			05/11/20 14:23	1

Lab Sample ID: LCS 550-210078/5

Matrix: Water

Analysis Batch: 210078

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	20.9		mg/L		105	90 - 110
Fluoride	4.00	4.17		mg/L		104	90 - 110
Sulfate	20.0	20.8		mg/L		104	90 - 110

Lab Sample ID: LCSD 550-210078/6

Matrix: Water

Analysis Batch: 210078

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	20.9		mg/L		105	90 - 110	0	20
Fluoride	4.00	4.17		mg/L		104	90 - 110	0	20
Sulfate	20.0	20.8		mg/L		104	90 - 110	0	20

Lab Sample ID: 550-141924-A-4 MS ^100

Matrix: Water

Analysis Batch: 210078

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	1300	D2	2000	3600	D2	mg/L		114	80 - 120

Lab Sample ID: 550-141924-A-4 MSD ^100

Matrix: Water

Analysis Batch: 210078

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	1300	D2	2000	3600	D2	mg/L		114	80 - 120	0	20

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-141924-B-4 MS ^2

Matrix: Water

Analysis Batch: 210078

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	1.6	D1	8.00	9.96	D1	mg/L		104	80 - 120
Sulfate	350	D1 M3	40.0	391	D1 M3	mg/L		95	80 - 120

Lab Sample ID: 550-141924-B-4 MSD ^2

Matrix: Water

Analysis Batch: 210078

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	1.6	D1	8.00	10.1	D1	mg/L		106	80 - 120	1	20
Sulfate	350	D1 M3	40.0	390	D1 M3	mg/L		92	80 - 120	0	20

Lab Sample ID: MB 550-210201/2

Matrix: Water

Analysis Batch: 210201

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	ND		0.10	mg/L			05/12/20 14:47	1

Lab Sample ID: LCS 550-210201/5

Matrix: Water

Analysis Batch: 210201

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	8.00	8.53		mg/L		107	90 - 110

Lab Sample ID: LCSD 550-210201/6

Matrix: Water

Analysis Batch: 210201

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate Nitrite as N	8.00	8.53		mg/L		107	90 - 110	0	20

Lab Sample ID: 550-141925-2 MS

Matrix: Water

Analysis Batch: 210201

Client Sample ID: CH-CCR-M46-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	ND	D1 D5 M2 R13	40.0	41.6	D1	mg/L		104	80 - 120

Lab Sample ID: 550-141925-2 MSD

Matrix: Water

Analysis Batch: 210201

Client Sample ID: CH-CCR-M46-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate Nitrite as N	ND	D1 D5 M2 R13	40.0	19.9	D1 M2 R13	mg/L		50	80 - 120	71	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 550-210424/2

Matrix: Water

Analysis Batch: 210424

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0	mg/L			05/14/20 14:03	1
Fluoride	ND		0.40	mg/L			05/14/20 14:03	1
Sulfate	ND		2.0	mg/L			05/14/20 14:03	1

Lab Sample ID: LCS 550-210424/5

Matrix: Water

Analysis Batch: 210424

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	21.2		mg/L		106	90 - 110
Fluoride	4.00	4.23		mg/L		106	90 - 110
Sulfate	20.0	21.0		mg/L		105	90 - 110

Lab Sample ID: LCSD 550-210424/6

Matrix: Water

Analysis Batch: 210424

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	21.2		mg/L		106	90 - 110	0	20
Fluoride	4.00	4.22		mg/L		106	90 - 110	0	20
Sulfate	20.0	21.0		mg/L		105	90 - 110	0	20

Lab Sample ID: 550-141925-14 MS

Matrix: Water

Analysis Batch: 210424

Client Sample ID: CH-CCR-M67-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.95	D1	8.00	9.23	D1	mg/L		103	80 - 120

Lab Sample ID: 550-141925-14 MSD

Matrix: Water

Analysis Batch: 210424

Client Sample ID: CH-CCR-M67-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.95	D1	8.00	9.22	D1	mg/L		103	80 - 120	0	20

Lab Sample ID: 550-142112-A-3 MS

Matrix: Water

Analysis Batch: 210424

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	7.5		20.0	30.2		mg/L		113	80 - 120
Fluoride	ND		4.00	4.42		mg/L		107	80 - 120
Sulfate	26		20.0	46.6		mg/L		105	80 - 120

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-142112-A-3 MSD

Matrix: Water

Analysis Batch: 210424

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	7.5		20.0	30.3		mg/L		114	80 - 120	0	20
Fluoride	ND		4.00	4.44		mg/L		108	80 - 120	0	20
Sulfate	26		20.0	46.7		mg/L		105	80 - 120	0	20

Lab Sample ID: MB 550-210611/2

Matrix: Water

Analysis Batch: 210611

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0	mg/L			05/18/20 15:31	1
Fluoride	ND		0.40	mg/L			05/18/20 15:31	1
Sulfate	ND		2.0	mg/L			05/18/20 15:31	1

Lab Sample ID: LCS 550-210611/5

Matrix: Water

Analysis Batch: 210611

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	21.2		mg/L		106	90 - 110
Fluoride	4.00	4.24		mg/L		106	90 - 110
Sulfate	20.0	21.2		mg/L		106	90 - 110

Lab Sample ID: LCSD 550-210611/6

Matrix: Water

Analysis Batch: 210611

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	21.2		mg/L		106	90 - 110	0	20
Fluoride	4.00	4.26		mg/L		107	90 - 110	1	20
Sulfate	20.0	21.2		mg/L		106	90 - 110	0	20

Lab Sample ID: 550-141925-14 MS

Matrix: Water

Analysis Batch: 210611

Client Sample ID: CH-CCR-M67-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5400	D2	4000	10200	D2	mg/L		120	80 - 120
Sulfate	1500	D2	4000	5720	D2	mg/L		105	80 - 120

Lab Sample ID: 550-141925-14 MSD

Matrix: Water

Analysis Batch: 210611

Client Sample ID: CH-CCR-M67-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	5400	D2	4000	9830	D2	mg/L		111	80 - 120	4	20
Sulfate	1500	D2	4000	5650	D2	mg/L		104	80 - 120	1	20

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 550-209972/1-A

Matrix: Water

Analysis Batch: 210622

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 209972

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		05/11/20 05:12	05/18/20 23:31	1
Boron	ND		0.050	mg/L		05/11/20 05:12	05/18/20 23:31	1
Calcium	ND		2.0	mg/L		05/11/20 05:12	05/18/20 23:31	1
Iron	ND		0.10	mg/L		05/11/20 05:12	05/18/20 23:31	1
Magnesium	ND		2.0	mg/L		05/11/20 05:12	05/18/20 23:31	1
Manganese	ND		0.010	mg/L		05/11/20 05:12	05/18/20 23:31	1
Potassium	ND		0.50	mg/L		05/11/20 05:12	05/18/20 23:31	1

Lab Sample ID: MB 550-209972/1-A

Matrix: Water

Analysis Batch: 210962

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 209972

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.20	mg/L		05/11/20 05:12	05/21/20 18:16	1

Lab Sample ID: MB 550-209972/1-A

Matrix: Water

Analysis Batch: 211270

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 209972

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	ND		0.50	mg/L		05/11/20 05:12	05/28/20 02:52	1

Lab Sample ID: LCS 550-209972/2-A

Matrix: Water

Analysis Batch: 210622

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 209972

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	1.00	1.11		mg/L		111	85 - 115
Boron	1.00	0.979		mg/L		98	85 - 115
Calcium	21.0	22.4		mg/L		107	85 - 115
Iron	1.00	1.06		mg/L		106	85 - 115
Magnesium	21.0	22.0		mg/L		105	85 - 115
Manganese	1.00	1.03		mg/L		103	85 - 115
Potassium	20.0	20.5		mg/L		102	85 - 115

Lab Sample ID: LCS 550-209972/2-A

Matrix: Water

Analysis Batch: 210962

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 209972

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	1.03		mg/L		103	85 - 115

Lab Sample ID: LCS 550-209972/2-A

Matrix: Water

Analysis Batch: 211270

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 209972

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sodium	20.0	19.1		mg/L		95	85 - 115

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCSD 550-209972/3-A

Matrix: Water

Analysis Batch: 210622

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 209972

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Beryllium	1.00	1.07		mg/L		107	85 - 115	4	20
Boron	1.00	0.989		mg/L		99	85 - 115	1	20
Calcium	21.0	21.6		mg/L		103	85 - 115	4	20
Iron	1.00	1.02		mg/L		102	85 - 115	4	20
Magnesium	21.0	21.1		mg/L		100	85 - 115	4	20
Manganese	1.00	1.04		mg/L		104	85 - 115	1	20
Potassium	20.0	19.7		mg/L		99	85 - 115	4	20

Lab Sample ID: LCSD 550-209972/3-A

Matrix: Water

Analysis Batch: 210962

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 209972

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	1.00	1.04		mg/L		104	85 - 115	1	20

Lab Sample ID: LCSD 550-209972/3-A

Matrix: Water

Analysis Batch: 211270

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 209972

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sodium	20.0	18.8		mg/L		94	85 - 115	1	20

Lab Sample ID: MB 550-209973/1-A

Matrix: Water

Analysis Batch: 211052

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 209973

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10	mg/L		05/11/20 05:21	05/22/20 23:31	1
Manganese	ND		0.010	mg/L		05/11/20 05:21	05/22/20 23:31	1

Lab Sample ID: LCS 550-209973/2-A

Matrix: Water

Analysis Batch: 211052

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 209973

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	1.00	0.952		mg/L		95	85 - 115		
Manganese	1.00	0.992		mg/L		99	85 - 115		

Lab Sample ID: LCSD 550-209973/3-A

Matrix: Water

Analysis Batch: 211052

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 209973

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	1.00	1.00		mg/L		100	85 - 115	5	20
Manganese	1.00	0.989		mg/L		99	85 - 115	0	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: MB 550-210130/1-A
Matrix: Water
Analysis Batch: 210333

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 210130

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10	mg/L		05/12/20 10:33	05/13/20 22:43	1
Manganese	ND		0.010	mg/L		05/12/20 10:33	05/13/20 22:43	1

Lab Sample ID: LCS 550-210130/2-A
Matrix: Water
Analysis Batch: 210333

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 210130

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	1.00	0.988		mg/L		99	85 - 115
Manganese	1.00	1.01		mg/L		101	85 - 115

Lab Sample ID: LCSD 550-210130/3-A
Matrix: Water
Analysis Batch: 210333

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 210130

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	1.00	0.981		mg/L		98	85 - 115	1	20
Manganese	1.00	1.00		mg/L		100	85 - 115	1	20

Lab Sample ID: MB 550-210154/1-A
Matrix: Water
Analysis Batch: 210331

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 210154

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		05/12/20 13:26	05/13/20 19:29	1
Boron	ND		0.050	mg/L		05/12/20 13:26	05/13/20 19:29	1
Calcium	ND		2.0	mg/L		05/12/20 13:26	05/13/20 19:29	1
Iron	ND		0.10	mg/L		05/12/20 13:26	05/13/20 19:29	1
Lithium	ND		0.20	mg/L		05/12/20 13:26	05/13/20 19:29	1
Magnesium	ND		2.0	mg/L		05/12/20 13:26	05/13/20 19:29	1
Potassium	ND		0.50	mg/L		05/12/20 13:26	05/13/20 19:29	1

Lab Sample ID: MB 550-210154/1-A
Matrix: Water
Analysis Batch: 210442

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 210154

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		0.010	mg/L		05/12/20 13:26	05/14/20 19:38	1

Lab Sample ID: LCS 550-210154/2-A
Matrix: Water
Analysis Batch: 210331

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 210154

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	1.00	1.04		mg/L		104	85 - 115
Boron	1.00	0.963		mg/L		96	85 - 115
Calcium	21.0	21.5		mg/L		102	85 - 115
Iron	1.00	1.00		mg/L		100	85 - 115
Lithium	1.00	0.980		mg/L		98	85 - 115
Magnesium	21.0	21.2		mg/L		101	85 - 115

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCS 550-210154/2-A
Matrix: Water
Analysis Batch: 210331

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 210154

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Potassium	20.0	20.2		mg/L		101	85 - 115

Lab Sample ID: LCS 550-210154/2-A
Matrix: Water
Analysis Batch: 210442

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 210154

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Manganese	1.00	1.02		mg/L		102	85 - 115

Lab Sample ID: LCSD 550-210154/3-A
Matrix: Water
Analysis Batch: 210331

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 210154

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Beryllium	1.00	1.10		mg/L		110	85 - 115	6	20
Boron	1.00	0.966		mg/L		97	85 - 115	0	20
Calcium	21.0	22.8		mg/L		109	85 - 115	6	20
Iron	1.00	1.07		mg/L		107	85 - 115	6	20
Lithium	1.00	1.04		mg/L		104	85 - 115	6	20
Magnesium	21.0	22.5		mg/L		107	85 - 115	6	20
Potassium	20.0	21.3		mg/L		107	85 - 115	5	20

Lab Sample ID: LCSD 550-210154/3-A
Matrix: Water
Analysis Batch: 210442

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 210154

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Manganese	1.00	1.03		mg/L		103	85 - 115	0	20

Lab Sample ID: 550-141925-3 MS
Matrix: Water
Analysis Batch: 211052

Client Sample ID: CH-CCR-M46-0520
Prep Type: Dissolved
Prep Batch: 209973

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.68		1.00	1.62		mg/L		94	70 - 130
Manganese	3.6	M2	1.00	4.52		mg/L		88	70 - 130

Lab Sample ID: 550-141925-3 MSD
Matrix: Water
Analysis Batch: 211052

Client Sample ID: CH-CCR-M46-0520
Prep Type: Dissolved
Prep Batch: 209973

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Iron	0.68		1.00	1.60		mg/L		92	70 - 130	1	20
Manganese	3.6	M2	1.00	4.30	M2	mg/L		66	70 - 130	5	20

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 550-141869-A-2-C MS
Matrix: Water
Analysis Batch: 210333

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 210130

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	ND		1.00	1.08		mg/L		99	70 - 130
Manganese	0.018		1.00	1.04		mg/L		102	70 - 130

Lab Sample ID: 550-141869-A-2-D MSD
Matrix: Water
Analysis Batch: 210333

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 210130

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	ND		1.00	1.09		mg/L		99	70 - 130	1	20
Manganese	0.018		1.00	1.04		mg/L		103	70 - 130	1	20

Lab Sample ID: 550-141998-C-1-A MS
Matrix: Water
Analysis Batch: 210331

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 210154

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	ND		1.00	1.04		mg/L		104	70 - 130
Boron	ND		1.00	0.980		mg/L		98	70 - 130
Calcium	ND		21.0	21.4		mg/L		102	70 - 130
Iron	ND		1.00	1.01		mg/L		101	70 - 130
Lithium	ND		1.00	0.965		mg/L		96	70 - 130
Magnesium	ND		21.0	21.1		mg/L		100	70 - 130
Potassium	ND		20.0	20.1		mg/L		101	70 - 130

Lab Sample ID: 550-141998-C-1-A MS
Matrix: Water
Analysis Batch: 210442

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 210154

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Manganese	ND		1.00	1.03		mg/L		103	70 - 130

Lab Sample ID: 550-141998-C-1-B MSD
Matrix: Water
Analysis Batch: 210331

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 210154

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Beryllium	ND		1.00	0.975		mg/L		97	70 - 130	6	20
Boron	ND		1.00	0.999		mg/L		100	70 - 130	2	20
Calcium	ND		21.0	20.2		mg/L		96	70 - 130	6	20
Iron	ND		1.00	0.937		mg/L		94	70 - 130	7	20
Lithium	ND		1.00	0.901		mg/L		90	70 - 130	7	20
Magnesium	ND		21.0	19.9		mg/L		95	70 - 130	6	20
Potassium	ND		20.0	18.9		mg/L		95	70 - 130	6	20

Lab Sample ID: 550-141998-C-1-B MSD
Matrix: Water
Analysis Batch: 210442

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 210154

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Manganese	ND		1.00	1.03		mg/L		103	70 - 130	0	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 200.8 LL - Metals (ICP/MS)

Lab Sample ID: MB 550-210012/1-A

Matrix: Water

Analysis Batch: 210084

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 210012

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.00050	mg/L		05/11/20 08:45	05/11/20 19:49	1
Cobalt	ND		0.00050	mg/L		05/11/20 08:45	05/11/20 19:49	1

Lab Sample ID: LCS 550-210012/2-A

Matrix: Water

Analysis Batch: 210084

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 210012

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.0898		mg/L		90	85 - 115
Cobalt	0.100	0.0850		mg/L		85	85 - 115

Lab Sample ID: LCSD 550-210012/3-A

Matrix: Water

Analysis Batch: 210084

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 210012

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.100	0.0902		mg/L		90	85 - 115	0	20
Cobalt	0.100	0.0856		mg/L		86	85 - 115	1	20

Lab Sample ID: MB 550-210014/1-A

Matrix: Water

Analysis Batch: 210085

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 210014

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.00050	mg/L		05/11/20 08:57	05/11/20 20:24	1
Cadmium	ND		0.00010	mg/L		05/11/20 08:57	05/11/20 20:24	1
Lead	ND		0.00050	mg/L		05/11/20 08:57	05/11/20 20:24	1
Molybdenum	ND		0.00050	mg/L		05/11/20 08:57	05/11/20 20:24	1
Selenium	ND		0.00050	mg/L		05/11/20 08:57	05/11/20 20:24	1

Lab Sample ID: MB 550-210014/1-A

Matrix: Water

Analysis Batch: 210942

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 210014

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND		0.0010	mg/L		05/11/20 08:57	05/21/20 21:30	1
Cobalt	ND		0.00050	mg/L		05/11/20 08:57	05/21/20 21:30	1

Lab Sample ID: LCS 550-210014/2-A

Matrix: Water

Analysis Batch: 210085

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 210014

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.0890		mg/L		89	85 - 115
Cadmium	0.100	0.0869		mg/L		87	85 - 115
Lead	0.100	0.0873		mg/L		87	85 - 115
Molybdenum	0.100	0.0865		mg/L		87	85 - 115
Selenium	0.100	0.0885		mg/L		89	85 - 115

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 550-210014/2-A
Matrix: Water
Analysis Batch: 210942

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 210014

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.100	0.0988		mg/L		99	85 - 115
Cobalt	0.100	0.0986		mg/L		99	85 - 115

Lab Sample ID: LCSD 550-210014/3-A
Matrix: Water
Analysis Batch: 210085

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 210014

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.100	0.0919		mg/L		92	85 - 115	3	20
Cadmium	0.100	0.0873		mg/L		87	85 - 115	1	20
Lead	0.100	0.0882		mg/L		88	85 - 115	1	20
Molybdenum	0.100	0.0863		mg/L		86	85 - 115	0	20
Selenium	0.100	0.0912		mg/L		91	85 - 115	3	20

Lab Sample ID: LCSD 550-210014/3-A
Matrix: Water
Analysis Batch: 210942

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 210014

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium	0.100	0.0985		mg/L		99	85 - 115	0	20
Cobalt	0.100	0.0985		mg/L		99	85 - 115	0	20

Lab Sample ID: 550-141925-4 MS
Matrix: Water
Analysis Batch: 210085

Client Sample ID: CH-CCR-M50A-0520
Prep Type: Total/NA
Prep Batch: 210014

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.0027		0.100	0.101		mg/L		98	70 - 130
Cadmium	ND		0.100	0.0812		mg/L		81	70 - 130
Lead	ND		0.100	0.0805		mg/L		80	70 - 130
Molybdenum	0.0065		0.100	0.0955		mg/L		89	70 - 130
Selenium	0.0018		0.100	0.113		mg/L		111	70 - 130

Lab Sample ID: 550-141925-4 MS
Matrix: Water
Analysis Batch: 210942

Client Sample ID: CH-CCR-M50A-0520
Prep Type: Total/NA
Prep Batch: 210014

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.0024		0.100	0.0988		mg/L		96	70 - 130
Cobalt	0.00066		0.100	0.0928		mg/L		92	70 - 130

Lab Sample ID: 550-141925-4 MSD
Matrix: Water
Analysis Batch: 210085

Client Sample ID: CH-CCR-M50A-0520
Prep Type: Total/NA
Prep Batch: 210014

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.0027		0.100	0.104		mg/L		101	70 - 130	3	20
Cadmium	ND		0.100	0.0821		mg/L		82	70 - 130	1	20
Lead	ND		0.100	0.0827		mg/L		83	70 - 130	3	20
Molybdenum	0.0065		0.100	0.0952		mg/L		89	70 - 130	0	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: 550-141925-4 MSD

Matrix: Water

Analysis Batch: 210085

Client Sample ID: CH-CCR-M50A-0520

Prep Type: Total/NA

Prep Batch: 210014

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Selenium	0.0018		0.100	0.114		mg/L		112	70 - 130	2	20

Lab Sample ID: 550-141925-4 MSD

Matrix: Water

Analysis Batch: 210942

Client Sample ID: CH-CCR-M50A-0520

Prep Type: Total/NA

Prep Batch: 210014

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium	0.0024		0.100	0.101		mg/L		98	70 - 130	2	20
Cobalt	0.00066		0.100	0.0953		mg/L		95	70 - 130	3	20

Lab Sample ID: MB 550-210126/1-A

Matrix: Water

Analysis Batch: 210304

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 210126

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.00050	mg/L		05/12/20 09:27	05/13/20 18:56	1
Cobalt	ND		0.00050	mg/L		05/12/20 09:27	05/13/20 18:56	1

Lab Sample ID: LCS 550-210126/2-A

Matrix: Water

Analysis Batch: 210304

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 210126

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.0930		mg/L		93	85 - 115
Cobalt	0.100	0.0949		mg/L		95	85 - 115

Lab Sample ID: LCSD 550-210126/3-A

Matrix: Water

Analysis Batch: 210304

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 210126

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.100	0.0953		mg/L		95	85 - 115	2	20
Cobalt	0.100	0.0975		mg/L		97	85 - 115	3	20

Lab Sample ID: MB 550-210155/1-A

Matrix: Water

Analysis Batch: 210296

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 210155

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0010	mg/L		05/12/20 13:29	05/13/20 17:21	1
Cadmium	ND		0.00010	mg/L		05/12/20 13:29	05/13/20 17:21	1
Lead	ND		0.00050	mg/L		05/12/20 13:29	05/13/20 17:21	1
Molybdenum	ND		0.00050	mg/L		05/12/20 13:29	05/13/20 17:21	1
Thallium	ND		0.00010	mg/L		05/12/20 13:29	05/13/20 17:21	1

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 550-210155/1-A

Matrix: Water

Analysis Batch: 210302

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 210155

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.00050	mg/L		05/12/20 13:29	05/13/20 18:26	1
Chromium	ND		0.0010	mg/L		05/12/20 13:29	05/13/20 18:26	1
Cobalt	ND		0.00050	mg/L		05/12/20 13:29	05/13/20 18:26	1
Selenium	ND		0.00050	mg/L		05/12/20 13:29	05/13/20 18:26	1

Lab Sample ID: LCS 550-210155/2-A

Matrix: Water

Analysis Batch: 210296

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 210155

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.100	0.0991		mg/L		99	85 - 115
Cadmium	0.100	0.0979		mg/L		98	85 - 115
Lead	0.100	0.0968		mg/L		97	85 - 115
Molybdenum	0.100	0.0981		mg/L		98	85 - 115
Thallium	0.100	0.0969		mg/L		97	85 - 115

Lab Sample ID: LCS 550-210155/2-A

Matrix: Water

Analysis Batch: 210302

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 210155

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.0939		mg/L		94	85 - 115
Chromium	0.100	0.0937		mg/L		94	85 - 115
Cobalt	0.100	0.0939		mg/L		94	85 - 115
Selenium	0.100	0.0945		mg/L		95	85 - 115

Lab Sample ID: LCSD 550-210155/3-A

Matrix: Water

Analysis Batch: 210296

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 210155

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Antimony	0.100	0.0985		mg/L		98	85 - 115	1	20
Cadmium	0.100	0.0964		mg/L		96	85 - 115	2	20
Lead	0.100	0.0994		mg/L		99	85 - 115	3	20
Molybdenum	0.100	0.0964		mg/L		96	85 - 115	2	20
Thallium	0.100	0.0982		mg/L		98	85 - 115	1	20

Lab Sample ID: LCSD 550-210155/3-A

Matrix: Water

Analysis Batch: 210302

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 210155

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Arsenic	0.100	0.0963		mg/L		96	85 - 115	2	20
Chromium	0.100	0.0957		mg/L		96	85 - 115	2	20
Cobalt	0.100	0.0957		mg/L		96	85 - 115	2	20
Selenium	0.100	0.0959		mg/L		96	85 - 115	1	20

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QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 550-210734/1-A

Matrix: Water

Analysis Batch: 210895

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 210734

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.00050	mg/L		05/20/20 05:21	05/20/20 22:17	1

Lab Sample ID: LCS 550-210734/2-A

Matrix: Water

Analysis Batch: 210895

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 210734

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	0.100	0.113		mg/L		113	85 - 115

Lab Sample ID: LCSD 550-210734/3-A

Matrix: Water

Analysis Batch: 210895

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 210734

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Barium	0.100	0.111		mg/L		111	85 - 115	2	20

Lab Sample ID: 550-141890-B-1-E MS

Matrix: Water

Analysis Batch: 210895

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 210734

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	0.025		0.100	0.139		mg/L		114	70 - 130

Lab Sample ID: 550-141890-B-1-F MSD

Matrix: Water

Analysis Batch: 210895

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 210734

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Barium	0.025		0.100	0.143		mg/L		118	70 - 130	3	20

Lab Sample ID: MB 550-210947/1-A

Matrix: Water

Analysis Batch: 211032

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 210947

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.00050	mg/L		05/22/20 05:16	05/22/20 19:02	1

Lab Sample ID: MB 550-210947/1-A

Matrix: Water

Analysis Batch: 211332

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 210947

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.00050	mg/L		05/22/20 05:16	05/28/20 00:14	1
Cadmium	ND		0.00010	mg/L		05/22/20 05:16	05/28/20 00:14	1
Chromium	ND		0.0010	mg/L		05/22/20 05:16	05/28/20 00:14	1
Cobalt	ND		0.00050	mg/L		05/22/20 05:16	05/28/20 00:14	1
Molybdenum	ND		0.00050	mg/L		05/22/20 05:16	05/28/20 00:14	1

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 550-210947/1-A

Matrix: Water

Analysis Batch: 211444

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 210947

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		0.00050	mg/L		05/22/20 05:16	05/28/20 22:50	1

Lab Sample ID: LCS 550-210947/2-A

Matrix: Water

Analysis Batch: 211032

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 210947

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	0.100	0.106		mg/L		106	85 - 115

Lab Sample ID: LCS 550-210947/2-A

Matrix: Water

Analysis Batch: 211332

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 210947

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.106		mg/L		106	85 - 115
Cadmium	0.100	0.105		mg/L		105	85 - 115
Chromium	0.100	0.0946		mg/L		95	85 - 115
Cobalt	0.100	0.0983		mg/L		98	85 - 115
Molybdenum	0.100	0.104		mg/L		104	85 - 115

Lab Sample ID: LCS 550-210947/2-A

Matrix: Water

Analysis Batch: 211444

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 210947

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Selenium	0.100	0.0993		mg/L		99	85 - 115

Lab Sample ID: LCSD 550-210947/3-A

Matrix: Water

Analysis Batch: 211032

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 210947

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Barium	0.100	0.109		mg/L		109	85 - 115	3	20

Lab Sample ID: LCSD 550-210947/3-A

Matrix: Water

Analysis Batch: 211332

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 210947

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.100	0.105		mg/L		105	85 - 115	0	20
Cadmium	0.100	0.106		mg/L		106	85 - 115	1	20
Chromium	0.100	0.0956		mg/L		96	85 - 115	1	20
Cobalt	0.100	0.0996		mg/L		100	85 - 115	1	20
Molybdenum	0.100	0.105		mg/L		105	85 - 115	1	20

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 550-210947/3-A

Matrix: Water

Analysis Batch: 211444

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 210947

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Selenium	0.100	0.0960		mg/L		96	85 - 115	3	20

Lab Sample ID: 550-141925-21 MS

Matrix: Water

Analysis Batch: 211032

Client Sample ID: CH-CCR-FD05-0520

Prep Type: Total/NA

Prep Batch: 210947

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Barium	0.012		0.100	0.128		mg/L		116	70 - 130		

Lab Sample ID: 550-141925-21 MS

Matrix: Water

Analysis Batch: 211332

Client Sample ID: CH-CCR-FD05-0520

Prep Type: Total/NA

Prep Batch: 210947

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND	D2	0.100	0.118		mg/L		117	70 - 130		
Cadmium	ND	D2	0.100	0.103		mg/L		102	70 - 130		
Chromium	ND	D2	0.100	0.102		mg/L		102	70 - 130		
Cobalt	ND	D2	0.100	0.101		mg/L		101	70 - 130		
Molybdenum	0.0053	D2	0.100	0.117		mg/L		112	70 - 130		

Lab Sample ID: 550-141925-21 MS

Matrix: Water

Analysis Batch: 211444

Client Sample ID: CH-CCR-FD05-0520

Prep Type: Total/NA

Prep Batch: 210947

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Selenium	ND	D1	0.100	0.120	D1	mg/L		119	70 - 130		

Lab Sample ID: 550-141925-21 MSD

Matrix: Water

Analysis Batch: 211032

Client Sample ID: CH-CCR-FD05-0520

Prep Type: Total/NA

Prep Batch: 210947

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Barium	0.012		0.100	0.130		mg/L		117	70 - 130	1	20

Lab Sample ID: 550-141925-21 MSD

Matrix: Water

Analysis Batch: 211332

Client Sample ID: CH-CCR-FD05-0520

Prep Type: Total/NA

Prep Batch: 210947

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND	D2	0.100	0.118		mg/L		118	70 - 130	0	20
Cadmium	ND	D2	0.100	0.100		mg/L		100	70 - 130	2	20
Chromium	ND	D2	0.100	0.105		mg/L		105	70 - 130	3	20
Cobalt	ND	D2	0.100	0.103		mg/L		103	70 - 130	2	20
Molybdenum	0.0053	D2	0.100	0.116		mg/L		111	70 - 130	1	20

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: 550-141925-21 MSD

Matrix: Water

Analysis Batch: 211444

Client Sample ID: CH-CCR-FD05-0520

Prep Type: Total/NA

Prep Batch: 210947

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Selenium	ND	D1	0.100	0.116	D1	mg/L		116	70 - 130	3	20

Lab Sample ID: 550-141925-5 MS

Matrix: Water

Analysis Batch: 210084

Client Sample ID: CH-CCR-M50A-0520

Prep Type: Dissolved

Prep Batch: 210012

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.0024		0.100	0.103		mg/L		101	70 - 130		
Cobalt	ND		0.100	0.0796		mg/L		79	70 - 130		

Lab Sample ID: 550-141925-5 MSD

Matrix: Water

Analysis Batch: 210084

Client Sample ID: CH-CCR-M50A-0520

Prep Type: Dissolved

Prep Batch: 210012

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.0024		0.100	0.101		mg/L		98	70 - 130	2	20
Cobalt	ND		0.100	0.0766		mg/L		76	70 - 130	4	20

Lab Sample ID: 550-141925-25 MS

Matrix: Water

Analysis Batch: 210304

Client Sample ID: CH-CCR-W309-0520

Prep Type: Dissolved

Prep Batch: 210126

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.0038		0.100	0.110		mg/L		107	70 - 130		
Cobalt	ND		0.100	0.0894		mg/L		89	70 - 130		

Lab Sample ID: 550-141925-25 MSD

Matrix: Water

Analysis Batch: 210304

Client Sample ID: CH-CCR-W309-0520

Prep Type: Dissolved

Prep Batch: 210126

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.0038		0.100	0.110		mg/L		106	70 - 130	1	20
Cobalt	ND		0.100	0.0906		mg/L		90	70 - 130	1	20

Lab Sample ID: 550-141998-C-2-B MS

Matrix: Water

Analysis Batch: 210296

Client Sample ID: Matrix Spike

Prep Type: Dissolved

Prep Batch: 210155

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	ND		0.100	0.102		mg/L		102	70 - 130		
Cadmium	ND		0.100	0.0949		mg/L		95	70 - 130		
Lead	ND		0.100	0.0935		mg/L		93	70 - 130		
Molybdenum	0.0085		0.100	0.111		mg/L		102	70 - 130		
Thallium	ND		0.100	0.0933		mg/L		93	70 - 130		

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: 550-141998-C-2-B MS
Matrix: Water
Analysis Batch: 210302

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 210155

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.0066		0.100	0.106		mg/L		100	70 - 130
Chromium	0.0017		0.100	0.0956		mg/L		94	70 - 130
Cobalt	ND		0.100	0.0925		mg/L		92	70 - 130
Selenium	0.0011		0.100	0.0956		mg/L		94	70 - 130

Lab Sample ID: 550-141998-C-2-C MSD
Matrix: Water
Analysis Batch: 210296

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 210155

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	ND		0.100	0.103		mg/L		103	70 - 130	0	20
Cadmium	ND		0.100	0.0956		mg/L		96	70 - 130	1	20
Lead	ND		0.100	0.0919		mg/L		91	70 - 130	2	20
Molybdenum	0.0085		0.100	0.111		mg/L		103	70 - 130	1	20
Thallium	ND		0.100	0.0918		mg/L		92	70 - 130	2	20

Lab Sample ID: 550-141998-C-2-C MSD
Matrix: Water
Analysis Batch: 210302

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 210155

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.0066		0.100	0.106		mg/L		99	70 - 130	0	20
Chromium	0.0017		0.100	0.0979		mg/L		96	70 - 130	2	20
Cobalt	ND		0.100	0.0941		mg/L		94	70 - 130	2	20
Selenium	0.0011		0.100	0.0969		mg/L		96	70 - 130	1	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 550-209967/34
Matrix: Water
Analysis Batch: 209967

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 20:36	1
Bicarbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 20:36	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 20:36	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			05/09/20 20:36	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 20:36	1

Lab Sample ID: LCS 550-209967/33
Matrix: Water
Analysis Batch: 209967

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity as CaCO3	250	231		mg/L		92	90 - 110

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCSD 550-209967/46

Matrix: Water

Analysis Batch: 209967

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity as CaCO3	250	231		mg/L		93	90 - 110	0	20

Lab Sample ID: 550-141925-2 DU

Matrix: Water

Analysis Batch: 209967

Client Sample ID: CH-CCR-M46-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity as CaCO3	200		207		mg/L		3	20
Bicarbonate Alkalinity as CaCO3	200		207		mg/L		3	20
Carbonate Alkalinity as CaCO3	ND		ND		mg/L		NC	20
Alkalinity, Phenolphthalein	ND		ND		mg/L		NC	20
Hydroxide Alkalinity as CaCO3	ND		ND		mg/L		NC	20

Lab Sample ID: 550-141925-19 DU

Matrix: Water

Analysis Batch: 209967

Client Sample ID: CH-CCR-W126-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity as CaCO3	95		96.6		mg/L		1	20
Bicarbonate Alkalinity as CaCO3	95		96.6		mg/L		1	20
Carbonate Alkalinity as CaCO3	ND		ND		mg/L		NC	20
Alkalinity, Phenolphthalein	ND		ND		mg/L		NC	20
Hydroxide Alkalinity as CaCO3	ND		ND		mg/L		NC	20

Lab Sample ID: MB 550-210520/6

Matrix: Water

Analysis Batch: 210520

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	ND		6.0	mg/L			05/16/20 17:00	1
Bicarbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/16/20 17:00	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/16/20 17:00	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			05/16/20 17:00	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			05/16/20 17:00	1

Lab Sample ID: LCS 550-210520/5

Matrix: Water

Analysis Batch: 210520

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD
Alkalinity as CaCO3	250	247		mg/L		99	90 - 110	

Lab Sample ID: LCSD 550-210520/19

Matrix: Water

Analysis Batch: 210520

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity as CaCO3	250	250		mg/L		100	90 - 110	1	20

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QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: 550-141990-E-1 DU

Matrix: Water

Analysis Batch: 210520

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Alkalinity as CaCO ₃	150		156		mg/L		2	20
Bicarbonate Alkalinity as CaCO ₃	150		156		mg/L		2	20
Carbonate Alkalinity as CaCO ₃	ND		ND		mg/L		NC	20
Alkalinity, Phenolphthalein	ND		ND		mg/L		NC	20
Hydroxide Alkalinity as CaCO ₃	ND		ND		mg/L		NC	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 550-210029/1

Matrix: Water

Analysis Batch: 210029

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		20	mg/L			05/11/20 11:20	1

Lab Sample ID: LCS 550-210029/2

Matrix: Water

Analysis Batch: 210029

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	980		mg/L		98	90 - 110

Lab Sample ID: LCSD 550-210029/3

Matrix: Water

Analysis Batch: 210029

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Total Dissolved Solids	1000	990		mg/L		99	90 - 110	1	10

Lab Sample ID: 550-141924-A-4 DU

Matrix: Water

Analysis Batch: 210029

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Total Dissolved Solids	3000	D2	2960	D2	mg/L		0	10

Lab Sample ID: 550-141925-2 DU

Matrix: Water

Analysis Batch: 210029

Client Sample ID: CH-CCR-M46-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Total Dissolved Solids	13000	D2	12700	D2	mg/L		3	10

Lab Sample ID: MB 550-210140/1

Matrix: Water

Analysis Batch: 210140

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		20	mg/L			05/12/20 11:12	1

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 550-210140/2
Matrix: Water
Analysis Batch: 210140

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	976		mg/L		98	90 - 110

Lab Sample ID: LCSD 550-210140/3
Matrix: Water
Analysis Batch: 210140

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	1000	974		mg/L		97	90 - 110	0	10

Lab Sample ID: 550-141762-E-1 DU
Matrix: Water
Analysis Batch: 210140

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	1800		1860		mg/L		0.9	10

Method: SM 4500 H+ B - pH

Lab Sample ID: LCSSRM 550-210921/1
Matrix: Water
Analysis Batch: 210921

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		99.4	98.5 - 101.5

Lab Sample ID: LCSSRM 550-210921/13
Matrix: Water
Analysis Batch: 210921

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.1		SU		101.3	98.5 - 101.5

Lab Sample ID: LCSSRM 550-210921/24
Matrix: Water
Analysis Batch: 210921

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		99.4	98.5 - 101.5

Lab Sample ID: 550-141925-2 DU
Matrix: Water
Analysis Batch: 210921

Client Sample ID: CH-CCR-M46-0520
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.4	H5	7.4	H5	SU		0.3	5
Temperature	7.8	H5	8.3	H5	Degrees C		6	

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: SM 4500 H+ B - pH (Continued)

Lab Sample ID: 550-141925-21 DU

Matrix: Water

Analysis Batch: 210921

Client Sample ID: CH-CCR-FD05-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.6	H5	7.6	H5	SU		0.1	5
Temperature	12.1	H5	11.9	H5	Degrees C		2	

Method: SM 4500 NH3 D - Ammonia

Lab Sample ID: MB 550-210095/4

Matrix: Water

Analysis Batch: 210095

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.50	mg/L			05/11/20 19:40	1

Lab Sample ID: LCS 550-210095/5

Matrix: Water

Analysis Batch: 210095

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	25.0	24.4		mg/L		97	80 - 120

Lab Sample ID: LCSD 550-210095/6

Matrix: Water

Analysis Batch: 210095

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	25.0	25.2		mg/L		101	80 - 120	3	20

Lab Sample ID: 550-141710-F-1 MS

Matrix: Water

Analysis Batch: 210095

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	4.0		25.0	25.9		mg/L		88	80 - 120

Lab Sample ID: 550-141710-F-1 MSD

Matrix: Water

Analysis Batch: 210095

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	4.0		25.0	26.4		mg/L		90	80 - 120	2	20

Lab Sample ID: MB 550-210663/33

Matrix: Water

Analysis Batch: 210663

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.50	mg/L			05/19/20 00:22	1

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: SM 4500 NH3 D - Ammonia (Continued)

Lab Sample ID: MB 550-210663/4

Matrix: Water

Analysis Batch: 210663

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.50	mg/L			05/18/20 20:00	1

Lab Sample ID: LCS 550-210663/34

Matrix: Water

Analysis Batch: 210663

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	25.0	25.0		mg/L		100	80 - 120

Lab Sample ID: LCS 550-210663/5

Matrix: Water

Analysis Batch: 210663

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	25.0	25.8		mg/L		103	80 - 120

Lab Sample ID: LCSD 550-210663/35

Matrix: Water

Analysis Batch: 210663

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	25.0	25.5		mg/L		102	80 - 120	2	20

Lab Sample ID: LCSD 550-210663/6

Matrix: Water

Analysis Batch: 210663

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	25.0	25.0		mg/L		100	80 - 120	3	20

Lab Sample ID: 550-141925-2 MS

Matrix: Water

Analysis Batch: 210663

Client Sample ID: CH-CCR-M46-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	0.82		25.0	23.0		mg/L		89	80 - 120

Lab Sample ID: 550-141925-2 MSD

Matrix: Water

Analysis Batch: 210663

Client Sample ID: CH-CCR-M46-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	0.82		25.0	22.3		mg/L		86	80 - 120	3	20

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 550-210096/5

Matrix: Water

Analysis Batch: 210096

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	mg/L			05/11/20 14:42	1
Total Organic Carbon - Duplicates	ND		0.50	mg/L			05/11/20 14:42	1
Total Organic Carbon - Quad	ND		0.50	mg/L			05/11/20 14:42	1

Lab Sample ID: LCS 550-210096/6

Matrix: Water

Analysis Batch: 210096

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	20.0	21.3		mg/L		107	90 - 110
Total Organic Carbon - Duplicates	20.0	21.3		mg/L		107	90 - 110
Total Organic Carbon - Quad	20.0	21.3		mg/L		107	90 - 110

Lab Sample ID: LCSD 550-210096/7

Matrix: Water

Analysis Batch: 210096

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	20.0	20.6		mg/L		103	90 - 110	3	20
Total Organic Carbon - Duplicates	20.0	20.6		mg/L		103	90 - 110	3	20
Total Organic Carbon - Quad	20.0	20.6		mg/L		103	90 - 110	3	20

Lab Sample ID: MB 550-211616/16

Matrix: Water

Analysis Batch: 211616

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	mg/L			06/01/20 14:40	1
Total Organic Carbon - Duplicates	ND		0.50	mg/L			06/01/20 14:40	1
Total Organic Carbon - Quad	ND		0.50	mg/L			06/01/20 14:40	1

Lab Sample ID: LCS 550-211616/17

Matrix: Water

Analysis Batch: 211616

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	20.0	21.9		mg/L		109	90 - 110
Total Organic Carbon - Duplicates	20.0	21.9		mg/L		109	90 - 110
Total Organic Carbon - Quad	20.0	21.9		mg/L		109	90 - 110

Lab Sample ID: LCSD 550-211616/18

Matrix: Water

Analysis Batch: 211616

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	20.0	20.2		mg/L		101	90 - 110	8	20
Total Organic Carbon - Duplicates	20.0	20.2		mg/L		101	90 - 110	8	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: SM 5310B - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCSD 550-211616/18

Matrix: Water

Analysis Batch: 211616

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Quad	20.0	20.2		mg/L		101	90 - 110	8	20

Lab Sample ID: 550-141925-2 MS

Matrix: Water

Analysis Batch: 211616

Client Sample ID: CH-CCR-M46-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	3.2	M1 R13	20.0	48.3	M1 R13	mg/L		225	90 - 110		
Total Organic Carbon - Duplicates	3.2	R4 M1	20.0	48.3	M1	mg/L		225	90 - 110		
Total Organic Carbon - Quad	3.2	R4 M1	20.0	48.3	M1	mg/L		225	90 - 110		

Lab Sample ID: 550-141925-2 MSD

Matrix: Water

Analysis Batch: 211616

Client Sample ID: CH-CCR-M46-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	3.2	M1 R13	20.0	23.5	R13	mg/L		102	90 - 110	69	20
Total Organic Carbon - Duplicates	3.2	R4 M1	20.0	23.5	R4	mg/L		102	90 - 110	69	20
Total Organic Carbon - Quad	3.2	R4 M1	20.0	23.5	R4	mg/L		102	90 - 110	69	20

Lab Sample ID: MB 440-610673/6

Matrix: Water

Analysis Batch: 610673

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	mg/L			05/29/20 18:24	1

Lab Sample ID: LCS 440-610673/5

Matrix: Water

Analysis Batch: 610673

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	10.0	9.51		mg/L		95	85 - 115		

Lab Sample ID: 680-184236-C-1 MS

Matrix: Water

Analysis Batch: 610673

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	22		5.00	27.7	M3	mg/L		110	85 - 115		

Lab Sample ID: 680-184236-C-1 MSD

Matrix: Water

Analysis Batch: 610673

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	22		5.00	27.5	M3	mg/L		106	85 - 115	1	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: SM 5310B - Organic Carbon, Dissolved (DOC)

Lab Sample ID: MB 280-497282/61

Matrix: Water

Analysis Batch: 497282

Client Sample ID: Method Blank

Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	ND		1.0	mg/L			06/03/20 07:41	1
Dissolved Organic Carbon - Duplicate	ND		1.0	mg/L			06/03/20 07:41	1

Lab Sample ID: LCS 280-497282/60

Matrix: Water

Analysis Batch: 497282

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	25.0	27.3		mg/L		109	88 - 112
Dissolved Organic Carbon - Duplicate	25.0	27.1		mg/L		108	88 - 112

Lab Sample ID: 550-141925-5 MS

Matrix: Water

Analysis Batch: 497282

Client Sample ID: CH-CCR-M50A-0520

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	2.9	M1 V1	25.0	30.7	V1	mg/L		111	88 - 112
Dissolved Organic Carbon - Duplicate	2.9	M1 V1	25.0	30.4	V1	mg/L		110	88 - 112

Lab Sample ID: 550-141925-5 MSD

Matrix: Water

Analysis Batch: 497282

Client Sample ID: CH-CCR-M50A-0520

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	2.9	M1 V1	25.0	31.3	M1 V1	mg/L		113	88 - 112	2	15
Dissolved Organic Carbon - Duplicate	2.9	M1 V1	25.0	31.1	M1 V1	mg/L		113	88 - 112	2	15

Lab Sample ID: MB 280-497612/4

Matrix: Water

Analysis Batch: 497612

Client Sample ID: Method Blank

Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	ND		1.0	mg/L			06/04/20 16:46	1
Dissolved Organic Carbon - Duplicate	ND		1.0	mg/L			06/04/20 16:46	1

Lab Sample ID: LCS 280-497612/3

Matrix: Water

Analysis Batch: 497612

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	25.0	25.6		mg/L		102	88 - 112
Dissolved Organic Carbon - Duplicate	25.0	25.2		mg/L		101	88 - 112

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: SM 5310B - Organic Carbon, Dissolved (DOC) (Continued)

Lab Sample ID: 550-141925-B-9 MS

Matrix: Water

Analysis Batch: 497612

Client Sample ID: 550-141925-B-9 MS

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	5.0	H1	25.0	30.5		mg/L		102	88 - 112
Dissolved Organic Carbon - Duplicate	4.9	H1	25.0	30.0		mg/L		100	88 - 112

Lab Sample ID: 550-141925-B-9 MSD

Matrix: Water

Analysis Batch: 497612

Client Sample ID: 550-141925-B-9 MSD

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	5.0	H1	25.0	30.5		mg/L		102	88 - 112	0	15
Dissolved Organic Carbon - Duplicate	4.9	H1	25.0	30.0		mg/L		100	88 - 112	0	15

Lab Sample ID: MB 440-610686/6

Matrix: Water

Analysis Batch: 610686

Client Sample ID: Method Blank

Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	ND		1.0	mg/L			05/30/20 06:42	1

Lab Sample ID: LCS 440-610686/5

Matrix: Water

Analysis Batch: 610686

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	10.0	9.77		mg/L		98	85 - 115

Lab Sample ID: LCSD 440-610686/7

Matrix: Water

Analysis Batch: 610686

Client Sample ID: Lab Control Sample Dup

Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	10.0	10.1		mg/L		101	85 - 115	4	20

Lab Sample ID: 550-141925-25 DU

Matrix: Water

Analysis Batch: 610686

Client Sample ID: CH-CCR-W309-0520

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Dissolved Organic Carbon	ND		ND		mg/L		NC	20

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

HPLC/IC

Analysis Batch: 210077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	300.0	
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	300.0	
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	300.0	
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	300.0	
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	300.0	
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	300.0	
MB 550-210077/2	Method Blank	Total/NA	Water	300.0	
LCS 550-210077/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-210077/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-141925-2 MS	CH-CCR-M46-0520	Total/NA	Water	300.0	
550-141925-2 MS	CH-CCR-M46-0520	Total/NA	Water	300.0	
550-141925-2 MSD	CH-CCR-M46-0520	Total/NA	Water	300.0	
550-141925-2 MSD	CH-CCR-M46-0520	Total/NA	Water	300.0	

Analysis Batch: 210078

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-1	CH-CCR-M44D-0520	Total/NA	Water	300.0	
550-141925-1	CH-CCR-M44D-0520	Total/NA	Water	300.0	
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	300.0	
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	300.0	
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	300.0	
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	300.0	
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	300.0	
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	300.0	
MB 550-210078/2	Method Blank	Total/NA	Water	300.0	
LCS 550-210078/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-210078/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-141924-A-4 MS ^100	Matrix Spike	Total/NA	Water	300.0	
550-141924-A-4 MSD ^100	Matrix Spike Duplicate	Total/NA	Water	300.0	
550-141924-B-4 MS ^2	Matrix Spike	Total/NA	Water	300.0	
550-141924-B-4 MSD ^2	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 210201

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	300.0	
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	300.0	
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	300.0	
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	300.0	
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	300.0	
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	300.0	
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	300.0	
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	300.0	
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	300.0	
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	300.0	
550-141925-23	CH-TANNERS-0520	Total/NA	Water	300.0	
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	300.0	
MB 550-210201/2	Method Blank	Total/NA	Water	300.0	
LCS 550-210201/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-210201/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-141925-2 MS	CH-CCR-M46-0520	Total/NA	Water	300.0	
550-141925-2 MSD	CH-CCR-M46-0520	Total/NA	Water	300.0	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

HPLC/IC

Analysis Batch: 210424

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	300.0	
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	300.0	
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	300.0	
550-141925-18	CH-CCR-W125-0520	Total/NA	Water	300.0	
550-141925-18	CH-CCR-W125-0520	Total/NA	Water	300.0	
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	300.0	
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	300.0	
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	300.0	
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	300.0	
550-141925-23	CH-TANNERS-0520	Total/NA	Water	300.0	
550-141925-23	CH-TANNERS-0520	Total/NA	Water	300.0	
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	300.0	
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	300.0	
MB 550-210424/2	Method Blank	Total/NA	Water	300.0	
LCS 550-210424/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-210424/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-141925-14 MS	CH-CCR-M67-0520	Total/NA	Water	300.0	
550-141925-14 MSD	CH-CCR-M67-0520	Total/NA	Water	300.0	
550-142112-A-3 MS	Matrix Spike	Total/NA	Water	300.0	
550-142112-A-3 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 210611

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	300.0	
MB 550-210611/2	Method Blank	Total/NA	Water	300.0	
LCS 550-210611/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-210611/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-141925-14 MS	CH-CCR-M67-0520	Total/NA	Water	300.0	
550-141925-14 MSD	CH-CCR-M67-0520	Total/NA	Water	300.0	

Metals

Prep Batch: 209972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-1	CH-CCR-M44D-0520	Total/NA	Water	200.7	
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	200.7	
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	200.7	
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	200.7	
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	200.7	
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	200.7	
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	200.7	
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	200.7	
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	200.7	
550-141925-18	CH-CCR-W125-0520	Total/NA	Water	200.7	
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	200.7	
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	200.7	
550-141925-23	CH-TANNERS-0520	Total/NA	Water	200.7	
MB 550-209972/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-209972/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-209972/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-141925-2 MS	CH-CCR-M46-0520	Total/NA	Water	200.7	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Metals (Continued)

Prep Batch: 209972 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-2 MSD	CH-CCR-M46-0520	Total/NA	Water	200.7	

Prep Batch: 209973

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-3	CH-CCR-M46-0520	Dissolved	Water	200.7	
550-141925-5	CH-CCR-M50A-0520	Dissolved	Water	200.7	
550-141925-7	CH-CCR-M51A-0520	Dissolved	Water	200.7	
550-141925-9	CH-CCR-M64-0520	Dissolved	Water	200.7	
550-141925-11	CH-CCR-M65-0520	Dissolved	Water	200.7	
550-141925-13	CH-CCR-M66-0520	Dissolved	Water	200.7	
550-141925-15	CH-CCR-M67-0520	Dissolved	Water	200.7	
550-141925-17	CH-CCR-W123-0520	Dissolved	Water	200.7	
550-141925-20	CH-CCR-W126-0520	Dissolved	Water	200.7	
550-141925-22	CH-CCR-FD05-0520	Dissolved	Water	200.7	
MB 550-209973/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-209973/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-209973/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-141925-3 MS	CH-CCR-M46-0520	Dissolved	Water	200.7	
550-141925-3 MSD	CH-CCR-M46-0520	Dissolved	Water	200.7	

Filtration Batch: 210011

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141869-A-2-C MS	Matrix Spike	Dissolved	Water	Filtration	
550-141869-A-2-D MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	

Prep Batch: 210012

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-3	CH-CCR-M46-0520	Dissolved	Water	200.8	
550-141925-5	CH-CCR-M50A-0520	Dissolved	Water	200.8	
550-141925-7	CH-CCR-M51A-0520	Dissolved	Water	200.8	
550-141925-9	CH-CCR-M64-0520	Dissolved	Water	200.8	
550-141925-11	CH-CCR-M65-0520	Dissolved	Water	200.8	
550-141925-13	CH-CCR-M66-0520	Dissolved	Water	200.8	
550-141925-15	CH-CCR-M67-0520	Dissolved	Water	200.8	
550-141925-17	CH-CCR-W123-0520	Dissolved	Water	200.8	
550-141925-20	CH-CCR-W126-0520	Dissolved	Water	200.8	
550-141925-22	CH-CCR-FD05-0520	Dissolved	Water	200.8	
MB 550-210012/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-210012/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-210012/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-141925-5 MS	CH-CCR-M50A-0520	Dissolved	Water	200.8	
550-141925-5 MSD	CH-CCR-M50A-0520	Dissolved	Water	200.8	

Prep Batch: 210014

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	200.8	
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	200.8	
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	200.8	
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	200.8	
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	200.8	
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	200.8	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Metals (Continued)

Prep Batch: 210014 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	200.8	
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	200.8	
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	200.8	
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	200.8	
550-141925-23	CH-TANNERS-0520	Total/NA	Water	200.8	
MB 550-210014/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-210014/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-210014/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-141925-4 MS	CH-CCR-M50A-0520	Total/NA	Water	200.8	
550-141925-4 MSD	CH-CCR-M50A-0520	Total/NA	Water	200.8	

Analysis Batch: 210084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-5	CH-CCR-M50A-0520	Dissolved	Water	200.8 LL	210012
550-141925-7	CH-CCR-M51A-0520	Dissolved	Water	200.8 LL	210012
550-141925-11	CH-CCR-M65-0520	Dissolved	Water	200.8 LL	210012
550-141925-13	CH-CCR-M66-0520	Dissolved	Water	200.8 LL	210012
MB 550-210012/1-A	Method Blank	Total/NA	Water	200.8 LL	210012
LCS 550-210012/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	210012
LCSD 550-210012/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	210012
550-141925-5 MS	CH-CCR-M50A-0520	Dissolved	Water	200.8 LL	210012
550-141925-5 MSD	CH-CCR-M50A-0520	Dissolved	Water	200.8 LL	210012

Analysis Batch: 210085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	200.8 LL	210014
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	200.8 LL	210014
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	200.8 LL	210014
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	200.8 LL	210014
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	200.8 LL	210014
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	200.8 LL	210014
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	200.8 LL	210014
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	200.8 LL	210014
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	200.8 LL	210014
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	200.8 LL	210014
550-141925-23	CH-TANNERS-0520	Total/NA	Water	200.8 LL	210014
MB 550-210014/1-A	Method Blank	Total/NA	Water	200.8 LL	210014
LCS 550-210014/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	210014
LCSD 550-210014/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	210014
550-141925-4 MS	CH-CCR-M50A-0520	Total/NA	Water	200.8 LL	210014
550-141925-4 MSD	CH-CCR-M50A-0520	Total/NA	Water	200.8 LL	210014

Prep Batch: 210126

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-25	CH-CCR-W309-0520	Dissolved	Water	200.8	
MB 550-210126/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-210126/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-210126/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-141925-25 MS	CH-CCR-W309-0520	Dissolved	Water	200.8	
550-141925-25 MSD	CH-CCR-W309-0520	Dissolved	Water	200.8	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Metals

Prep Batch: 210130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-25	CH-CCR-W309-0520	Dissolved	Water	200.7	
MB 550-210130/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-210130/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-210130/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-141869-A-2-C MS	Matrix Spike	Dissolved	Water	200.7	210011
550-141869-A-2-D MSD	Matrix Spike Duplicate	Dissolved	Water	200.7	210011

Prep Batch: 210154

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	200.7	
MB 550-210154/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-210154/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-210154/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-141998-C-1-A MS	Matrix Spike	Dissolved	Water	200.7	
550-141998-C-1-B MSD	Matrix Spike Duplicate	Dissolved	Water	200.7	

Prep Batch: 210155

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	200.8	
MB 550-210155/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-210155/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-210155/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-141998-C-2-B MS	Matrix Spike	Dissolved	Water	200.8	
550-141998-C-2-C MSD	Matrix Spike Duplicate	Dissolved	Water	200.8	

Analysis Batch: 210296

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	200.8 LL	210155
MB 550-210155/1-A	Method Blank	Total/NA	Water	200.8 LL	210155
LCS 550-210155/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	210155
LCSD 550-210155/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	210155
550-141998-C-2-B MS	Matrix Spike	Dissolved	Water	200.8 LL	210155
550-141998-C-2-C MSD	Matrix Spike Duplicate	Dissolved	Water	200.8 LL	210155

Analysis Batch: 210302

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	200.8 LL	210155
MB 550-210155/1-A	Method Blank	Total/NA	Water	200.8 LL	210155
LCS 550-210155/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	210155
LCSD 550-210155/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	210155
550-141998-C-2-B MS	Matrix Spike	Dissolved	Water	200.8 LL	210155
550-141998-C-2-C MSD	Matrix Spike Duplicate	Dissolved	Water	200.8 LL	210155

Analysis Batch: 210304

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-25	CH-CCR-W309-0520	Dissolved	Water	200.8 LL	210126
MB 550-210126/1-A	Method Blank	Total/NA	Water	200.8 LL	210126
LCS 550-210126/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	210126
LCSD 550-210126/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	210126
550-141925-25 MS	CH-CCR-W309-0520	Dissolved	Water	200.8 LL	210126
550-141925-25 MSD	CH-CCR-W309-0520	Dissolved	Water	200.8 LL	210126

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Metals

Analysis Batch: 210331

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	200.7 Rev 4.4	210154
MB 550-210154/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	210154
LCS 550-210154/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	210154
LCSD 550-210154/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	210154
550-141998-C-1-A MS	Matrix Spike	Dissolved	Water	200.7 Rev 4.4	210154
550-141998-C-1-B MSD	Matrix Spike Duplicate	Dissolved	Water	200.7 Rev 4.4	210154

Analysis Batch: 210333

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-25	CH-CCR-W309-0520	Dissolved	Water	200.7 Rev 4.4	210130
MB 550-210130/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	210130
LCS 550-210130/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	210130
LCSD 550-210130/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	210130
550-141869-A-2-C MS	Matrix Spike	Dissolved	Water	200.7 Rev 4.4	210130
550-141869-A-2-D MSD	Matrix Spike Duplicate	Dissolved	Water	200.7 Rev 4.4	210130

Analysis Batch: 210442

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	200.7 Rev 4.4	210154
MB 550-210154/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	210154
LCS 550-210154/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	210154
LCSD 550-210154/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	210154
550-141998-C-1-A MS	Matrix Spike	Dissolved	Water	200.7 Rev 4.4	210154
550-141998-C-1-B MSD	Matrix Spike Duplicate	Dissolved	Water	200.7 Rev 4.4	210154

Analysis Batch: 210622

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-1	CH-CCR-M44D-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-18	CH-CCR-W125-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-23	CH-TANNERS-0520	Total/NA	Water	200.7 Rev 4.4	209972
MB 550-209972/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	209972
LCS 550-209972/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	209972
LCSD 550-209972/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-2 MS	CH-CCR-M46-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-2 MSD	CH-CCR-M46-0520	Total/NA	Water	200.7 Rev 4.4	209972

Prep Batch: 210734

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	200.8	
MB 550-210734/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-210734/2-A	Lab Control Sample	Total/NA	Water	200.8	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Metals (Continued)

Prep Batch: 210734 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 550-210734/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-141890-B-1-E MS	Matrix Spike	Total/NA	Water	200.8	
550-141890-B-1-F MSD	Matrix Spike Duplicate	Total/NA	Water	200.8	

Analysis Batch: 210755

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	200.7 Rev 4.4	210154

Analysis Batch: 210895

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	200.8 LL	210734
MB 550-210734/1-A	Method Blank	Total/NA	Water	200.8 LL	210734
LCS 550-210734/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	210734
LCSD 550-210734/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	210734
550-141890-B-1-E MS	Matrix Spike	Total/NA	Water	200.8 LL	210734
550-141890-B-1-F MSD	Matrix Spike Duplicate	Total/NA	Water	200.8 LL	210734

Analysis Batch: 210942

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	200.8 LL	210014
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	200.8 LL	210014
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	200.8 LL	210014
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	200.8 LL	210014
MB 550-210014/1-A	Method Blank	Total/NA	Water	200.8 LL	210014
LCS 550-210014/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	210014
LCSD 550-210014/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	210014
550-141925-4 MS	CH-CCR-M50A-0520	Total/NA	Water	200.8 LL	210014
550-141925-4 MSD	CH-CCR-M50A-0520	Total/NA	Water	200.8 LL	210014

Prep Batch: 210947

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	200.8	
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	200.8	
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	200.8	
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	200.8	
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	200.8	
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	200.8	
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	200.8	
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	200.8	
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	200.8	
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	200.8	
550-141925-23	CH-TANNERS-0520	Total/NA	Water	200.8	
MB 550-210947/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-210947/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-210947/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-141925-21 MS	CH-CCR-FD05-0520	Total/NA	Water	200.8	
550-141925-21 MSD	CH-CCR-FD05-0520	Total/NA	Water	200.8	

Analysis Batch: 210962

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	200.7 Rev 4.4	209972

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Metals (Continued)

Analysis Batch: 210962 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-23	CH-TANNERS-0520	Total/NA	Water	200.7 Rev 4.4	209972
MB 550-209972/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	209972
LCS 550-209972/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	209972
LCSD 550-209972/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-2 MS	CH-CCR-M46-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-2 MSD	CH-CCR-M46-0520	Total/NA	Water	200.7 Rev 4.4	209972

Analysis Batch: 211031

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-3	CH-CCR-M46-0520	Dissolved	Water	200.8 LL	210012
550-141925-9	CH-CCR-M64-0520	Dissolved	Water	200.8 LL	210012
550-141925-15	CH-CCR-M67-0520	Dissolved	Water	200.8 LL	210012
550-141925-17	CH-CCR-W123-0520	Dissolved	Water	200.8 LL	210012
550-141925-20	CH-CCR-W126-0520	Dissolved	Water	200.8 LL	210012
550-141925-22	CH-CCR-FD05-0520	Dissolved	Water	200.8 LL	210012

Analysis Batch: 211032

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	200.8 LL	210947
MB 550-210947/1-A	Method Blank	Total/NA	Water	200.8 LL	210947
LCS 550-210947/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	210947
LCSD 550-210947/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	210947
550-141925-21 MS	CH-CCR-FD05-0520	Total/NA	Water	200.8 LL	210947
550-141925-21 MSD	CH-CCR-FD05-0520	Total/NA	Water	200.8 LL	210947

Analysis Batch: 211052

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-3	CH-CCR-M46-0520	Dissolved	Water	200.7 Rev 4.4	209973
550-141925-5	CH-CCR-M50A-0520	Dissolved	Water	200.7 Rev 4.4	209973
550-141925-7	CH-CCR-M51A-0520	Dissolved	Water	200.7 Rev 4.4	209973
550-141925-9	CH-CCR-M64-0520	Dissolved	Water	200.7 Rev 4.4	209973
550-141925-11	CH-CCR-M65-0520	Dissolved	Water	200.7 Rev 4.4	209973
550-141925-13	CH-CCR-M66-0520	Dissolved	Water	200.7 Rev 4.4	209973
550-141925-15	CH-CCR-M67-0520	Dissolved	Water	200.7 Rev 4.4	209973
550-141925-17	CH-CCR-W123-0520	Dissolved	Water	200.7 Rev 4.4	209973
550-141925-20	CH-CCR-W126-0520	Dissolved	Water	200.7 Rev 4.4	209973
550-141925-22	CH-CCR-FD05-0520	Dissolved	Water	200.7 Rev 4.4	209973
MB 550-209973/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	209973
LCS 550-209973/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	209973
LCSD 550-209973/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	209973
550-141925-3 MS	CH-CCR-M46-0520	Dissolved	Water	200.7 Rev 4.4	209973
550-141925-3 MSD	CH-CCR-M46-0520	Dissolved	Water	200.7 Rev 4.4	209973

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Metals

Analysis Batch: 211160

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	200.7 Rev 4.4	209972

Analysis Batch: 211270

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-1	CH-CCR-M44D-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-18	CH-CCR-W125-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-23	CH-TANNERS-0520	Total/NA	Water	200.7 Rev 4.4	209972
MB 550-209972/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	209972
LCS 550-209972/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	209972
LCSD 550-209972/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-2 MS	CH-CCR-M46-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-2 MSD	CH-CCR-M46-0520	Total/NA	Water	200.7 Rev 4.4	209972

Analysis Batch: 211332

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	200.8 LL	210947
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	200.8 LL	210947
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	200.8 LL	210947
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	200.8 LL	210947
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	200.8 LL	210947
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	200.8 LL	210947
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	200.8 LL	210947
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	200.8 LL	210947
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	200.8 LL	210947
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	200.8 LL	210947
550-141925-23	CH-TANNERS-0520	Total/NA	Water	200.8 LL	210947
MB 550-210947/1-A	Method Blank	Total/NA	Water	200.8 LL	210947
LCS 550-210947/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	210947
LCSD 550-210947/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	210947
550-141925-21 MS	CH-CCR-FD05-0520	Total/NA	Water	200.8 LL	210947
550-141925-21 MSD	CH-CCR-FD05-0520	Total/NA	Water	200.8 LL	210947

Analysis Batch: 211444

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	200.8 LL	210947
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	200.8 LL	210947
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	200.8 LL	210947
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	200.8 LL	210947
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	200.8 LL	210947
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	200.8 LL	210947
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	200.8 LL	210947
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	200.8 LL	210947

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Metals (Continued)

Analysis Batch: 211444 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 550-210947/1-A	Method Blank	Total/NA	Water	200.8 LL	210947
LCS 550-210947/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	210947
LCSD 550-210947/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	210947
550-141925-21 MS	CH-CCR-FD05-0520	Total/NA	Water	200.8 LL	210947
550-141925-21 MSD	CH-CCR-FD05-0520	Total/NA	Water	200.8 LL	210947

General Chemistry

Analysis Batch: 209967

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-1	CH-CCR-M44D-0520	Total/NA	Water	SM 2320B	
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	SM 2320B	
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	SM 2320B	
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	SM 2320B	
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	SM 2320B	
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	SM 2320B	
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	SM 2320B	
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	SM 2320B	
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	SM 2320B	
550-141925-18	CH-CCR-W125-0520	Total/NA	Water	SM 2320B	
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	SM 2320B	
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	SM 2320B	
550-141925-23	CH-TANNERS-0520	Total/NA	Water	SM 2320B	
MB 550-209967/34	Method Blank	Total/NA	Water	SM 2320B	
LCS 550-209967/33	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 550-209967/46	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
550-141925-2 DU	CH-CCR-M46-0520	Total/NA	Water	SM 2320B	
550-141925-19 DU	CH-CCR-W126-0520	Total/NA	Water	SM 2320B	

Analysis Batch: 210029

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	SM 2540C	
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	SM 2540C	
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	SM 2540C	
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	SM 2540C	
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	SM 2540C	
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	SM 2540C	
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	SM 2540C	
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	SM 2540C	
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	SM 2540C	
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	SM 2540C	
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	SM 2540C	
MB 550-210029/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-210029/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-210029/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-141924-A-4 DU	Duplicate	Total/NA	Water	SM 2540C	
550-141925-2 DU	CH-CCR-M46-0520	Total/NA	Water	SM 2540C	

Analysis Batch: 210095

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	SM 4500 NH3 D	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

General Chemistry (Continued)

Analysis Batch: 210095 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	SM 4500 NH3 D	
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	SM 4500 NH3 D	
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	SM 4500 NH3 D	
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	SM 4500 NH3 D	
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	SM 4500 NH3 D	
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	SM 4500 NH3 D	
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	SM 4500 NH3 D	
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	SM 4500 NH3 D	
MB 550-210095/4	Method Blank	Total/NA	Water	SM 4500 NH3 D	
LCS 550-210095/5	Lab Control Sample	Total/NA	Water	SM 4500 NH3 D	
LCSD 550-210095/6	Lab Control Sample Dup	Total/NA	Water	SM 4500 NH3 D	
550-141710-F-1 MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 D	
550-141710-F-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 D	

Analysis Batch: 210096

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	SM 5310B	
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	SM 5310B	
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	SM 5310B	
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	SM 5310B	
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	SM 5310B	
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	SM 5310B	
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	SM 5310B	
MB 550-210096/5	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-210096/6	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-210096/7	Lab Control Sample Dup	Total/NA	Water	SM 5310B	

Analysis Batch: 210140

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-23	CH-TANNERS-0520	Total/NA	Water	SM 2540C	
MB 550-210140/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-210140/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-210140/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-141762-E-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 210520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	SM 2320B	
MB 550-210520/6	Method Blank	Total/NA	Water	SM 2320B	
LCS 550-210520/5	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 550-210520/19	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
550-141990-E-1 DU	Duplicate	Total/NA	Water	SM 2320B	

Analysis Batch: 210663

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	SM 4500 NH3 D	
550-141925-23	CH-TANNERS-0520	Total/NA	Water	SM 4500 NH3 D	
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	SM 4500 NH3 D	
MB 550-210663/33	Method Blank	Total/NA	Water	SM 4500 NH3 D	
MB 550-210663/4	Method Blank	Total/NA	Water	SM 4500 NH3 D	
LCS 550-210663/34	Lab Control Sample	Total/NA	Water	SM 4500 NH3 D	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

General Chemistry (Continued)

Analysis Batch: 210663 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 550-210663/5	Lab Control Sample	Total/NA	Water	SM 4500 NH3 D	
LCSD 550-210663/35	Lab Control Sample Dup	Total/NA	Water	SM 4500 NH3 D	
LCSD 550-210663/6	Lab Control Sample Dup	Total/NA	Water	SM 4500 NH3 D	
550-141925-2 MS	CH-CCR-M46-0520	Total/NA	Water	SM 4500 NH3 D	
550-141925-2 MSD	CH-CCR-M46-0520	Total/NA	Water	SM 4500 NH3 D	

Analysis Batch: 210921

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	SM 4500 H+ B	
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	SM 4500 H+ B	
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	SM 4500 H+ B	
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	SM 4500 H+ B	
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	SM 4500 H+ B	
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	SM 4500 H+ B	
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	SM 4500 H+ B	
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	SM 4500 H+ B	
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	SM 4500 H+ B	
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	SM 4500 H+ B	
550-141925-23	CH-TANNERS-0520	Total/NA	Water	SM 4500 H+ B	
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-210921/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-210921/13	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-210921/24	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
550-141925-2 DU	CH-CCR-M46-0520	Total/NA	Water	SM 4500 H+ B	
550-141925-21 DU	CH-CCR-FD05-0520	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 211616

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	SM 5310B	
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	SM 5310B	
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	SM 5310B	
550-141925-23	CH-TANNERS-0520	Total/NA	Water	SM 5310B	
MB 550-211616/16	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-211616/17	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-211616/18	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-141925-2 MS	CH-CCR-M46-0520	Total/NA	Water	SM 5310B	
550-141925-2 MSD	CH-CCR-M46-0520	Total/NA	Water	SM 5310B	

Analysis Batch: 497282

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-3	CH-CCR-M46-0520	Dissolved	Water	SM 5310B	
550-141925-5	CH-CCR-M50A-0520	Dissolved	Water	SM 5310B	
550-141925-7	CH-CCR-M51A-0520	Dissolved	Water	SM 5310B	
550-141925-9	CH-CCR-M64-0520	Dissolved	Water	SM 5310B	
550-141925-17	CH-CCR-W123-0520	Dissolved	Water	SM 5310B	
550-141925-22	CH-CCR-FD05-0520	Dissolved	Water	SM 5310B	
MB 280-497282/61	Method Blank	Dissolved	Water	SM 5310B	
LCS 280-497282/60	Lab Control Sample	Dissolved	Water	SM 5310B	
550-141925-5 MS	CH-CCR-M50A-0520	Dissolved	Water	SM 5310B	
550-141925-5 MSD	CH-CCR-M50A-0520	Dissolved	Water	SM 5310B	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

General Chemistry

Analysis Batch: 497612

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-11	CH-CCR-M65-0520	Dissolved	Water	SM 5310B	
550-141925-13	CH-CCR-M66-0520	Dissolved	Water	SM 5310B	
550-141925-15	CH-CCR-M67-0520	Dissolved	Water	SM 5310B	
550-141925-20	CH-CCR-W126-0520	Dissolved	Water	SM 5310B	
MB 280-497612/4	Method Blank	Dissolved	Water	SM 5310B	
LCS 280-497612/3	Lab Control Sample	Dissolved	Water	SM 5310B	
550-141925-B-9 MS	550-141925-B-9 MS	Dissolved	Water	SM 5310B	
550-141925-B-9 MSD	550-141925-B-9 MSD	Dissolved	Water	SM 5310B	

Analysis Batch: 610673

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	SM 5310B	
MB 440-610673/6	Method Blank	Total/NA	Water	SM 5310B	
LCS 440-610673/5	Lab Control Sample	Total/NA	Water	SM 5310B	
680-184236-C-1 MS	Matrix Spike	Total/NA	Water	SM 5310B	
680-184236-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	

Analysis Batch: 610686

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-25	CH-CCR-W309-0520	Dissolved	Water	SM 5310B	
MB 440-610686/6	Method Blank	Dissolved	Water	SM 5310B	
LCS 440-610686/5	Lab Control Sample	Dissolved	Water	SM 5310B	
LCSD 440-610686/7	Lab Control Sample Dup	Dissolved	Water	SM 5310B	
550-141925-25 DU	CH-CCR-W309-0520	Dissolved	Water	SM 5310B	

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M44D-0520

Lab Sample ID: 550-141925-1

Date Collected: 05/07/20 09:35

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	210078	05/11/20 23:59	RDC	TAL PHX
Total/NA	Analysis	300.0		200	210078	05/12/20 00:26	RDC	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210622	05/19/20 00:19	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	211270	05/28/20 03:16	SRA	TAL PHX
Total/NA	Analysis	SM 2320B		1	209967	05/09/20 21:02	DGS	TAL PHX

Client Sample ID: CH-CCR-M46-0520

Lab Sample ID: 550-141925-2

Date Collected: 05/05/20 10:01

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	210077	05/11/20 18:57	RDC	TAL PHX
Total/NA	Analysis	300.0		200	210077	05/11/20 19:52	RDC	TAL PHX
Total/NA	Analysis	300.0		5	210201	05/12/20 17:04	RDC	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210622	05/19/20 00:03	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210962	05/21/20 18:36	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	211270	05/28/20 03:12	SRA	TAL PHX
Total/NA	Prep	200.8			210014	05/11/20 08:57	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	210085	05/11/20 20:37	ARE	TAL PHX
Total/NA	Prep	200.8			210014	05/11/20 08:57	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	210942	05/21/20 21:42	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211332	05/28/20 00:30	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211444	05/28/20 23:06	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	209967	05/09/20 20:45	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	210029		YET	TAL PHX
					(Start)	05/11/20 11:20		
					(End)	05/12/20 10:15		
Total/NA	Analysis	SM 4500 H+ B		1	210921	05/21/20 16:30	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	210663	05/19/20 00:44	KJS	TAL PHX
Total/NA	Analysis	SM 5310B		1	211616	06/01/20 15:16	DGS	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M46-0520

Lab Sample ID: 550-141925-3

Date Collected: 05/05/20 10:01

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			209973	05/11/20 05:21	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	211052	05/22/20 23:51	SRA	TAL PHX
Dissolved	Prep	200.8			210012	05/11/20 08:45	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		1	211031	05/22/20 18:48	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	497282	06/03/20 09:37	JMB	TAL DEN

Client Sample ID: CH-CCR-M50A-0520

Lab Sample ID: 550-141925-4

Date Collected: 05/06/20 13:46

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	210078	05/12/20 00:53	RDC	TAL PHX
Total/NA	Analysis	300.0		200	210078	05/12/20 01:21	RDC	TAL PHX
Total/NA	Analysis	300.0		5	210201	05/12/20 18:54	RDC	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210622	05/19/20 00:23	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210962	05/21/20 18:44	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	211270	05/28/20 03:25	SRA	TAL PHX
Total/NA	Prep	200.8			210014	05/11/20 08:57	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	210085	05/11/20 20:35	ARE	TAL PHX
Total/NA	Prep	200.8			210014	05/11/20 08:57	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	210942	05/21/20 21:40	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211332	05/28/20 00:32	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	209967	05/09/20 21:10	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	210029		YET	TAL PHX
					(Start)	05/11/20 11:20		
					(End)	05/12/20 10:15		
Total/NA	Analysis	SM 4500 H+ B		1	210921	05/21/20 16:30	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	210095	05/11/20 22:07	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	210096	05/11/20 19:17	DGS	TAL PHX

Client Sample ID: CH-CCR-M50A-0520

Lab Sample ID: 550-141925-5

Date Collected: 05/06/20 13:46

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			209973	05/11/20 05:21	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	211052	05/22/20 23:55	SRA	TAL PHX
Dissolved	Prep	200.8			210012	05/11/20 08:45	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		1	210084	05/11/20 19:59	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	497282	06/03/20 08:44	JMB	TAL DEN

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M51A-0520

Lab Sample ID: 550-141925-6

Date Collected: 05/06/20 15:15

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	210078	05/12/20 01:48	RDC	TAL PHX
Total/NA	Analysis	300.0		200	210078	05/12/20 02:16	RDC	TAL PHX
Total/NA	Analysis	300.0		5	210201	05/12/20 19:21	RDC	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210622	05/19/20 00:27	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210962	05/21/20 18:48	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	211270	05/28/20 03:29	SRA	TAL PHX
Total/NA	Prep	200.8			210014	05/11/20 08:57	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	210085	05/11/20 20:39	ARE	TAL PHX
Total/NA	Prep	200.8			210014	05/11/20 08:57	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	210942	05/21/20 21:50	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211332	05/28/20 00:34	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	209967	05/09/20 21:19	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	210029	(Start) 05/11/20 11:20 (End) 05/12/20 10:15	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	210921	05/21/20 16:30	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	210095	05/11/20 22:16	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	210096	05/11/20 19:35	DGS	TAL PHX

Client Sample ID: CH-CCR-M51A-0520

Lab Sample ID: 550-141925-7

Date Collected: 05/06/20 15:15

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			209973	05/11/20 05:21	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	211052	05/22/20 23:59	SRA	TAL PHX
Dissolved	Prep	200.8			210012	05/11/20 08:45	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		1	210084	05/11/20 20:03	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	497282	06/03/20 09:52	JMB	TAL DEN

Client Sample ID: CH-CCR-M64-0520

Lab Sample ID: 550-141925-8

Date Collected: 05/06/20 08:13

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	210078	05/12/20 03:38	RDC	TAL PHX
Total/NA	Analysis	300.0		200	210078	05/12/20 04:05	RDC	TAL PHX
Total/NA	Analysis	300.0		5	210201	05/12/20 19:49	RDC	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210622	05/19/20 00:31	SRA	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M64-0520

Lab Sample ID: 550-141925-8

Date Collected: 05/06/20 08:13

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210962	05/21/20 18:52	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	211270	05/28/20 03:33	SRA	TAL PHX
Total/NA	Prep	200.8			210014	05/11/20 08:57	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	210085	05/11/20 20:41	ARE	TAL PHX
Total/NA	Prep	200.8			210014	05/11/20 08:57	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	210942	05/21/20 21:46	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211332	05/28/20 00:36	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211444	05/29/20 14:56	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	209967	05/09/20 21:30	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	210029		YET	TAL PHX
					(Start)	05/11/20 11:20		
					(End)	05/12/20 10:15		
Total/NA	Analysis	SM 4500 H+ B		1	210921	05/21/20 16:30	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	210095	05/11/20 22:25	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	210096	05/11/20 19:53	DGS	TAL PHX

Client Sample ID: CH-CCR-M64-0520

Lab Sample ID: 550-141925-9

Date Collected: 05/06/20 08:13

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			209973	05/11/20 05:21	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	211052	05/23/20 00:03	SRA	TAL PHX
Dissolved	Prep	200.8			210012	05/11/20 08:45	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		1	211031	05/22/20 18:46	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	497282	06/03/20 10:11	JMB	TAL DEN

Client Sample ID: CH-CCR-M65-0520

Lab Sample ID: 550-141925-10

Date Collected: 05/05/20 08:16

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	210077	05/11/20 20:47	RDC	TAL PHX
Total/NA	Analysis	300.0		200	210077	05/11/20 21:05	RDC	TAL PHX
Total/NA	Analysis	300.0		5	210201	05/12/20 20:44	RDC	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210622	05/19/20 00:47	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210962	05/21/20 19:00	SRA	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M65-0520

Lab Sample ID: 550-141925-10

Date Collected: 05/05/20 08:16

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	211160	05/26/20 18:58	SRA	TAL PHX
Total/NA	Prep	200.8			210014	05/11/20 08:57	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	210085	05/11/20 20:43	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211332	05/28/20 00:39	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211444	05/29/20 14:58	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	209967	05/09/20 21:38	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	210029	(Start) 05/11/20 11:20 (End) 05/12/20 10:15	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	210921	05/21/20 16:30	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	210095	05/11/20 22:32	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	211616	06/01/20 15:52	DGS	TAL PHX

Client Sample ID: CH-CCR-M65-0520

Lab Sample ID: 550-141925-11

Date Collected: 05/05/20 08:16

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			209973	05/11/20 05:21	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	211052	05/23/20 00:07	SRA	TAL PHX
Dissolved	Prep	200.8			210012	05/11/20 08:45	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		1	210084	05/11/20 20:08	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	497612	06/04/20 18:53	JMB	TAL DEN

Client Sample ID: CH-CCR-M66-0520

Lab Sample ID: 550-141925-12

Date Collected: 05/05/20 12:46

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	210077	05/11/20 21:24	RDC	TAL PHX
Total/NA	Analysis	300.0		200	210077	05/11/20 21:42	RDC	TAL PHX
Total/NA	Analysis	300.0		5	210201	05/12/20 21:11	RDC	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210622	05/19/20 00:35	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210962	05/21/20 18:56	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	211160	05/26/20 18:54	SRA	TAL PHX
Total/NA	Prep	200.8			210014	05/11/20 08:57	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	210085	05/11/20 20:45	ARE	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M66-0520

Lab Sample ID: 550-141925-12

Date Collected: 05/05/20 12:46

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211332	05/28/20 00:41	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211444	05/29/20 15:00	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	209967	05/09/20 21:47	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	210029	(Start) 05/11/20 11:20 (End) 05/12/20 10:15	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	210921	05/21/20 16:30	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	210095	05/11/20 22:38	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	210096	05/11/20 20:21	DGS	TAL PHX

Client Sample ID: CH-CCR-M66-0520

Lab Sample ID: 550-141925-13

Date Collected: 05/05/20 12:46

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			209973	05/11/20 05:21	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	211052	05/23/20 00:11	SRA	TAL PHX
Dissolved	Prep	200.8			210012	05/11/20 08:45	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		1	210084	05/11/20 20:10	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	497612	06/04/20 19:07	JMB	TAL DEN

Client Sample ID: CH-CCR-M67-0520

Lab Sample ID: 550-141925-14

Date Collected: 05/05/20 11:22

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	210201	05/12/20 22:33	RDC	TAL PHX
Total/NA	Analysis	300.0		2	210424	05/14/20 23:39	RDC	TAL PHX
Total/NA	Analysis	300.0		200	210611	05/18/20 20:59	RDC	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210622	05/19/20 00:51	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210962	05/21/20 19:12	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	211160	05/26/20 19:02	SRA	TAL PHX
Total/NA	Prep	200.8			210014	05/11/20 08:57	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	210085	05/11/20 20:47	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211332	05/28/20 00:43	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211444	05/29/20 15:02	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	209967	05/09/20 21:55	DGS	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M67-0520

Lab Sample ID: 550-141925-14

Date Collected: 05/05/20 11:22

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	210029		YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	210921	05/21/20 16:30	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	210095	05/11/20 22:47	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	210096	05/11/20 20:36	DGS	TAL PHX

Client Sample ID: CH-CCR-M67-0520

Lab Sample ID: 550-141925-15

Date Collected: 05/05/20 11:22

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			209973	05/11/20 05:21	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	211052	05/23/20 00:15	SRA	TAL PHX
Dissolved	Prep	200.8			210012	05/11/20 08:45	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		1	211031	05/22/20 18:50	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	497612	06/04/20 19:24	JMB	TAL DEN

Client Sample ID: CH-CCR-W123-0520

Lab Sample ID: 550-141925-16

Date Collected: 05/06/20 11:14

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	210201	05/12/20 23:28	RDC	TAL PHX
Total/NA	Analysis	300.0		2	210424	05/15/20 03:18	RDC	TAL PHX
Total/NA	Analysis	300.0		200	210424	05/15/20 03:45	RDC	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210622	05/19/20 00:55	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210962	05/21/20 19:16	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	211160	05/26/20 19:06	SRA	TAL PHX
Total/NA	Prep	200.8			210014	05/11/20 08:57	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	210085	05/11/20 20:49	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211332	05/28/20 00:45	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211444	05/29/20 15:04	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	209967	05/09/20 22:04	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	210029		YET	TAL PHX
					(Start)	05/11/20 11:20		
					(End)	05/12/20 10:15		
Total/NA	Analysis	SM 4500 H+ B		1	210921	05/21/20 16:30	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	210095	05/11/20 22:54	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	210096	05/11/20 20:57	DGS	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-W123-0520

Lab Sample ID: 550-141925-17

Date Collected: 05/06/20 11:14

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			209973	05/11/20 05:21	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	211052	05/23/20 00:19	SRA	TAL PHX
Dissolved	Prep	200.8			210012	05/11/20 08:45	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		1	211031	05/22/20 18:52	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	497282	06/03/20 11:18	JMB	TAL DEN

Client Sample ID: CH-CCR-W125-0520

Lab Sample ID: 550-141925-18

Date Collected: 05/06/20 12:45

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	210424	05/15/20 04:13	RDC	TAL PHX
Total/NA	Analysis	300.0		200	210424	05/15/20 04:40	RDC	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210622	05/19/20 00:59	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	211270	05/28/20 03:20	SRA	TAL PHX
Total/NA	Analysis	SM 2320B		1	209967	05/09/20 22:13	DGS	TAL PHX

Client Sample ID: CH-CCR-W126-0520

Lab Sample ID: 550-141925-19

Date Collected: 05/05/20 14:09

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	210201	05/12/20 23:55	RDC	TAL PHX
Total/NA	Analysis	300.0		2	210424	05/15/20 05:07	RDC	TAL PHX
Total/NA	Analysis	300.0		200	210424	05/15/20 05:35	RDC	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210622	05/19/20 01:03	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210962	05/21/20 19:24	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	211270	05/28/20 03:37	SRA	TAL PHX
Total/NA	Prep	200.8			210014	05/11/20 08:57	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	210085	05/11/20 20:55	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211332	05/28/20 00:47	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211444	05/29/20 15:06	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	209967	05/09/20 22:38	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	210029		YET	TAL PHX
					(Start)	05/11/20 11:20		
					(End)	05/12/20 10:15		
Total/NA	Analysis	SM 4500 H+ B		1	210921	05/21/20 16:30	MRR	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-W126-0520

Lab Sample ID: 550-141925-19

Date Collected: 05/05/20 14:09

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 NH3 D		1	210095	05/11/20 23:03	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	211616	06/01/20 16:03	DGS	TAL PHX

Client Sample ID: CH-CCR-W126-0520

Lab Sample ID: 550-141925-20

Date Collected: 05/05/20 14:09

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			209973	05/11/20 05:21	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	211052	05/23/20 00:23	SRA	TAL PHX
Dissolved	Prep	200.8			210012	05/11/20 08:45	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		1	211031	05/22/20 18:54	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	497612	06/04/20 20:26	JMB	TAL DEN

Client Sample ID: CH-CCR-FD05-0520

Lab Sample ID: 550-141925-21

Date Collected: 05/06/20 08:13

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	210201	05/13/20 00:23	RDC	TAL PHX
Total/NA	Analysis	300.0		2	210424	05/15/20 06:02	RDC	TAL PHX
Total/NA	Analysis	300.0		200	210424	05/15/20 06:30	RDC	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210622	05/19/20 01:07	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210962	05/21/20 19:28	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	211160	05/26/20 19:14	SRA	TAL PHX
Total/NA	Prep	200.8			210014	05/11/20 08:57	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	210085	05/11/20 20:57	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	211032	05/22/20 19:13	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211332	05/28/20 00:24	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211444	05/28/20 23:00	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	209967	05/09/20 22:57	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	210029		YET	TAL PHX
					(Start)	05/11/20 11:20		
					(End)	05/12/20 10:15		
Total/NA	Analysis	SM 4500 H+ B		1	210921	05/21/20 16:30	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	210095	05/11/20 23:12	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	210096	05/11/20 21:31	DGS	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-FD05-0520

Lab Sample ID: 550-141925-22

Date Collected: 05/06/20 08:13

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			209973	05/11/20 05:21	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	211052	05/23/20 00:27	SRA	TAL PHX
Dissolved	Prep	200.8			210012	05/11/20 08:45	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		1	211031	05/22/20 18:56	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	497282	06/03/20 12:38	JMB	TAL DEN

Client Sample ID: CH-TANNERS-0520

Lab Sample ID: 550-141925-23

Date Collected: 05/08/20 08:02

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	210201	05/13/20 01:18	RDC	TAL PHX
Total/NA	Analysis	300.0		2	210424	05/15/20 06:57	RDC	TAL PHX
Total/NA	Analysis	300.0		200	210424	05/15/20 07:25	RDC	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210622	05/19/20 01:11	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210962	05/21/20 19:32	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	211270	05/28/20 03:41	SRA	TAL PHX
Total/NA	Prep	200.8			210014	05/11/20 08:57	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	210085	05/11/20 20:59	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211332	05/28/20 00:49	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	209967	05/09/20 23:06	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	210140		YET	TAL PHX
					(Start)	05/12/20 11:12		
					(End)	05/13/20 11:20		
Total/NA	Analysis	SM 4500 H+ B		1	210921	05/21/20 16:30	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	210663	05/18/20 22:58	KJS	TAL PHX
Total/NA	Analysis	SM 5310B		1	211616	06/01/20 16:13	DGS	TAL PHX

Client Sample ID: CH-CCR-W309-0520

Lab Sample ID: 550-141925-24

Date Collected: 05/04/20 14:24

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	210201	05/13/20 01:45	RDC	TAL PHX
Total/NA	Analysis	300.0		2	210424	05/15/20 08:47	RDC	TAL PHX
Total/NA	Analysis	300.0		200	210424	05/15/20 09:14	RDC	TAL PHX
Total/NA	Prep	200.7			210154	05/12/20 13:26	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210331	05/13/20 20:09	SRA	TAL PHX
Total/NA	Prep	200.7			210154	05/12/20 13:26	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210442	05/14/20 20:14	SRA	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-W309-0520

Lab Sample ID: 550-141925-24

Date Collected: 05/04/20 14:24

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			210154	05/12/20 13:26	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	210755	05/19/20 21:32	SRA	TAL PHX
Total/NA	Prep	200.8			210155	05/12/20 13:29	MGM	TAL PHX
Total/NA	Analysis	200.8 LL		1	210296	05/13/20 17:54	ARE	TAL PHX
Total/NA	Prep	200.8			210155	05/12/20 13:29	MGM	TAL PHX
Total/NA	Analysis	200.8 LL		1	210302	05/13/20 18:49	ARE	TAL PHX
Total/NA	Prep	200.8			210734	05/20/20 05:21	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	210895	05/20/20 22:40	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	210520	05/16/20 18:27	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	210029		YET	TAL PHX
					(Start)	05/11/20 11:20		
					(End)	05/12/20 10:15		
Total/NA	Analysis	SM 4500 H+ B		1	210921	05/21/20 16:30	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	210663	05/18/20 23:05	KJS	TAL PHX
Total/NA	Analysis	SM 5310B		1	610673	05/29/20 21:31	YZ	TAL IRV

Client Sample ID: CH-CCR-W309-0520

Lab Sample ID: 550-141925-25

Date Collected: 05/04/20 14:24

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			210130	05/12/20 10:33	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	210333	05/13/20 23:28	SRA	TAL PHX
Dissolved	Prep	200.8			210126	05/12/20 09:27	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		1	210304	05/13/20 19:06	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	610686	05/30/20 08:12	YZ	TAL IRV

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL IRV = Eurofins Calscience Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Laboratory: Eurofins TestAmerica, Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-08-20
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
200.8 LL	200.8	Water	Molybdenum
SM 2320B		Water	Alkalinity, Phenolphthalein
SM 2540C		Water	Total Dissolved Solids
SM 4500 H+ B		Water	Temperature

Laboratory: Eurofins Calscience Irvine

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0671	10-14-20
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
SM 5310B		Water	Dissolved Organic Carbon
SM 5310B		Water	Total Organic Carbon

Laboratory: Eurofins TestAmerica, Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-21
A2LA	ISO/IEC 17025	2907.01	10-31-21
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-08-21
Arizona	State	AZ0713	12-20-20
Arkansas DEQ	State	19-047-0	06-01-21
California	State	2513	01-08-21
Connecticut	State	PH-0686	09-30-20
Florida	NELAP	E87667-57	06-30-20
Georgia	State	4025-011	01-09-21
Illinois	NELAP	2000172019-1	04-30-21
Iowa	State	IA#370	12-01-20
Kansas	NELAP	E-10166	04-30-21
Louisiana	NELAP	30785	06-30-20
Maine	State	2019011 (231)	03-03-21
Minnesota	NELAP	1788752	12-31-20
Nevada	State	CO000262020-1	07-31-20
New Hampshire	NELAP	205319	04-29-21
New Jersey	NELAP	190002	06-30-20
New York	NELAP	59923	04-01-21
North Carolina (WW/SW)	State	358	12-31-20
North Dakota	State	R-034	01-08-21
Oklahoma	State	2018-006	08-31-20
Oregon	NELAP	4025-011	01-08-21
Pennsylvania	NELAP	013	08-01-20
South Carolina	State	72002001	01-08-21

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins TestAmerica, Phoenix

Accreditation/Certification Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Laboratory: Eurofins TestAmerica, Denver (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704183-19-17	09-30-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	US Federal Programs	P330-18-00099	03-26-21
Utah	NELAP	CO000262019-11	07-31-20
Virginia	NELAP	10490	06-14-20
Washington	State	C583-19	08-05-20
West Virginia DEP	State	354	11-30-20
Wisconsin	State	999615430	08-31-20
Wyoming (UST)	A2LA	2907.01	10-31-21

Method Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PHX
200.7 Rev 4.4	Metals (ICP)	40CFR136A	TAL PHX
200.8 LL	Metals (ICP/MS)	EPA	TAL PHX
SM 2320B	Alkalinity	SM	TAL PHX
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PHX
SM 4500 H+ B	pH	SM	TAL PHX
SM 4500 NH3 D	Ammonia	SM	TAL PHX
SM 5310B	Organic Carbon, Dissolved (DOC)	SM	TAL DEN
SM 5310B	Organic Carbon, Dissolved (DOC)	SM	TAL IRV
SM 5310B	Organic Carbon, Total (TOC)	SM	TAL IRV
SM 5310B	Organic Carbon, Total (TOC)	SM	TAL PHX
200.7	Preparation, Total Metals	EPA	TAL PHX
200.8	Preparation, Total Metals	EPA	TAL PHX

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL IRV = Eurofins Calscience Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Chain of Custody Record



Environment Testing
America



Client Information (Sub Contract Lab)		Sampler: Lab PM: Baker, Ken		Carrier Tracking No(s):		COC No: 550-27828.1	
Client Contact: Shipping/Receiving		Phone: E-Mail: ken.baker@testamericainc.com		State of Origin: Arizona		Page: 1 of 1	
Company: TestAmerica Laboratories, Inc.		Address: 4955 Yarrow Street, City: Anvada, State: Zip: CO, 80002		Accreditations Required (See note): State Program - Arizona		Job #: 550-141925-1	
Phone: 303-736-0100(Tel) 303-431-7171(Fax)		Email:		Due Date Requested: 5/20/2020		Preservation Codes:	
TAT Requested (days):		PO #:		WFO #:		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:	
Project Name: CCR Groundwater Monitoring		Project #: 55009651		Matrix (W-water, S-solid, O-organic, A-Air)		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4.5 Z - other (specify)	
Site: Arizona Public Service		SSOW#:		Field Filtered Sample (Yes or No)		Total Number of Containers	
Sample Identification - Client ID (Lab ID)		Sample Date		Sample Time		Sample Preservation Code	
CH-CCR-M50A-0520 (550-141925-5)	5/6/20	13:46	Water	X		2	
CH-CCR-M51A-0520 (550-141925-7)	5/6/20	15:15	Water	X		2	
CH-CCR-M64-0520 (550-141925-9)	5/6/20	08:13	Water	X		2	
CH-CCR-M65-0520 (550-141925-11)	5/5/20	08:16	Water	X		2	
CH-CCR-M66-0520 (550-141925-13)	5/5/20	12:46	Water	X		2	
CH-CCR-M67-0520 (550-141925-15)	5/5/20	11:22	Water	X		2	
CH-CCR-W123-0520 (550-141925-17)	5/6/20	11:14	Water	X		2	
CH-CCR-W126-0520 (550-141925-20)	5/5/20	14:09	Water	X		2	
CH-CCR-FD05-0520 (550-141925-22)	5/6/20	08:13	Water	X		2	
<p>Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.</p>							
<p>Possible Hazard Identification</p> <p>Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2</p> <p>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</p> <p><input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For Months</p>							
<p>Empty Kit Relinquished by: Date: Time: Method of Shipment:</p> <p>Relinquished by: Date/Time: Company: Received by: Date/Time: Company: 5-29-20 08:35 EMDA</p> <p>Relinquished by: Date/Time: Company: Received by: Date/Time: Company:</p> <p>Custody Seals Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Custody Seal No.: 1307715 Cooler Temperature(s) and Other Remarks: 3.4, 18.4, 6.0, 15.5 5-29-20</p>							

Eurofins TestAmerica, Phoenix

4825 East Cotton Ctr Blvd Suite 189

Phoenix, AZ 85040

Phone 602-437-3340 Fax 602-454-9303

Chain of Custody Record



Environment Testing
America



Client Information (Sub Contract Lab) Client Contact: Baker, Ken Shipping/Receiving: ken.baker@testamericainc.com Company: Eurofins CalScience LLC		Lab PM: Baker, Ken E-Mail: ken.baker@testamericainc.com State of Origin: Arizona	Carrier Tracking No(s): 1835-2434 Page: 1 of 1 Job #: 550-141925-1	COC No: 550-27827-1
Address: 17461 Derian Ave, Suite 100, Irvine, CA, 92614-5817 Phone: 949-261-1022(Tel) 949-260-3297(Fax) Email: ken.baker@testamericainc.com		Accreditation Required (See note): State Program - Arizona		
Due Date Requested: 5/20/2020 TAT Requested (days): 7		Analysis Requested: SM5310 DOC, BFIELD, FLTRD FF DOC		
City: Irvine State, Zip: CA, 92614-5817 PO #: 949-261-1022(Tel) 949-260-3297(Fax) WO #: 55009651 Project #: 55009651 SSOW#: 55009651		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:		
Project Name: CCR Groundwater Monitoring Site: Arizona Public Service		Total Number of Containers: 1		
Sample Identification - Client ID (Lab ID): CH-CCR-W309-0520 (550-141925-24)		Special Instructions/Note:		
Sample Date: 5/4/20	Sample Time: 14 24	Sample Type (C=Comp, G=grab): Water	Matrix (W=water, S=solid, O=waste/soil, BT=biological, A=air): Water	AZ Sample
Sample Date: 5/4/20	Sample Time: 14 24	Sample Type (C=Comp, G=grab): Water	Matrix (W=water, S=solid, O=waste/soil, BT=biological, A=air): Water	2
Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		
Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/QC Requirements		
Empty Kit Relinquished by: Ken Baker		Method of Shipment:		
Relinquished by: Ken Baker		Received by: Ken Baker		
Relinquished by: Ken Baker		Received by: Ken Baker		
Relinquished by: Ken Baker		Received by: Ken Baker		
Custody Seals Intact: Yes		Cooler Temperature(s) °C and Other Remarks: 2.9 / 3.1		

Login Sample Receipt Checklist

Client: Arizona Public Service Company

Job Number: 550-141925-1

SDG Number: APS Cholla Power Plant (FAP)

Login Number: 141925

List Number: 1

Creator: Gravlin, Andrea

List Source: Eurofins TestAmerica, Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

Login Sample Receipt Checklist

Client: Arizona Public Service Company

Job Number: 550-141925-1
SDG Number: APS Cholla Power Plant (FAP)

Login Number: 141925

List Number: 2

Creator: Skinner, Alma D

List Source: Eurofins Irvine

List Creation: 05/29/20 09:50 AM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	Not Present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Arizona Public Service Company

Job Number: 550-141925-1

SDG Number: APS Cholla Power Plant (FAP)

Login Number: 141925

List Number: 3

Creator: Schade, Daniel B

List Source: Eurofins TestAmerica, Denver

List Creation: 05/29/20 02:56 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

ANALYTICAL REPORT

Eurofins TestAmerica, Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-151754-1

Client Project/Site: CCR Groundwater Monitoring

For:

Arizona Public Service Company
County Road 6675, Stn 4915
Fruitland, New Mexico 87416

Attn: Natalie Chrisman



Authorized for release by:
11/30/2020 4:00:38 PM

Ken Baker, Project Manager II
(602)659-7624
Ken.Baker@Eurofinset.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	5
Sample Summary	6
Detection Summary	7
Client Sample Results	15
QC Sample Results	30
QC Association Summary	50
Lab Chronicle	61
Certification Summary	72
Method Summary	73
Chain of Custody	74
Receipt Checklists	78



Definitions/Glossary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
D5	Minimum Reporting Limit (MRL) adjusted due to sample dilution; analyte was non-detect in the sample.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above MDL.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
M1	Matrix spike recovery was high, the associated blank spike recovery was acceptable.

Metals

Qualifier	Qualifier Description
B1	Target analyte detected in method blank at or above the method reporting limit.
B3	Target analyte detected in calibration blank at or above the method reporting limit.
B7	Target analyte detected in method blank at or above method reporting limit. Concentration found in the sample was 10 times above the concentration found in the blank.
D1	Sample required dilution due to matrix.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above MDL.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
M1	Matrix spike recovery was high, the associated blank spike recovery was acceptable.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.
V1	CCV recovery was above method acceptance limits. This target analyte was not detected in the sample.

General Chemistry

Qualifier	Qualifier Description
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above MDL.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
H5	This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.
M2	Matrix spike recovery was low, the associated blank spike recovery was acceptable.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated

Definitions/Glossary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Job ID: 550-151754-1

Laboratory: Eurofins TestAmerica, Phoenix

Narrative

Job Narrative 550-151754-1

Comments

No additional comments.

Receipt

The samples were received on 10/26/2020 2:25 PM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7° C, 2.7° C and 3.5° C.

Receipt Exceptions

One of the vials for DOC got bumped during labeling and broke.

CH-CCR-M50-1020 (550-151754-5).

2 of the vials for DOC were broken in the plastic wrap. CH-CCR-M65-1020 (550-151754-11).

CH-CCR-M44D-1020 (550-151754-1), CH-CCR-M46-1020 (550-151754-2), CH-CCR-M50-1020 (550-151754-4), CH-CCR-M50-1020 (550-151754-5), CH-CCR-M51-1020 (550-151754-6), CH-CCR-M64-1020 (550-151754-8), CH-CCR-M65-1020 (550-151754-10), CH-CCR-M66-1020 (550-151754-12), CH-CCR-M67-1020 (550-151754-14), CH-CCR-W123-1020 (550-151754-16), CH-CCR-W125-1020 (550-151754-18), CH-CCR-W126-1020 (550-151754-19) and CH-CCR-FD05-1020 (550-151754-21)

Containers received with about 75mL in containers.

HPLC/IC

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals

Method 200.8: <EXPLANATION_REQUIRED>

limited sample volume

CH-CCR-M44D-1020 (550-151754-1)

Method 200.7 Rev 4.4: The continuing calibration blank (CCB) for analytical batch 550-224589 contained Beryllium above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

Method 200.8 LL: The continuing calibration blank (CCB) for analytical batch 550-225098 contained arsenic above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

Method 200.7 Rev 4.4: The continuing calibration verification (CCV) associated with batch 550-225525 recovered above the upper control limit for Beryllium. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Field Service / Mobile Lab

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
550-151754-1	CH-CCR-M44D-1020	Water	10/24/20 13:53	10/26/20 14:25	
550-151754-2	CH-CCR-M46-1020	Water	10/25/20 15:27	10/26/20 14:25	
550-151754-3	CH-CCR-M46-1020	Water	10/25/20 15:27	10/26/20 14:25	
550-151754-4	CH-CCR-M50-1020	Water	10/25/20 08:33	10/26/20 14:25	
550-151754-5	CH-CCR-M50-1020	Water	10/25/20 08:33	10/26/20 14:25	
550-151754-6	CH-CCR-M51-1020	Water	10/25/20 09:40	10/26/20 14:25	
550-151754-7	CH-CCR-M51-1020	Water	10/25/20 09:40	10/26/20 14:25	
550-151754-8	CH-CCR-M64-1020	Water	10/24/20 11:45	10/26/20 14:25	
550-151754-9	CH-CCR-M64-1020	Water	10/24/20 11:45	10/26/20 14:25	
550-151754-10	CH-CCR-M65-1020	Water	10/25/20 14:12	10/26/20 14:25	
550-151754-11	CH-CCR-M65-1020	Water	10/25/20 14:12	10/26/20 14:25	
550-151754-12	CH-CCR-M66-1020	Water	10/25/20 12:45	10/26/20 14:25	
550-151754-13	CH-CCR-M66-1020	Water	10/25/20 12:45	10/26/20 14:25	
550-151754-14	CH-CCR-M67-1020	Water	10/25/20 16:21	10/26/20 14:25	
550-151754-15	CH-CCR-M67-1020	Water	10/25/20 16:21	10/26/20 14:25	
550-151754-16	CH-CCR-W123-1020	Water	10/26/20 08:38	10/26/20 14:25	
550-151754-17	CH-CCR-W123-1020	Water	10/26/20 08:38	10/26/20 14:25	
550-151754-18	CH-CCR-W125-1020	Water	10/24/20 15:16	10/26/20 14:25	
550-151754-19	CH-CCR-W126-1020	Water	10/25/20 11:34	10/26/20 14:25	
550-151754-20	CH-CCR-W126-1020	Water	10/25/20 11:34	10/26/20 14:25	
550-151754-21	CH-CCR-FD05-1020	Water	10/25/20 09:40	10/26/20 14:25	
550-151754-22	CH-CCR-FD05-1020	Water	10/25/20 09:40	10/26/20 14:25	

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-M44D-1020

Lab Sample ID: 550-151754-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	960	D2	400	100	mg/L	200		300.0	Total/NA
Fluoride	0.73	D1 E4	0.80	0.095	mg/L	2		300.0	Total/NA
Sulfate	290	D2 E4	400	85	mg/L	200		300.0	Total/NA
Beryllium	0.00025	E4 V1	0.0010	0.000067	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.035		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	0.22		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	78		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0057	D1	0.0040	0.0020	mg/L	4		200.8 LL	Total/NA
Barium	0.021	D1	0.0020	0.0010	mg/L	2		200.8 LL	Total/NA
Lead	0.0013	E4	0.0020	0.00088	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0018	E4	0.0020	0.00081	mg/L	2		200.8 LL	Total/NA
Selenium	0.00040	E4	0.0020	0.00030	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	2300	D2	40	40	mg/L	1		SM 2540C	Total/NA
pH	7.1	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	14.2	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: CH-CCR-M46-1020

Lab Sample ID: 550-151754-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6900	D2	400	100	mg/L	200		300.0	Total/NA
Fluoride	0.51	D1 E4	0.80	0.095	mg/L	2		300.0	Total/NA
Sulfate	2100	D2	400	85	mg/L	200		300.0	Total/NA
Lithium	0.25		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	0.58		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	1300	M3	2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	1.1		0.10	0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	3.3		0.010	0.00019	mg/L	1		200.7 Rev 4.4	Total/NA
Antimony	0.00014	E4	0.0020	0.000087	mg/L	2		200.8 LL	Total/NA
Arsenic	0.0038	D1	0.0020	0.00099	mg/L	4		200.8 LL	Total/NA
Barium	0.028	D1	0.0010	0.00052	mg/L	2		200.8 LL	Total/NA
Chromium	0.0046		0.0020	0.00087	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0015	D1	0.0010	0.00013	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0093		0.0010	0.00040	mg/L	2		200.8 LL	Total/NA
Selenium	0.0047		0.0020	0.00030	mg/L	4		200.8 LL	Total/NA
Thallium	0.000058	E4	0.00020	0.000026	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	13000	D2	200	200	mg/L	1		SM 2540C	Total/NA
pH	7.2	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	16.0	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Ammonia	0.67		0.50	0.28	mg/L	1		SM 4500 NH3 D	Total/NA
Total Organic Carbon	3.4		0.50	0.26	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	3.4		0.50	0.26	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	3.4		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-M46-1020

Lab Sample ID: 550-151754-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	0.67		0.10	0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Manganese	3.5		0.010	0.00019	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.0039	D1	0.0020	0.00099	mg/L	4		200.8 LL	Dissolved
Cobalt	0.0016	D1 E4	0.0020	0.00025	mg/L	4		200.8 LL	Dissolved
Dissolved Organic Carbon	3.1	M2	0.50	0.26	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	3.1	M2	0.50	0.26	mg/L	1		SM 5310B	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-M46-1020 (Continued)

Lab Sample ID: 550-151754-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Organic Carbon - Quad	3.1	M2	0.50	0.26	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-M50-1020

Lab Sample ID: 550-151754-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2100	D2	400	100	mg/L	200		300.0	Total/NA
Fluoride	2.2	D1	0.80	0.095	mg/L	2		300.0	Total/NA
Sulfate	3200	D2	400	85	mg/L	200		300.0	Total/NA
Lithium	0.48		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	2.9		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	560		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.28		0.10	0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.24		0.010	0.00019	mg/L	1		200.7 Rev 4.4	Total/NA
Antimony	0.00016	E4	0.0020	0.000087	mg/L	2		200.8 LL	Total/NA
Arsenic	0.0043	D1	0.0020	0.00099	mg/L	4		200.8 LL	Total/NA
Barium	0.0096	D1	0.0010	0.00052	mg/L	2		200.8 LL	Total/NA
Cadmium	0.00014	E4	0.00020	0.000046	mg/L	2		200.8 LL	Total/NA
Chromium	0.053		0.0020	0.00087	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0016	D1	0.0010	0.00013	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.014		0.0010	0.00040	mg/L	2		200.8 LL	Total/NA
Selenium	0.0050		0.0020	0.00030	mg/L	4		200.8 LL	Total/NA
Thallium	0.000076	E4	0.00020	0.000026	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	7400	D2	100	100	mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	16.2	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	2.6		0.50	0.26	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	2.6		0.50	0.26	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	2.6		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-M50-1020

Lab Sample ID: 550-151754-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	0.21		0.10	0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Manganese	0.22		0.010	0.00019	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.0040	D1	0.0020	0.00099	mg/L	4		200.8 LL	Dissolved
Cobalt	0.0012	D1	0.0010	0.00013	mg/L	2		200.8 LL	Dissolved
Dissolved Organic Carbon	2.9		0.50	0.26	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	2.9		0.50	0.26	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	2.9		0.50	0.26	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-M51-1020

Lab Sample ID: 550-151754-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5600	D2	400	100	mg/L	200		300.0	Total/NA
Fluoride	5.9	D1	0.80	0.095	mg/L	2		300.0	Total/NA
Sulfate	3100	D2	400	85	mg/L	200		300.0	Total/NA
Lithium	0.47		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	30		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	840		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.041	E4	0.10	0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.92		0.010	0.00019	mg/L	1		200.7 Rev 4.4	Total/NA
Antimony	0.00010	E4	0.0020	0.000087	mg/L	2		200.8 LL	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-M51-1020 (Continued)

Lab Sample ID: 550-151754-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.028	D1	0.0020	0.00099	mg/L	4		200.8 LL	Total/NA
Barium	0.0085	D1	0.0010	0.00052	mg/L	2		200.8 LL	Total/NA
Cadmium	0.00017	E4	0.00020	0.000046	mg/L	2		200.8 LL	Total/NA
Chromium	0.0060		0.0020	0.00087	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0015	D1	0.0010	0.00013	mg/L	2		200.8 LL	Total/NA
Lead	0.00053	E4	0.0010	0.00044	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.12		0.0010	0.00040	mg/L	2		200.8 LL	Total/NA
Thallium	0.00019	E4	0.00020	0.000026	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	11000	D2	200	200	mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	15.4	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	1.5		0.50	0.26	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	1.5		0.50	0.26	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	1.5		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-M51-1020

Lab Sample ID: 550-151754-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.97		0.010	0.00019	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.027	B3 B7 D1	0.0010	0.00049	mg/L	2		200.8 LL	Dissolved
Cobalt	0.0012	D1	0.0010	0.00013	mg/L	2		200.8 LL	Dissolved
Dissolved Organic Carbon	1.6	M2	0.50	0.26	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	1.6	M2	0.50	0.26	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	1.6	M2	0.50	0.26	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-M64-1020

Lab Sample ID: 550-151754-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4500	D2	400	100	mg/L	200		300.0	Total/NA
Fluoride	0.28	D1 E4	0.80	0.095	mg/L	2		300.0	Total/NA
Sulfate	4400	D2	400	85	mg/L	200		300.0	Total/NA
Lithium	0.31		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	1.2		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	480		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	5.5		0.10	0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	2.0		0.010	0.00019	mg/L	1		200.7 Rev 4.4	Total/NA
Antimony	0.00010	E4	0.0020	0.000087	mg/L	2		200.8 LL	Total/NA
Arsenic	0.0036	D1	0.0020	0.00099	mg/L	4		200.8 LL	Total/NA
Barium	0.012	D1	0.0010	0.00052	mg/L	2		200.8 LL	Total/NA
Cobalt	0.00025	D1 E4	0.0010	0.00013	mg/L	2		200.8 LL	Total/NA
Lead	0.0010		0.0010	0.00044	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0051		0.0010	0.00040	mg/L	2		200.8 LL	Total/NA
Selenium	0.0044		0.0020	0.00030	mg/L	4		200.8 LL	Total/NA
Total Dissolved Solids	12000	D2	200	200	mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	15.7	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Ammonia	0.77		0.50	0.28	mg/L	1		SM 4500 NH3 D	Total/NA
Total Organic Carbon	4.5		0.50	0.26	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	4.5		0.50	0.26	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	4.5		0.50	0.26	mg/L	1		SM 5310B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-M64-1020

Lab Sample ID: 550-151754-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	5.5		0.10	0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Manganese	2.2		0.010	0.00019	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.0018	D1 E4	0.0020	0.00099	mg/L	4		200.8 LL	Dissolved
Dissolved Organic Carbon	4.8		0.50	0.26	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	4.8		0.50	0.26	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	4.8		0.50	0.26	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-M65-1020

Lab Sample ID: 550-151754-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4200	D2	400	100	mg/L	200		300.0	Total/NA
Fluoride	2.6	D1	0.80	0.095	mg/L	2		300.0	Total/NA
Sulfate	3200	D2	400	85	mg/L	200		300.0	Total/NA
Lithium	0.57		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	13		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	780		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	1.2		0.10	0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.30		0.010	0.00019	mg/L	1		200.7 Rev 4.4	Total/NA
Antimony	0.000096	E4	0.0020	0.000087	mg/L	2		200.8 LL	Total/NA
Arsenic	0.0064	D1	0.0020	0.00099	mg/L	4		200.8 LL	Total/NA
Barium	0.024	D1	0.0010	0.00052	mg/L	2		200.8 LL	Total/NA
Chromium	0.019		0.0020	0.00087	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0039	D1	0.0010	0.00013	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.22		0.0010	0.00040	mg/L	2		200.8 LL	Total/NA
Selenium	0.0049		0.0020	0.00030	mg/L	4		200.8 LL	Total/NA
Thallium	0.000042	E4	0.00020	0.000026	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	10000	D2	100	100	mg/L	1		SM 2540C	Total/NA
pH	7.0	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	15.8	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	3.2		0.50	0.26	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	3.2		0.50	0.26	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	3.2		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-M65-1020

Lab Sample ID: 550-151754-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	0.84		0.10	0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Manganese	0.33		0.010	0.00019	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.0049	D1	0.0020	0.00099	mg/L	4		200.8 LL	Dissolved
Cobalt	0.0032	D1	0.0010	0.00013	mg/L	2		200.8 LL	Dissolved
Dissolved Organic Carbon	2.7		0.50	0.26	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	2.7		0.50	0.26	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	2.7		0.50	0.26	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-M66-1020

Lab Sample ID: 550-151754-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4400	D2	400	100	mg/L	200		300.0	Total/NA
Fluoride	1.4	D1	0.80	0.095	mg/L	2		300.0	Total/NA
Sulfate	3000	D2	400	85	mg/L	200		300.0	Total/NA
Lithium	0.49		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	1.5		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-M66-1020 (Continued)

Lab Sample ID: 550-151754-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	750		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.27		0.10	0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	3.8		0.010	0.00019	mg/L	1		200.7 Rev 4.4	Total/NA
Antimony	0.00010	E4	0.0020	0.000087	mg/L	2		200.8 LL	Total/NA
Arsenic	0.0019	D1 E4	0.0020	0.00099	mg/L	4		200.8 LL	Total/NA
Barium	0.013	D1	0.0010	0.00052	mg/L	2		200.8 LL	Total/NA
Cadmium	0.00048		0.00020	0.000046	mg/L	2		200.8 LL	Total/NA
Chromium	0.024		0.0020	0.00087	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0018	D1	0.0010	0.00013	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.017		0.0010	0.00040	mg/L	2		200.8 LL	Total/NA
Selenium	0.024		0.0020	0.00030	mg/L	4		200.8 LL	Total/NA
Thallium	0.00013	E4	0.00020	0.000026	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	10000	D2	100	100	mg/L	1		SM 2540C	Total/NA
pH	7.1	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	16.2	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	2.3		0.50	0.26	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	2.3		0.50	0.26	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	2.3		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-M66-1020

Lab Sample ID: 550-151754-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	0.25		0.10	0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Manganese	4.1		0.010	0.00019	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.0051	D1	0.0020	0.00099	mg/L	4		200.8 LL	Dissolved
Cobalt	0.0018	D1 E4	0.0020	0.00025	mg/L	4		200.8 LL	Dissolved
Dissolved Organic Carbon	2.3		0.50	0.26	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	2.3		0.50	0.26	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	2.3		0.50	0.26	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-M67-1020

Lab Sample ID: 550-151754-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5500	D2	400	100	mg/L	200		300.0	Total/NA
Fluoride	0.47	D1 E4	0.80	0.095	mg/L	2		300.0	Total/NA
Sulfate	1500	D2	400	85	mg/L	200		300.0	Total/NA
Lithium	0.18		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	0.33		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	1600		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	8.2		0.10	0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	4.7		0.010	0.00019	mg/L	1		200.7 Rev 4.4	Total/NA
Antimony	0.00014	E4	0.0020	0.000087	mg/L	2		200.8 LL	Total/NA
Arsenic	0.018	D1	0.0020	0.00099	mg/L	4		200.8 LL	Total/NA
Barium	0.024	D1	0.0010	0.00052	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0040		0.0010	0.00013	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0047		0.0010	0.00040	mg/L	2		200.8 LL	Total/NA
Selenium	0.00069	E4	0.0010	0.00015	mg/L	2		200.8 LL	Total/NA
Thallium	0.000066	E4	0.00020	0.000026	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	12000	D2	100	100	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	16.0	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Ammonia	1.4		0.50	0.28	mg/L	1		SM 4500 NH3 D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-M67-1020 (Continued)

Lab Sample ID: 550-151754-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon	2.1		0.50	0.26	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	2.1		0.50	0.26	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	2.1		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-M67-1020

Lab Sample ID: 550-151754-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	8.0		0.10	0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Manganese	5.1		0.010	0.00019	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.020	D1	0.0020	0.00099	mg/L	4		200.8 LL	Dissolved
Cobalt	0.0059	D1	0.0020	0.00025	mg/L	4		200.8 LL	Dissolved
Dissolved Organic Carbon	2.2		0.50	0.26	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	2.2		0.50	0.26	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	2.2		0.50	0.26	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-W123-1020

Lab Sample ID: 550-151754-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6400	D2	400	100	mg/L	200		300.0	Total/NA
Fluoride	3.6	D1	0.80	0.095	mg/L	2		300.0	Total/NA
Nitrate Nitrite as N	0.79	D1	0.25	0.11	mg/L	5		300.0	Total/NA
Sulfate	3800	D2	400	85	mg/L	200		300.0	Total/NA
Lithium	0.62		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	37		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	860		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.30		0.10	0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.12		0.010	0.00019	mg/L	1		200.7 Rev 4.4	Total/NA
Antimony	0.0042	D1	0.0040	0.00017	mg/L	4		200.8 LL	Total/NA
Arsenic	0.0056	D1	0.0020	0.00099	mg/L	4		200.8 LL	Total/NA
Barium	0.021	D1	0.0020	0.0010	mg/L	4		200.8 LL	Total/NA
Cadmium	0.00024	D1 E4	0.00040	0.000092	mg/L	4		200.8 LL	Total/NA
Chromium	0.037	D1	0.0040	0.0017	mg/L	4		200.8 LL	Total/NA
Cobalt	0.0043	D1	0.0020	0.00025	mg/L	4		200.8 LL	Total/NA
Lead	0.0015	D1 E4	0.0020	0.00088	mg/L	4		200.8 LL	Total/NA
Molybdenum	0.66	D1	0.0020	0.00081	mg/L	4		200.8 LL	Total/NA
Selenium	0.0081	D1	0.0020	0.00030	mg/L	4		200.8 LL	Total/NA
Thallium	0.00039	D1 E4	0.00040	0.000053	mg/L	4		200.8 LL	Total/NA
Total Dissolved Solids	14000	D2	200	200	mg/L	1		SM 2540C	Total/NA
pH	6.8	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	16.3	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	1.5		0.50	0.26	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	1.5		0.50	0.26	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	1.5		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-W123-1020

Lab Sample ID: 550-151754-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	0.075	E4	0.10	0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Manganese	0.022		0.010	0.00019	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.0038	D1	0.0020	0.00099	mg/L	4		200.8 LL	Dissolved
Cobalt	0.0021	D1	0.0020	0.00025	mg/L	4		200.8 LL	Dissolved
Dissolved Organic Carbon	1.7		0.50	0.26	mg/L	1		SM 5310B	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-W123-1020 (Continued)

Lab Sample ID: 550-151754-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dissolved Organic Carbon - Duplicate	1.7		0.50	0.26	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	1.7		0.50	0.26	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-W125-1020

Lab Sample ID: 550-151754-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3000	D2	400	100	mg/L	200		300.0	Total/NA
Fluoride	0.53	D1 E4	0.80	0.095	mg/L	2		300.0	Total/NA
Sulfate	1200	D2	400	85	mg/L	200		300.0	Total/NA
Beryllium	0.00013	E4 V1	0.0010	0.000067	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.029		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	0.16		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	120		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0073	D1	0.0020	0.00099	mg/L	4		200.8 LL	Total/NA
Barium	0.022	D1	0.0010	0.00052	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0012		0.0010	0.00013	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0026		0.0010	0.00040	mg/L	2		200.8 LL	Total/NA
Selenium	0.00065	E4	0.0010	0.00015	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	1800		20	20	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	7.9	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: CH-CCR-W126-1020

Lab Sample ID: 550-151754-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6900	D2	400	100	mg/L	200		300.0	Total/NA
Fluoride	4.2	D1	0.80	0.095	mg/L	2		300.0	Total/NA
Sulfate	4500	D2	400	85	mg/L	200		300.0	Total/NA
Lithium	0.74		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	43		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	720		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.064	E4	0.10	0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.29		0.010	0.00019	mg/L	1		200.7 Rev 4.4	Total/NA
Antimony	0.00036	E4	0.0040	0.00017	mg/L	4		200.8 LL	Total/NA
Arsenic	0.0020		0.0020	0.00099	mg/L	4		200.8 LL	Total/NA
Barium	0.018	D1 M1	0.0020	0.0010	mg/L	4		200.8 LL	Total/NA
Chromium	0.011		0.0040	0.0017	mg/L	4		200.8 LL	Total/NA
Cobalt	0.0083	D1 M1	0.0020	0.00025	mg/L	4		200.8 LL	Total/NA
Molybdenum	0.22		0.0020	0.00081	mg/L	4		200.8 LL	Total/NA
Selenium	0.0049		0.0020	0.00030	mg/L	4		200.8 LL	Total/NA
Thallium	0.00026	E4	0.00040	0.000053	mg/L	4		200.8 LL	Total/NA
Total Dissolved Solids	15000	D2	200	200	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	7.3	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	1.9		0.50	0.26	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	1.9		0.50	0.26	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	1.9		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-W126-1020

Lab Sample ID: 550-151754-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	0.048	E4	0.10	0.010	mg/L	1		200.7 Rev 4.4	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-W126-1020 (Continued)

Lab Sample ID: 550-151754-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.30		0.010	0.00019	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.0032	D1	0.0020	0.00099	mg/L	4		200.8 LL	Dissolved
Cobalt	0.0041	D1	0.0020	0.00025	mg/L	4		200.8 LL	Dissolved
Dissolved Organic Carbon	1.9		0.50	0.26	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	1.9		0.50	0.26	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	1.9		0.50	0.26	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-FD05-1020

Lab Sample ID: 550-151754-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4900	D2 M1	400	100	mg/L	200		300.0	Total/NA
Fluoride	6.0	D1	0.80	0.095	mg/L	2		300.0	Total/NA
Sulfate	2800	D2	400	85	mg/L	200		300.0	Total/NA
Lithium	0.47		0.020	0.0091	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	30		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	850		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.022	E4	0.10	0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.95		0.010	0.00019	mg/L	1		200.7 Rev 4.4	Total/NA
Antimony	0.00011	E4	0.0020	0.000087	mg/L	2		200.8 LL	Total/NA
Arsenic	0.027	D1	0.0020	0.00099	mg/L	4		200.8 LL	Total/NA
Barium	0.0086	D1	0.0010	0.00052	mg/L	2		200.8 LL	Total/NA
Cadmium	0.00013	E4	0.00020	0.000046	mg/L	2		200.8 LL	Total/NA
Chromium	0.0073		0.0020	0.00087	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0012		0.0010	0.00013	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.12		0.0010	0.00040	mg/L	2		200.8 LL	Total/NA
Thallium	0.00019	E4	0.00020	0.000026	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	11000	D2	200	200	mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	7.7	H5	0.1	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Ammonia	0.36	E4	0.50	0.28	mg/L	1		SM 4500 NH3 D	Total/NA
Total Organic Carbon	1.5		0.50	0.26	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	1.5		0.50	0.26	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	1.5		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-FD05-1020

Lab Sample ID: 550-151754-22

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	0.024	E4	0.10	0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Manganese	1.0		0.010	0.00019	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.025	B3 B7 D1	0.0010	0.00049	mg/L	2		200.8 LL	Dissolved
Cobalt	0.0011	D1	0.0010	0.00013	mg/L	2		200.8 LL	Dissolved
Dissolved Organic Carbon	1.6		0.50	0.26	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	1.6		0.50	0.26	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	1.6		0.50	0.26	mg/L	1		SM 5310B	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-M44D-1020

Lab Sample ID: 550-151754-1

Date Collected: 10/24/20 13:53

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	960	D2	400	100	mg/L			10/27/20 22:50	200
Fluoride	0.73	D1 E4	0.80	0.095	mg/L			10/27/20 22:31	2
Sulfate	290	D2 E4	400	85	mg/L			10/27/20 22:50	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.00025	E4 V1	0.0010	0.000067	mg/L		10/28/20 10:12	11/12/20 23:07	1
Lithium	0.035		0.020	0.0091	mg/L		11/16/20 15:50	11/17/20 18:16	1
Boron	0.22		0.050	0.0025	mg/L		10/28/20 10:12	11/03/20 14:22	1
Calcium	78		2.0	0.013	mg/L		10/28/20 10:12	11/03/20 14:22	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	E8	0.0040	0.00017	mg/L		11/02/20 09:46	11/12/20 22:15	2
Arsenic	0.0057	D1	0.0040	0.0020	mg/L		11/02/20 09:46	11/30/20 15:16	4
Barium	0.021	D1	0.0020	0.0010	mg/L		11/02/20 09:46	11/20/20 16:55	2
Cadmium	ND	E8	0.00040	0.000092	mg/L		11/02/20 09:46	11/12/20 22:15	2
Chromium	ND	E8	0.0040	0.0017	mg/L		11/02/20 09:46	11/12/20 22:15	2
Cobalt	ND	E8	0.0020	0.00025	mg/L		11/02/20 09:46	11/12/20 22:15	2
Lead	0.0013	E4	0.0020	0.00088	mg/L		11/02/20 09:46	11/12/20 22:15	2
Molybdenum	0.0018	E4	0.0020	0.00081	mg/L		11/02/20 09:46	11/12/20 22:15	2
Selenium	0.00040	E4	0.0020	0.00030	mg/L		11/02/20 09:46	11/12/20 22:15	2
Thallium	ND	E8	0.00040	0.000053	mg/L		11/02/20 09:46	11/12/20 22:15	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		10/28/20 18:28	10/29/20 17:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2300	D2	40	40	mg/L			10/28/20 09:27	1
pH	7.1	H5	1.7	1.7	SU			10/30/20 12:30	1
Temperature	14.2	H5	0.1	0.1	Degrees C			10/30/20 12:30	1

Client Sample ID: CH-CCR-M46-1020

Lab Sample ID: 550-151754-2

Date Collected: 10/25/20 15:27

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6900	D2	400	100	mg/L			10/28/20 00:03	200
Fluoride	0.51	D1 E4	0.80	0.095	mg/L			10/27/20 23:45	2
Nitrate Nitrite as N	ND	D1 D5 E8	0.25	0.11	mg/L			10/26/20 20:59	5
Sulfate	2100	D2	400	85	mg/L			10/28/20 00:03	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		10/28/20 10:12	11/03/20 14:18	1
Lithium	0.25		0.020	0.0091	mg/L		11/16/20 15:50	11/17/20 18:20	1
Boron	0.58		0.050	0.0025	mg/L		10/28/20 10:12	11/03/20 14:18	1
Calcium	1300	M3	2.0	0.013	mg/L		10/28/20 10:12	11/03/20 14:18	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-M46-1020

Lab Sample ID: 550-151754-2

Date Collected: 10/25/20 15:27

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	1.1		0.10	0.010	mg/L		10/28/20 10:12	11/03/20 14:18	1
Manganese	3.3		0.010	0.00019	mg/L		10/28/20 10:12	11/03/20 14:18	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00014	E4	0.0020	0.000087	mg/L		11/02/20 09:46	11/11/20 22:52	2
Arsenic	0.0038	D1	0.0020	0.00099	mg/L		11/02/20 09:46	11/30/20 15:03	4
Barium	0.028	D1	0.0010	0.00052	mg/L		11/02/20 09:46	11/20/20 16:20	2
Cadmium	ND	E8	0.00020	0.000046	mg/L		11/02/20 09:46	11/11/20 22:52	2
Chromium	0.0046		0.0020	0.00087	mg/L		11/02/20 09:46	11/11/20 22:52	2
Cobalt	0.0015	D1	0.0010	0.00013	mg/L		11/02/20 09:46	11/20/20 16:20	2
Lead	ND	E8	0.0010	0.00044	mg/L		11/02/20 09:46	11/11/20 22:52	2
Molybdenum	0.0093		0.0010	0.00040	mg/L		11/02/20 09:46	11/11/20 22:52	2
Selenium	0.0047		0.0020	0.00030	mg/L		11/02/20 09:46	11/30/20 13:53	4
Thallium	0.000058	E4	0.00020	0.000026	mg/L		11/02/20 09:46	11/11/20 22:52	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		10/28/20 18:28	10/29/20 17:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	13000	D2	200	200	mg/L			10/28/20 09:27	1
pH	7.2	H5	1.7	1.7	SU			10/30/20 12:30	1
Temperature	16.0	H5	0.1	0.1	Degrees C			10/30/20 12:30	1
Ammonia	0.67		0.50	0.28	mg/L			11/07/20 17:34	1
Total Organic Carbon	3.4		0.50	0.26	mg/L			10/27/20 22:02	1
Total Organic Carbon - Duplicates	3.4		0.50	0.26	mg/L			10/27/20 22:02	1
Total Organic Carbon - Quad	3.4		0.50	0.26	mg/L			10/27/20 22:02	1

Client Sample ID: CH-CCR-M46-1020

Lab Sample ID: 550-151754-3

Date Collected: 10/25/20 15:27

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.67		0.10	0.010	mg/L		10/28/20 09:33	11/04/20 00:32	1
Manganese	3.5		0.010	0.00019	mg/L		10/28/20 09:33	11/06/20 00:15	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0039	D1	0.0020	0.00099	mg/L		10/27/20 06:24	11/20/20 11:22	4
Cobalt	0.0016	D1 E4	0.0020	0.00025	mg/L		10/27/20 06:24	11/20/20 11:22	4

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	3.1	M2	0.50	0.26	mg/L			10/27/20 11:04	1
Dissolved Organic Carbon - Duplicate	3.1	M2	0.50	0.26	mg/L			10/27/20 11:04	1
Dissolved Organic Carbon - Quad	3.1	M2	0.50	0.26	mg/L			10/27/20 11:04	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-M50-1020

Lab Sample ID: 550-151754-4

Date Collected: 10/25/20 08:33

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2100	D2	400	100	mg/L			10/28/20 00:40	200
Fluoride	2.2	D1	0.80	0.095	mg/L			10/28/20 00:22	2
Nitrate Nitrite as N	ND	D1 D5 E8	0.25	0.11	mg/L			10/26/20 21:54	5
Sulfate	3200	D2	400	85	mg/L			10/28/20 00:40	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		10/28/20 10:12	11/03/20 14:25	1
Lithium	0.48		0.020	0.0091	mg/L		11/16/20 15:50	11/17/20 18:23	1
Boron	2.9		0.050	0.0025	mg/L		10/28/20 10:12	11/03/20 14:25	1
Calcium	560		2.0	0.013	mg/L		10/28/20 10:12	11/03/20 14:25	1
Iron	0.28		0.10	0.010	mg/L		10/28/20 10:12	11/03/20 14:25	1
Manganese	0.24		0.010	0.00019	mg/L		10/28/20 10:12	11/03/20 14:25	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00016	E4	0.0020	0.000087	mg/L		11/02/20 09:46	11/11/20 22:54	2
Arsenic	0.0043	D1	0.0020	0.00099	mg/L		11/02/20 09:46	11/30/20 15:05	4
Barium	0.0096	D1	0.0010	0.00052	mg/L		11/02/20 09:46	11/20/20 16:22	2
Cadmium	0.00014	E4	0.00020	0.000046	mg/L		11/02/20 09:46	11/11/20 22:54	2
Chromium	0.053		0.0020	0.00087	mg/L		11/02/20 09:46	11/11/20 22:54	2
Cobalt	0.0016	D1	0.0010	0.00013	mg/L		11/02/20 09:46	11/20/20 16:22	2
Lead	ND	E8	0.0010	0.00044	mg/L		11/02/20 09:46	11/11/20 22:54	2
Molybdenum	0.014		0.0010	0.00040	mg/L		11/02/20 09:46	11/11/20 22:54	2
Selenium	0.0050		0.0020	0.00030	mg/L		11/02/20 09:46	11/30/20 13:55	4
Thallium	0.000076	E4	0.00020	0.000026	mg/L		11/02/20 09:46	11/11/20 22:54	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		10/29/20 16:00	10/29/20 19:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	7400	D2	100	100	mg/L			10/28/20 09:27	1
pH	7.3	H5	1.7	1.7	SU			10/30/20 12:30	1
Temperature	16.2	H5	0.1	0.1	Degrees C			10/30/20 12:30	1
Ammonia	ND	E8	0.50	0.28	mg/L			11/07/20 17:41	1
Total Organic Carbon	2.6		0.50	0.26	mg/L			10/27/20 22:39	1
Total Organic Carbon - Duplicates	2.6		0.50	0.26	mg/L			10/27/20 22:39	1
Total Organic Carbon - Quad	2.6		0.50	0.26	mg/L			10/27/20 22:39	1

Client Sample ID: CH-CCR-M50-1020

Lab Sample ID: 550-151754-5

Date Collected: 10/25/20 08:33

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.21		0.10	0.010	mg/L		10/28/20 09:33	11/04/20 00:28	1
Manganese	0.22		0.010	0.00019	mg/L		10/28/20 09:33	11/06/20 00:11	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-M50-1020

Lab Sample ID: 550-151754-5

Date Collected: 10/25/20 08:33

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0040	D1	0.0020	0.00099	mg/L		10/27/20 06:24	11/20/20 11:24	4
Cobalt	0.0012	D1	0.0010	0.00013	mg/L		10/27/20 06:24	11/09/20 20:58	2

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	2.9		0.50	0.26	mg/L			10/27/20 11:38	1
Dissolved Organic Carbon - Duplicate	2.9		0.50	0.26	mg/L			10/27/20 11:38	1
Dissolved Organic Carbon - Quad	2.9		0.50	0.26	mg/L			10/27/20 11:38	1

Client Sample ID: CH-CCR-M51-1020

Lab Sample ID: 550-151754-6

Date Collected: 10/25/20 09:40

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5600	D2	400	100	mg/L			10/28/20 01:17	200
Fluoride	5.9	D1	0.80	0.095	mg/L			10/28/20 00:58	2
Nitrate Nitrite as N	ND	D1 D5 E8	0.25	0.11	mg/L			10/26/20 22:22	5
Sulfate	3100	D2	400	85	mg/L			10/28/20 01:17	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		10/28/20 10:12	11/03/20 14:29	1
Lithium	0.47		0.020	0.0091	mg/L		11/16/20 15:50	11/17/20 18:26	1
Boron	30		0.050	0.0025	mg/L		10/28/20 10:12	11/03/20 14:29	1
Calcium	840		2.0	0.013	mg/L		10/28/20 10:12	11/03/20 14:29	1
Iron	0.041	E4	0.10	0.010	mg/L		10/28/20 10:12	11/03/20 14:29	1
Manganese	0.92		0.010	0.00019	mg/L		10/28/20 10:12	11/03/20 14:29	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00010	E4	0.0020	0.000087	mg/L		11/02/20 09:46	11/11/20 22:57	2
Arsenic	0.028	D1	0.0020	0.00099	mg/L		11/02/20 09:46	11/30/20 15:07	4
Barium	0.0085	D1	0.0010	0.00052	mg/L		11/02/20 09:46	11/20/20 16:24	2
Cadmium	0.00017	E4	0.00020	0.000046	mg/L		11/02/20 09:46	11/11/20 22:57	2
Chromium	0.0060		0.0020	0.00087	mg/L		11/02/20 09:46	11/11/20 22:57	2
Cobalt	0.0015	D1	0.0010	0.00013	mg/L		11/02/20 09:46	11/20/20 16:24	2
Lead	0.00053	E4	0.0010	0.00044	mg/L		11/02/20 09:46	11/11/20 22:57	2
Molybdenum	0.12		0.0010	0.00040	mg/L		11/02/20 09:46	11/11/20 22:57	2
Selenium	ND	E8	0.0020	0.00030	mg/L		11/02/20 09:46	11/30/20 13:57	4
Thallium	0.00019	E4	0.00020	0.000026	mg/L		11/02/20 09:46	11/11/20 22:57	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		10/29/20 16:00	10/29/20 19:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	11000	D2	200	200	mg/L			10/28/20 09:27	1
pH	7.3	H5	1.7	1.7	SU			10/30/20 12:30	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-M51-1020

Lab Sample ID: 550-151754-6

Date Collected: 10/25/20 09:40

Matrix: Water

Date Received: 10/26/20 14:25

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Temperature	15.4	H5	0.1	0.1	Degrees C			10/30/20 12:30	1
Ammonia	ND	E8	0.50	0.28	mg/L			11/07/20 17:47	1
Total Organic Carbon	1.5		0.50	0.26	mg/L			10/27/20 22:50	1
Total Organic Carbon - Duplicates	1.5		0.50	0.26	mg/L			10/27/20 22:50	1
Total Organic Carbon - Quad	1.5		0.50	0.26	mg/L			10/27/20 22:50	1

Client Sample ID: CH-CCR-M51-1020

Lab Sample ID: 550-151754-7

Date Collected: 10/25/20 09:40

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND	E8	0.10	0.010	mg/L		10/28/20 09:33	11/04/20 00:35	1
Manganese	0.97		0.010	0.00019	mg/L		10/28/20 09:33	11/06/20 00:19	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.027	B3 B7 D1	0.0010	0.00049	mg/L		10/27/20 06:24	11/09/20 21:00	2
Cobalt	0.0012	D1	0.0010	0.00013	mg/L		10/27/20 06:24	11/09/20 21:00	2

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.6	M2	0.50	0.26	mg/L			11/03/20 16:35	1
Dissolved Organic Carbon - Duplicate	1.6	M2	0.50	0.26	mg/L			11/03/20 16:35	1
Dissolved Organic Carbon - Quad	1.6	M2	0.50	0.26	mg/L			11/03/20 16:35	1

Client Sample ID: CH-CCR-M64-1020

Lab Sample ID: 550-151754-8

Date Collected: 10/24/20 11:45

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4500	D2	400	100	mg/L			10/28/20 01:54	200
Fluoride	0.28	D1 E4	0.80	0.095	mg/L			10/28/20 01:35	2
Nitrate Nitrite as N	ND	D1 D5 E8	0.25	0.11	mg/L			10/26/20 22:49	5
Sulfate	4400	D2	400	85	mg/L			10/28/20 01:54	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		10/28/20 10:12	11/03/20 14:33	1
Lithium	0.31		0.020	0.0091	mg/L		11/16/20 15:50	11/17/20 18:30	1
Boron	1.2		0.050	0.0025	mg/L		10/28/20 10:12	11/03/20 14:33	1
Calcium	480		2.0	0.013	mg/L		10/28/20 10:12	11/03/20 14:33	1
Iron	5.5		0.10	0.010	mg/L		10/28/20 10:12	11/03/20 14:33	1
Manganese	2.0		0.010	0.00019	mg/L		10/28/20 10:12	11/03/20 14:33	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00010	E4	0.0020	0.000087	mg/L		11/02/20 09:46	11/11/20 22:59	2
Arsenic	0.0036	D1	0.0020	0.00099	mg/L		11/02/20 09:46	11/30/20 15:09	4
Barium	0.012	D1	0.0010	0.00052	mg/L		11/02/20 09:46	11/20/20 16:26	2

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-M64-1020

Lab Sample ID: 550-151754-8

Date Collected: 10/24/20 11:45

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND	E8	0.00020	0.000046	mg/L		11/02/20 09:46	11/11/20 22:59	2
Chromium	ND	E8	0.0020	0.00087	mg/L		11/02/20 09:46	11/11/20 22:59	2
Cobalt	0.00025	D1 E4	0.0010	0.00013	mg/L		11/02/20 09:46	11/20/20 16:26	2
Lead	0.0010		0.0010	0.00044	mg/L		11/02/20 09:46	11/11/20 22:59	2
Molybdenum	0.0051		0.0010	0.00040	mg/L		11/02/20 09:46	11/11/20 22:59	2
Selenium	0.0044		0.0020	0.00030	mg/L		11/02/20 09:46	11/30/20 13:59	4
Thallium	ND	E8	0.00020	0.000026	mg/L		11/02/20 09:46	11/11/20 22:59	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		10/28/20 18:28	10/29/20 17:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	12000	D2	200	200	mg/L			10/28/20 09:27	1
pH	7.3	H5	1.7	1.7	SU			10/30/20 12:30	1
Temperature	15.7	H5	0.1	0.1	Degrees C			10/30/20 12:30	1
Ammonia	0.77		0.50	0.28	mg/L			11/07/20 17:58	1
Total Organic Carbon	4.5		0.50	0.26	mg/L			10/27/20 23:02	1
Total Organic Carbon - Duplicates	4.5		0.50	0.26	mg/L			10/27/20 23:02	1
Total Organic Carbon - Quad	4.5		0.50	0.26	mg/L			10/27/20 23:02	1

Client Sample ID: CH-CCR-M64-1020

Lab Sample ID: 550-151754-9

Date Collected: 10/24/20 11:45

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	5.5		0.10	0.010	mg/L		10/28/20 09:33	11/04/20 00:39	1
Manganese	2.2		0.010	0.00019	mg/L		10/28/20 09:33	11/06/20 00:23	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0018	D1 E4	0.0020	0.00099	mg/L		10/27/20 06:24	11/20/20 11:28	4
Cobalt	ND	D1 E8	0.0020	0.00025	mg/L		10/27/20 06:24	11/20/20 11:28	4

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	4.8		0.50	0.26	mg/L			10/27/20 12:01	1
Dissolved Organic Carbon - Duplicate	4.8		0.50	0.26	mg/L			10/27/20 12:01	1
Dissolved Organic Carbon - Quad	4.8		0.50	0.26	mg/L			10/27/20 12:01	1

Client Sample ID: CH-CCR-M65-1020

Lab Sample ID: 550-151754-10

Date Collected: 10/25/20 14:12

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4200	D2	400	100	mg/L			10/28/20 02:31	200
Fluoride	2.6	D1	0.80	0.095	mg/L			10/28/20 02:12	2
Nitrate Nitrite as N	ND	D1 D5 E8	0.25	0.11	mg/L			10/26/20 23:44	5

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-M65-1020

Lab Sample ID: 550-151754-10

Date Collected: 10/25/20 14:12

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	3200	D2	400	85	mg/L			10/28/20 02:31	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		10/28/20 10:12	11/03/20 14:37	1
Lithium	0.57		0.020	0.0091	mg/L		11/16/20 15:50	11/18/20 12:46	1
Boron	13		0.050	0.0025	mg/L		10/28/20 10:12	11/03/20 14:37	1
Calcium	780		2.0	0.013	mg/L		10/28/20 10:12	11/03/20 14:37	1
Iron	1.2		0.10	0.010	mg/L		10/28/20 10:12	11/03/20 14:37	1
Manganese	0.30		0.010	0.00019	mg/L		10/28/20 10:12	11/03/20 14:37	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.000096	E4	0.0020	0.000087	mg/L		11/02/20 09:46	11/11/20 23:01	2
Arsenic	0.0064	D1	0.0020	0.00099	mg/L		11/02/20 09:46	11/30/20 15:12	4
Barium	0.024	D1	0.0010	0.00052	mg/L		11/02/20 09:46	11/20/20 16:28	2
Cadmium	ND	E8	0.00020	0.000046	mg/L		11/02/20 09:46	11/11/20 23:01	2
Chromium	0.019		0.0020	0.00087	mg/L		11/02/20 09:46	11/11/20 23:01	2
Cobalt	0.0039	D1	0.0010	0.00013	mg/L		11/02/20 09:46	11/20/20 16:28	2
Lead	ND	E8	0.0010	0.00044	mg/L		11/02/20 09:46	11/11/20 23:01	2
Molybdenum	0.22		0.0010	0.00040	mg/L		11/02/20 09:46	11/11/20 23:01	2
Selenium	0.0049		0.0020	0.00030	mg/L		11/02/20 09:46	11/30/20 14:01	4
Thallium	0.000042	E4	0.00020	0.000026	mg/L		11/02/20 09:46	11/11/20 23:01	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		10/29/20 16:00	10/29/20 19:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10000	D2	100	100	mg/L			10/28/20 09:27	1
pH	7.0	H5	1.7	1.7	SU			10/30/20 12:30	1
Temperature	15.8	H5	0.1	0.1	Degrees C			10/30/20 12:30	1
Ammonia	ND	E8	0.50	0.28	mg/L			11/07/20 18:05	1
Total Organic Carbon	3.2		0.50	0.26	mg/L			10/27/20 23:13	1
Total Organic Carbon - Duplicates	3.2		0.50	0.26	mg/L			10/27/20 23:13	1
Total Organic Carbon - Quad	3.2		0.50	0.26	mg/L			10/27/20 23:13	1

Client Sample ID: CH-CCR-M65-1020

Lab Sample ID: 550-151754-11

Date Collected: 10/25/20 14:12

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.84		0.10	0.010	mg/L		10/28/20 09:33	11/04/20 00:43	1
Manganese	0.33		0.010	0.00019	mg/L		10/28/20 09:33	11/06/20 00:26	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0049	D1	0.0020	0.00099	mg/L		10/27/20 06:24	11/20/20 11:30	4
Cobalt	0.0032	D1	0.0010	0.00013	mg/L		10/27/20 06:24	11/09/20 21:04	2

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-M65-1020

Lab Sample ID: 550-151754-11

Date Collected: 10/25/20 14:12

Matrix: Water

Date Received: 10/26/20 14:25

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	2.7		0.50	0.26	mg/L			11/03/20 17:11	1
Dissolved Organic Carbon - Duplicate	2.7		0.50	0.26	mg/L			11/03/20 17:11	1
Dissolved Organic Carbon - Quad	2.7		0.50	0.26	mg/L			11/03/20 17:11	1

Client Sample ID: CH-CCR-M66-1020

Lab Sample ID: 550-151754-12

Date Collected: 10/25/20 12:45

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4400	D2	400	100	mg/L			10/28/20 03:44	200
Fluoride	1.4	D1	0.80	0.095	mg/L			10/28/20 03:26	2
Nitrate Nitrite as N	ND	D1 D5 E8	0.25	0.11	mg/L			10/27/20 00:11	5
Sulfate	3000	D2	400	85	mg/L			10/28/20 03:44	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		10/28/20 10:12	11/03/20 14:40	1
Lithium	0.49		0.020	0.0091	mg/L		11/16/20 15:50	11/18/20 12:50	1
Boron	1.5		0.050	0.0025	mg/L		10/28/20 10:12	11/03/20 14:40	1
Calcium	750		2.0	0.013	mg/L		10/28/20 10:12	11/03/20 14:40	1
Iron	0.27		0.10	0.010	mg/L		10/28/20 10:12	11/03/20 14:40	1
Manganese	3.8		0.010	0.00019	mg/L		10/28/20 10:12	11/03/20 14:40	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00010	E4	0.0020	0.000087	mg/L		11/02/20 09:46	11/11/20 23:03	2
Arsenic	0.0019	D1 E4	0.0020	0.00099	mg/L		11/02/20 09:46	11/30/20 15:14	4
Barium	0.013	D1	0.0010	0.00052	mg/L		11/02/20 09:46	11/20/20 16:30	2
Cadmium	0.00048		0.00020	0.000046	mg/L		11/02/20 09:46	11/11/20 23:03	2
Chromium	0.024		0.0020	0.00087	mg/L		11/02/20 09:46	11/11/20 23:03	2
Cobalt	0.0018	D1	0.0010	0.00013	mg/L		11/02/20 09:46	11/20/20 16:30	2
Lead	ND	E8	0.0010	0.00044	mg/L		11/02/20 09:46	11/11/20 23:03	2
Molybdenum	0.017		0.0010	0.00040	mg/L		11/02/20 09:46	11/11/20 23:03	2
Selenium	0.024		0.0020	0.00030	mg/L		11/02/20 09:46	11/30/20 14:04	4
Thallium	0.00013	E4	0.00020	0.000026	mg/L		11/02/20 09:46	11/11/20 23:03	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		10/29/20 16:00	10/29/20 19:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	10000	D2	100	100	mg/L			10/28/20 09:27	1
pH	7.1	H5	1.7	1.7	SU			10/30/20 12:30	1
Temperature	16.2	H5	0.1	0.1	Degrees C			10/30/20 12:30	1
Ammonia	ND	E8	0.50	0.28	mg/L			11/07/20 18:11	1
Total Organic Carbon	2.3		0.50	0.26	mg/L			10/27/20 23:26	1
Total Organic Carbon - Duplicates	2.3		0.50	0.26	mg/L			10/27/20 23:26	1
Total Organic Carbon - Quad	2.3		0.50	0.26	mg/L			10/27/20 23:26	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-M66-1020

Lab Sample ID: 550-151754-13

Date Collected: 10/25/20 12:45

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.25		0.10	0.010	mg/L		10/28/20 09:33	11/04/20 00:47	1
Manganese	4.1		0.010	0.00019	mg/L		10/28/20 09:33	11/06/20 00:30	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0051	D1	0.0020	0.00099	mg/L		10/27/20 06:24	11/20/20 11:32	4
Cobalt	0.0018	D1 E4	0.0020	0.00025	mg/L		10/27/20 06:24	11/20/20 11:32	4

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	2.3		0.50	0.26	mg/L			10/27/20 12:26	1
Dissolved Organic Carbon - Duplicate	2.3		0.50	0.26	mg/L			10/27/20 12:26	1
Dissolved Organic Carbon - Quad	2.3		0.50	0.26	mg/L			10/27/20 12:26	1

Client Sample ID: CH-CCR-M67-1020

Lab Sample ID: 550-151754-14

Date Collected: 10/25/20 16:21

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5500	D2	400	100	mg/L			10/28/20 04:21	200
Fluoride	0.47	D1 E4	0.80	0.095	mg/L			10/28/20 04:03	2
Nitrate Nitrite as N	ND	D1 D5 E8	0.25	0.11	mg/L			10/27/20 01:33	5
Sulfate	1500	D2	400	85	mg/L			10/28/20 04:21	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		10/28/20 10:12	11/03/20 14:44	1
Lithium	0.18		0.020	0.0091	mg/L		11/16/20 15:50	11/18/20 12:53	1
Boron	0.33		0.050	0.0025	mg/L		10/28/20 10:12	11/03/20 14:44	1
Calcium	1600		2.0	0.013	mg/L		10/28/20 10:12	11/03/20 14:44	1
Iron	8.2		0.10	0.010	mg/L		10/28/20 10:12	11/03/20 14:44	1
Manganese	4.7		0.010	0.00019	mg/L		10/28/20 10:12	11/03/20 14:44	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00014	E4	0.0020	0.000087	mg/L		11/02/20 09:46	11/12/20 21:57	2
Arsenic	0.018	D1	0.0020	0.00099	mg/L		11/02/20 09:46	11/30/20 14:38	4
Barium	0.024	D1	0.0010	0.00052	mg/L		11/02/20 09:46	11/20/20 16:36	2
Cadmium	ND	E8	0.00020	0.000046	mg/L		11/02/20 09:46	11/12/20 21:57	2
Chromium	ND	E8	0.0020	0.00087	mg/L		11/02/20 09:46	11/12/20 21:57	2
Cobalt	0.0040		0.0010	0.00013	mg/L		11/02/20 09:46	11/12/20 21:57	2
Lead	ND	E8	0.0010	0.00044	mg/L		11/02/20 09:46	11/12/20 21:57	2
Molybdenum	0.0047		0.0010	0.00040	mg/L		11/02/20 09:46	11/12/20 21:57	2
Selenium	0.00069	E4	0.0010	0.00015	mg/L		11/02/20 09:46	11/12/20 21:57	2
Thallium	0.000066	E4	0.00020	0.000026	mg/L		11/02/20 09:46	11/12/20 21:57	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		10/29/20 16:00	10/29/20 19:47	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-M67-1020

Lab Sample ID: 550-151754-14

Date Collected: 10/25/20 16:21

Matrix: Water

Date Received: 10/26/20 14:25

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	12000	D2	100	100	mg/L			10/28/20 09:27	1
pH	7.5	H5	1.7	1.7	SU			10/30/20 12:30	1
Temperature	16.0	H5	0.1	0.1	Degrees C			10/30/20 12:30	1
Ammonia	1.4		0.50	0.28	mg/L			11/07/20 18:22	1
Total Organic Carbon	2.1		0.50	0.26	mg/L			10/27/20 23:37	1
Total Organic Carbon - Duplicates	2.1		0.50	0.26	mg/L			10/27/20 23:37	1
Total Organic Carbon - Quad	2.1		0.50	0.26	mg/L			10/27/20 23:37	1

Client Sample ID: CH-CCR-M67-1020

Lab Sample ID: 550-151754-15

Date Collected: 10/25/20 16:21

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	8.0		0.10	0.010	mg/L		10/28/20 09:33	11/04/20 00:50	1
Manganese	5.1		0.010	0.00019	mg/L		10/28/20 09:33	11/06/20 00:34	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.020	D1	0.0020	0.00099	mg/L		10/27/20 06:24	11/20/20 11:34	4
Cobalt	0.0059	D1	0.0020	0.00025	mg/L		10/27/20 06:24	11/20/20 11:34	4

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	2.2		0.50	0.26	mg/L			10/27/20 12:37	1
Dissolved Organic Carbon - Duplicate	2.2		0.50	0.26	mg/L			10/27/20 12:37	1
Dissolved Organic Carbon - Quad	2.2		0.50	0.26	mg/L			10/27/20 12:37	1

Client Sample ID: CH-CCR-W123-1020

Lab Sample ID: 550-151754-16

Date Collected: 10/26/20 08:38

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6400	D2	400	100	mg/L			10/28/20 04:58	200
Fluoride	3.6	D1	0.80	0.095	mg/L			10/28/20 04:39	2
Nitrate Nitrite as N	0.79	D1	0.25	0.11	mg/L			10/27/20 02:01	5
Sulfate	3800	D2	400	85	mg/L			10/28/20 04:58	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		10/28/20 10:12	11/03/20 14:48	1
Lithium	0.62		0.020	0.0091	mg/L		11/16/20 15:50	11/18/20 12:56	1
Boron	37		0.050	0.0025	mg/L		10/28/20 10:12	11/03/20 14:48	1
Calcium	860		2.0	0.013	mg/L		10/28/20 10:12	11/03/20 14:48	1
Iron	0.30		0.10	0.010	mg/L		10/28/20 10:12	11/03/20 14:48	1
Manganese	0.12		0.010	0.00019	mg/L		10/28/20 10:12	11/03/20 14:48	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0042	D1	0.0040	0.00017	mg/L		11/02/20 09:46	11/20/20 16:38	4

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-W123-1020

Lab Sample ID: 550-151754-16

Date Collected: 10/26/20 08:38

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0056	D1	0.0020	0.00099	mg/L		11/02/20 09:46	11/30/20 14:40	4
Barium	0.021	D1	0.0020	0.0010	mg/L		11/02/20 09:46	11/20/20 16:38	4
Cadmium	0.00024	D1 E4	0.00040	0.000092	mg/L		11/02/20 09:46	11/20/20 16:38	4
Chromium	0.037	D1	0.0040	0.0017	mg/L		11/02/20 09:46	11/20/20 16:38	4
Cobalt	0.0043	D1	0.0020	0.00025	mg/L		11/02/20 09:46	11/20/20 16:38	4
Lead	0.0015	D1 E4	0.0020	0.00088	mg/L		11/02/20 09:46	11/20/20 16:38	4
Molybdenum	0.66	D1	0.0020	0.00081	mg/L		11/02/20 09:46	11/20/20 16:38	4
Selenium	0.0081	D1	0.0020	0.00030	mg/L		11/02/20 09:46	11/30/20 14:40	4
Thallium	0.00039	D1 E4	0.00040	0.000053	mg/L		11/02/20 09:46	11/20/20 16:38	4

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		10/29/20 16:00	10/29/20 19:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	14000	D2	200	200	mg/L			10/29/20 09:10	1
pH	6.8	H5	1.7	1.7	SU			10/30/20 12:30	1
Temperature	16.3	H5	0.1	0.1	Degrees C			10/30/20 12:30	1
Ammonia	ND	E8	0.50	0.28	mg/L			11/07/20 18:29	1
Total Organic Carbon	1.5		0.50	0.26	mg/L			10/28/20 14:25	1
Total Organic Carbon - Duplicates	1.5		0.50	0.26	mg/L			10/28/20 14:25	1
Total Organic Carbon - Quad	1.5		0.50	0.26	mg/L			10/28/20 14:25	1

Client Sample ID: CH-CCR-W123-1020

Lab Sample ID: 550-151754-17

Date Collected: 10/26/20 08:38

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.075	E4	0.10	0.010	mg/L		10/28/20 09:33	11/04/20 00:54	1
Manganese	0.022		0.010	0.00019	mg/L		10/28/20 09:33	11/06/20 00:38	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0038	D1	0.0020	0.00099	mg/L		10/27/20 06:24	11/20/20 11:37	4
Cobalt	0.0021	D1	0.0020	0.00025	mg/L		10/27/20 06:24	11/20/20 11:37	4

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.7		0.50	0.26	mg/L			10/27/20 12:49	1
Dissolved Organic Carbon - Duplicate	1.7		0.50	0.26	mg/L			10/27/20 12:49	1
Dissolved Organic Carbon - Quad	1.7		0.50	0.26	mg/L			10/27/20 12:49	1

Client Sample ID: CH-CCR-W125-1020

Lab Sample ID: 550-151754-18

Date Collected: 10/24/20 15:16

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3000	D2	400	100	mg/L			10/28/20 05:35	200

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-W125-1020

Lab Sample ID: 550-151754-18

Date Collected: 10/24/20 15:16

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.53	D1 E4	0.80	0.095	mg/L			10/28/20 05:16	2
Sulfate	1200	D2	400	85	mg/L			10/28/20 05:35	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.00013	E4 V1	0.0010	0.000067	mg/L		10/28/20 10:12	11/12/20 23:10	1
Lithium	0.029		0.020	0.0091	mg/L		11/16/20 15:50	11/18/20 13:00	1
Boron	0.16		0.050	0.0025	mg/L		10/28/20 10:12	11/03/20 14:59	1
Calcium	120		2.0	0.013	mg/L		10/28/20 10:12	11/03/20 14:59	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	E8	0.0020	0.000087	mg/L		11/02/20 09:46	11/12/20 22:01	2
Arsenic	0.0073	D1	0.0020	0.00099	mg/L		11/02/20 09:46	11/30/20 14:42	4
Barium	0.022	D1	0.0010	0.00052	mg/L		11/02/20 09:46	11/20/20 16:41	2
Cadmium	ND	E8	0.00020	0.000046	mg/L		11/02/20 09:46	11/12/20 22:01	2
Chromium	ND	E8	0.0020	0.00087	mg/L		11/02/20 09:46	11/12/20 22:01	2
Cobalt	0.0012		0.0010	0.00013	mg/L		11/02/20 09:46	11/12/20 22:01	2
Lead	ND	E8	0.0010	0.00044	mg/L		11/02/20 09:46	11/12/20 22:01	2
Molybdenum	0.0026		0.0010	0.00040	mg/L		11/02/20 09:46	11/12/20 22:01	2
Selenium	0.00065	E4	0.0010	0.00015	mg/L		11/02/20 09:46	11/12/20 22:01	2
Thallium	ND	E8	0.00020	0.000026	mg/L		11/02/20 09:46	11/12/20 22:01	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		10/28/20 18:28	10/29/20 17:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	1800		20	20	mg/L			10/28/20 09:27	1
pH	7.5	H5	1.7	1.7	SU			11/02/20 18:00	1
Temperature	7.9	H5	0.1	0.1	Degrees C			11/02/20 18:00	1

Client Sample ID: CH-CCR-W126-1020

Lab Sample ID: 550-151754-19

Date Collected: 10/25/20 11:34

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6900	D2	400	100	mg/L			10/28/20 06:11	200
Fluoride	4.2	D1	0.80	0.095	mg/L			10/28/20 05:53	2
Nitrate Nitrite as N	ND	D1 D5 E8	0.25	0.11	mg/L			10/27/20 02:28	5
Sulfate	4500	D2	400	85	mg/L			10/28/20 06:11	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		10/28/20 10:12	11/03/20 15:03	1
Lithium	0.74		0.020	0.0091	mg/L		11/16/20 15:50	11/18/20 13:03	1
Boron	43		0.050	0.0025	mg/L		10/28/20 10:12	11/03/20 15:03	1
Calcium	720		2.0	0.013	mg/L		10/28/20 10:12	11/03/20 15:03	1
Iron	0.064	E4	0.10	0.010	mg/L		10/28/20 10:12	11/03/20 15:03	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-W126-1020

Lab Sample ID: 550-151754-19

Date Collected: 10/25/20 11:34

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	0.29		0.010	0.00019	mg/L		10/28/20 10:12	11/03/20 15:03	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00036	E4	0.0040	0.00017	mg/L		11/02/20 09:46	11/11/20 22:50	4
Arsenic	0.0020		0.0020	0.00099	mg/L		11/02/20 09:46	11/30/20 13:47	4
Barium	0.018	D1 M1	0.0020	0.0010	mg/L		11/02/20 09:46	11/20/20 16:17	4
Cadmium	ND	E8	0.00040	0.000092	mg/L		11/02/20 09:46	11/11/20 22:50	4
Chromium	0.011		0.0040	0.0017	mg/L		11/02/20 09:46	11/11/20 22:50	4
Cobalt	0.0083	D1 M1	0.0020	0.00025	mg/L		11/02/20 09:46	11/20/20 16:17	4
Lead	ND	E8	0.0020	0.00088	mg/L		11/02/20 09:46	11/11/20 22:50	4
Molybdenum	0.22		0.0020	0.00081	mg/L		11/02/20 09:46	11/11/20 22:50	4
Selenium	0.0049		0.0020	0.00030	mg/L		11/02/20 09:46	11/30/20 13:47	4
Thallium	0.00026	E4	0.00040	0.000053	mg/L		11/02/20 09:46	11/11/20 22:50	4

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		10/29/20 16:00	10/29/20 19:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	15000	D2	200	200	mg/L			10/28/20 09:27	1
pH	7.5	H5	1.7	1.7	SU			11/02/20 18:00	1
Temperature	7.3	H5	0.1	0.1	Degrees C			11/02/20 18:00	1
Ammonia	ND	E8	0.50	0.28	mg/L			11/07/20 18:40	1
Total Organic Carbon	1.9		0.50	0.26	mg/L			10/28/20 00:00	1
Total Organic Carbon - Duplicates	1.9		0.50	0.26	mg/L			10/28/20 00:00	1
Total Organic Carbon - Quad	1.9		0.50	0.26	mg/L			10/28/20 00:00	1

Client Sample ID: CH-CCR-W126-1020

Lab Sample ID: 550-151754-20

Date Collected: 10/25/20 11:34

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.048	E4	0.10	0.010	mg/L		10/28/20 10:47	11/04/20 01:02	1
Manganese	0.30		0.010	0.00019	mg/L		10/28/20 10:47	11/06/20 00:45	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0032	D1	0.0020	0.00099	mg/L		10/27/20 06:24	11/20/20 11:39	4
Cobalt	0.0041	D1	0.0020	0.00025	mg/L		10/27/20 06:24	11/20/20 11:39	4

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.9		0.50	0.26	mg/L			10/27/20 13:01	1
Dissolved Organic Carbon - Duplicate	1.9		0.50	0.26	mg/L			10/27/20 13:01	1
Dissolved Organic Carbon - Quad	1.9		0.50	0.26	mg/L			10/27/20 13:01	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-FD05-1020

Lab Sample ID: 550-151754-21

Date Collected: 10/25/20 09:40

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4900	D2 M1	400	100	mg/L			10/28/20 18:26	200
Fluoride	6.0	D1	0.80	0.095	mg/L			10/28/20 17:31	2
Nitrate Nitrite as N	ND	D1 D5 E8	0.25	0.11	mg/L			10/27/20 03:23	5
Sulfate	2800	D2	400	85	mg/L			10/28/20 18:26	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		10/28/20 10:12	11/03/20 15:07	1
Lithium	0.47		0.020	0.0091	mg/L		11/16/20 15:50	11/18/20 13:06	1
Boron	30		0.050	0.0025	mg/L		10/28/20 10:12	11/03/20 15:07	1
Calcium	850		2.0	0.013	mg/L		10/28/20 10:12	11/03/20 15:07	1
Iron	0.022	E4	0.10	0.010	mg/L		10/28/20 10:12	11/03/20 15:07	1
Manganese	0.95		0.010	0.00019	mg/L		10/28/20 10:12	11/03/20 15:07	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00011	E4	0.0020	0.000087	mg/L		11/02/20 09:46	11/12/20 22:03	2
Arsenic	0.027	D1	0.0020	0.00099	mg/L		11/02/20 09:46	11/30/20 14:44	4
Barium	0.0086	D1	0.0010	0.00052	mg/L		11/02/20 09:46	11/20/20 16:43	2
Cadmium	0.00013	E4	0.00020	0.000046	mg/L		11/02/20 09:46	11/12/20 22:03	2
Chromium	0.0073		0.0020	0.00087	mg/L		11/02/20 09:46	11/12/20 22:03	2
Cobalt	0.0012		0.0010	0.00013	mg/L		11/02/20 09:46	11/12/20 22:03	2
Lead	ND	E8	0.0010	0.00044	mg/L		11/02/20 09:46	11/12/20 22:03	2
Molybdenum	0.12		0.0010	0.00040	mg/L		11/02/20 09:46	11/12/20 22:03	2
Selenium	ND	E8	0.0010	0.00015	mg/L		11/02/20 09:46	11/12/20 22:03	2
Thallium	0.00019	E4	0.00020	0.000026	mg/L		11/02/20 09:46	11/12/20 22:03	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		10/29/20 16:00	10/29/20 19:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	11000	D2	200	200	mg/L			10/29/20 09:10	1
pH	7.3	H5	1.7	1.7	SU			11/02/20 18:00	1
Temperature	7.7	H5	0.1	0.1	Degrees C			11/02/20 18:00	1
Ammonia	0.36	E4	0.50	0.28	mg/L			11/09/20 18:32	1
Total Organic Carbon	1.5		0.50	0.26	mg/L			10/28/20 00:11	1
Total Organic Carbon - Duplicates	1.5		0.50	0.26	mg/L			10/28/20 00:11	1
Total Organic Carbon - Quad	1.5		0.50	0.26	mg/L			10/28/20 00:11	1

Client Sample ID: CH-CCR-FD05-1020

Lab Sample ID: 550-151754-22

Date Collected: 10/25/20 09:40

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.024	E4	0.10	0.010	mg/L		10/28/20 09:33	11/04/20 00:58	1
Manganese	1.0		0.010	0.00019	mg/L		10/28/20 09:33	11/06/20 00:42	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-FD05-1020

Lab Sample ID: 550-151754-22

Date Collected: 10/25/20 09:40

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.025	B3 B7 D1	0.0010	0.00049	mg/L		10/27/20 06:24	11/09/20 21:15	2
Cobalt	0.0011	D1	0.0010	0.00013	mg/L		10/27/20 06:24	11/09/20 21:15	2

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.6		0.50	0.26	mg/L			10/27/20 13:12	1
Dissolved Organic Carbon - Duplicate	1.6		0.50	0.26	mg/L			10/27/20 13:12	1
Dissolved Organic Carbon - Quad	1.6		0.50	0.26	mg/L			10/27/20 13:12	1

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-223790/2

Matrix: Water

Analysis Batch: 223790

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	ND	E8	0.050	0.021	mg/L			10/26/20 11:16	1

Lab Sample ID: LCS 550-223790/5

Matrix: Water

Analysis Batch: 223790

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	8.00	8.50		mg/L		106	90 - 110

Lab Sample ID: LCSD 550-223790/6

Matrix: Water

Analysis Batch: 223790

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate Nitrite as N	8.00	8.47		mg/L		106	90 - 110	0	20

Lab Sample ID: 550-150590-E-1 MS ^5

Matrix: Water

Analysis Batch: 223790

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	ND	E8 D1 D5	40.0	43.9	D1	mg/L		110	80 - 120

Lab Sample ID: 550-150590-E-1 MSD ^5

Matrix: Water

Analysis Batch: 223790

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate Nitrite as N	ND	E8 D1 D5	40.0	41.5	D1	mg/L		104	80 - 120	6	20

Lab Sample ID: MB 550-223927/2

Matrix: Water

Analysis Batch: 223927

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND	E8	2.0	0.52	mg/L			10/27/20 12:38	1
Fluoride	ND	E8	0.40	0.047	mg/L			10/27/20 12:38	1
Sulfate	ND	E8	2.0	0.43	mg/L			10/27/20 12:38	1

Lab Sample ID: LCS 550-223927/5

Matrix: Water

Analysis Batch: 223927

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	21.9		mg/L		110	90 - 110
Fluoride	4.00	4.18		mg/L		105	90 - 110
Sulfate	20.0	21.2		mg/L		106	90 - 110

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 550-223927/6

Matrix: Water

Analysis Batch: 223927

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	22.0		mg/L		110	90 - 110	0	20
Fluoride	4.00	4.19		mg/L		105	90 - 110	0	20
Sulfate	20.0	21.1		mg/L		106	90 - 110	0	20

Lab Sample ID: 550-151757-C-5 MS ^2

Matrix: Water

Analysis Batch: 223927

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	1.5	M1 D1	8.00	11.4	D1 M1	mg/L		124	80 - 120		

Lab Sample ID: 550-151757-C-5 MS ^200

Matrix: Water

Analysis Batch: 223927

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	1200	D2	4000	6010	D2	mg/L		120	80 - 120		
Sulfate	320	E4 D1	4000	4690	D2	mg/L		109	80 - 120		

Lab Sample ID: 550-151757-C-5 MSD ^2

Matrix: Water

Analysis Batch: 223927

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	1.5	M1 D1	8.00	10.5	D1	mg/L		113	80 - 120	8	20

Lab Sample ID: 550-151757-C-5 MSD ^200

Matrix: Water

Analysis Batch: 223927

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	1200	D2	4000	5990	D2	mg/L		119	80 - 120	0	20
Sulfate	320	E4 D1	4000	4660	D2	mg/L		108	80 - 120	1	20

Lab Sample ID: 550-151757-C-5 DU ^2

Matrix: Water

Analysis Batch: 223927

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	1.5	M1 D1	1.43	D1	mg/L		2	20

Lab Sample ID: 550-151757-C-5 DU ^200

Matrix: Water

Analysis Batch: 223927

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	1200	D2	1320	D2	mg/L		7	20
Sulfate	320	E4 D1	343	D1 E4	mg/L		6	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 550-224067/2

Matrix: Water

Analysis Batch: 224067

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND	E8	2.0	0.52	mg/L			10/28/20 14:45	1
Fluoride	ND	E8	0.40	0.047	mg/L			10/28/20 14:45	1
Sulfate	ND	E8	2.0	0.43	mg/L			10/28/20 14:45	1

Lab Sample ID: LCS 550-224067/5

Matrix: Water

Analysis Batch: 224067

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	21.4		mg/L		107	90 - 110
Fluoride	4.00	4.08		mg/L		102	90 - 110
Sulfate	20.0	20.6		mg/L		103	90 - 110

Lab Sample ID: LCSD 550-224067/6

Matrix: Water

Analysis Batch: 224067

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	21.5		mg/L		107	90 - 110	0	20
Fluoride	4.00	4.07		mg/L		102	90 - 110	0	20
Sulfate	20.0	20.6		mg/L		103	90 - 110	0	20

Lab Sample ID: 550-151754-21 MS

Matrix: Water

Analysis Batch: 224067

Client Sample ID: CH-CCR-FD05-1020

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	6.0	D1	8.00	14.2	D1	mg/L		103	80 - 120

Lab Sample ID: 550-151754-21 MS

Matrix: Water

Analysis Batch: 224067

Client Sample ID: CH-CCR-FD05-1020

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	4900	M1 D2	4000	9730	D2	mg/L		120	80 - 120
Sulfate	2800	D2	4000	7310	D2	mg/L		114	80 - 120

Lab Sample ID: 550-151754-21 MSD

Matrix: Water

Analysis Batch: 224067

Client Sample ID: CH-CCR-FD05-1020

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	6.0	D1	8.00	14.2	D1	mg/L		103	80 - 120	0	20

Lab Sample ID: 550-151754-21 MSD

Matrix: Water

Analysis Batch: 224067

Client Sample ID: CH-CCR-FD05-1020

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	4900	M1 D2	4000	9820	D2 M1	mg/L		122	80 - 120	1	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-151754-21 MSD

Matrix: Water

Analysis Batch: 224067

Client Sample ID: CH-CCR-FD05-1020

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	2800	D2	4000	7360	D2	mg/L		115	80 - 120	1	20

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 550-223987/1-A

Matrix: Water

Analysis Batch: 224596

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 223987

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND	E8	0.10	0.010	mg/L		10/28/20 09:33	11/04/20 00:09	1

Lab Sample ID: MB 550-223987/1-A

Matrix: Water

Analysis Batch: 224875

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 223987

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND	E8	0.010	0.00019	mg/L		10/28/20 09:33	11/05/20 23:53	1

Lab Sample ID: LCS 550-223987/2-A

Matrix: Water

Analysis Batch: 224596

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 223987

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	1.00	0.908		mg/L		91	85 - 115

Lab Sample ID: LCS 550-223987/2-A

Matrix: Water

Analysis Batch: 224875

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 223987

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Manganese	1.00	1.07		mg/L		107	85 - 115

Lab Sample ID: LCSD 550-223987/3-A

Matrix: Water

Analysis Batch: 224596

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 223987

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	1.00	0.924		mg/L		92	85 - 115	2	20

Lab Sample ID: LCSD 550-223987/3-A

Matrix: Water

Analysis Batch: 224875

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 223987

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Manganese	1.00	1.08		mg/L		108	85 - 115	1	20

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: MB 550-223992/1-A

Matrix: Water

Analysis Batch: 224589

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 223992

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.000740	E4	0.0010	0.000067	mg/L		10/28/20 10:12	11/03/20 13:59	1
Boron	0.00509	E4	0.050	0.0025	mg/L		10/28/20 10:12	11/03/20 13:59	1
Calcium	0.0263	E4	2.0	0.013	mg/L		10/28/20 10:12	11/03/20 13:59	1
Iron	ND	E8	0.10	0.010	mg/L		10/28/20 10:12	11/03/20 13:59	1
Manganese	0.000420	E4	0.010	0.00019	mg/L		10/28/20 10:12	11/03/20 13:59	1

Lab Sample ID: MB 550-223992/1-A

Matrix: Water

Analysis Batch: 225525

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 223992

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.000150	E4 V1	0.0010	0.000067	mg/L		10/28/20 10:12	11/12/20 22:44	1

Lab Sample ID: LCS 550-223992/2-A

Matrix: Water

Analysis Batch: 224589

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 223992

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	1.00	0.946		mg/L		95	85 - 115
Boron	1.00	0.970		mg/L		97	85 - 115
Calcium	21.0	19.9		mg/L		95	85 - 115
Iron	1.00	0.891		mg/L		89	85 - 115
Manganese	1.00	0.954		mg/L		95	85 - 115

Lab Sample ID: LCS 550-223992/2-A

Matrix: Water

Analysis Batch: 225525

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 223992

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	1.00	1.11	V1	mg/L		111	85 - 115

Lab Sample ID: LCSD 550-223992/3-A

Matrix: Water

Analysis Batch: 224589

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 223992

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Beryllium	1.00	0.892		mg/L		89	85 - 115	6	20
Boron	1.00	0.974		mg/L		97	85 - 115	0	20
Calcium	21.0	19.5		mg/L		93	85 - 115	2	20
Iron	1.00	0.845		mg/L		85	85 - 115	5	20
Manganese	1.00	0.927		mg/L		93	85 - 115	3	20

Lab Sample ID: LCSD 550-223992/3-A

Matrix: Water

Analysis Batch: 225525

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 223992

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Beryllium	1.00	1.08	V1	mg/L		108	85 - 115	2	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 550-151754-2 MS

Matrix: Water

Analysis Batch: 224589

Client Sample ID: CH-CCR-M46-1020

Prep Type: Total/NA

Prep Batch: 223992

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	ND	E8	1.00	1.03		mg/L		103	70 - 130
Boron	0.58		1.00	1.63		mg/L		105	70 - 130
Calcium	1300	M3	21.0	1230	M3	mg/L		-314	70 - 130
Iron	1.1		1.00	2.05		mg/L		95	70 - 130
Manganese	3.3		1.00	4.13		mg/L		86	70 - 130

Lab Sample ID: 550-151754-2 MS

Matrix: Water

Analysis Batch: 225525

Client Sample ID: CH-CCR-M46-1020

Prep Type: Total/NA

Prep Batch: 223992

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	ND	E8 V1	1.00	1.30	V1	mg/L		130	70 - 130

Lab Sample ID: 550-151754-2 MSD

Matrix: Water

Analysis Batch: 224589

Client Sample ID: CH-CCR-M46-1020

Prep Type: Total/NA

Prep Batch: 223992

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Beryllium	ND	E8	1.00	1.02		mg/L		102	70 - 130	1	20
Boron	0.58		1.00	1.57		mg/L		99	70 - 130	3	20
Calcium	1300	M3	21.0	1230	M3	mg/L		-292	70 - 130	0	20
Iron	1.1		1.00	2.04		mg/L		93	70 - 130	1	20
Manganese	3.3		1.00	4.03		mg/L		76	70 - 130	3	20

Lab Sample ID: 550-151754-2 MSD

Matrix: Water

Analysis Batch: 225525

Client Sample ID: CH-CCR-M46-1020

Prep Type: Total/NA

Prep Batch: 223992

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Beryllium	ND	E8 V1	1.00	1.26	V1	mg/L		126	70 - 130	3	20

Lab Sample ID: MB 280-516839/1-A

Matrix: Water

Analysis Batch: 517127

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 516839

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND	E8	0.020	0.0091	mg/L		11/16/20 15:50	11/17/20 18:09	1

Lab Sample ID: LCS 280-516839/2-A

Matrix: Water

Analysis Batch: 517127

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 516839

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	1.12		mg/L		112	90 - 112

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 550-151756-C-3-C MS

Matrix: Water

Analysis Batch: 517283

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 516839

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lithium	0.070		1.00	1.09		mg/L		102	70 - 130		

Lab Sample ID: 550-151756-C-3-D MSD

Matrix: Water

Analysis Batch: 517283

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 516839

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Lithium	0.070		1.00	1.12		mg/L		105	70 - 130	3	20

Lab Sample ID: 550-151756-C-5-E MS

Matrix: Water

Analysis Batch: 517283

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 516839

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lithium	0.097		1.00	1.11		mg/L		101	70 - 130		

Lab Sample ID: 550-151756-C-5-F MSD

Matrix: Water

Analysis Batch: 517283

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 516839

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Lithium	0.097		1.00	1.10		mg/L		100	70 - 130	0	20

Lab Sample ID: 550-151754-5 MS

Matrix: Water

Analysis Batch: 224596

Client Sample ID: CH-CCR-M50-1020

Prep Type: Dissolved

Prep Batch: 223987

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Iron	0.21		1.00	1.23		mg/L		101	70 - 130		

Lab Sample ID: 550-151754-5 MS

Matrix: Water

Analysis Batch: 224875

Client Sample ID: CH-CCR-M50-1020

Prep Type: Dissolved

Prep Batch: 223987

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Manganese	0.22		1.00	1.28		mg/L		106	70 - 130		

Lab Sample ID: 550-151754-5 MSD

Matrix: Water

Analysis Batch: 224596

Client Sample ID: CH-CCR-M50-1020

Prep Type: Dissolved

Prep Batch: 223987

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Iron	0.21		1.00	1.24		mg/L		102	70 - 130	1	20

Lab Sample ID: 550-151754-5 MSD

Matrix: Water

Analysis Batch: 224875

Client Sample ID: CH-CCR-M50-1020

Prep Type: Dissolved

Prep Batch: 223987

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Manganese	0.22		1.00	1.26		mg/L		104	70 - 130	1	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Method: 200.8 LL - Metals (ICP/MS)

Lab Sample ID: MB 550-223797/1-A

Matrix: Water

Analysis Batch: 225098

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 223797

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.000513	B1	0.00050	0.00025	mg/L		10/27/20 06:24	11/09/20 20:45	1
Cobalt	ND	E8	0.00050	0.000063	mg/L		10/27/20 06:24	11/09/20 20:45	1

Lab Sample ID: MB 550-223797/1-A

Matrix: Water

Analysis Batch: 226162

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 223797

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	0.00050	0.00025	mg/L		10/27/20 06:24	11/20/20 11:11	1
Cobalt	ND	E8	0.00050	0.000063	mg/L		10/27/20 06:24	11/20/20 11:11	1

Lab Sample ID: LCS 550-223797/2-A

Matrix: Water

Analysis Batch: 225098

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 223797

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.0992		mg/L		99	85 - 115
Cobalt	0.100	0.0923		mg/L		92	85 - 115

Lab Sample ID: LCS 550-223797/2-A

Matrix: Water

Analysis Batch: 226162

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 223797

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.0984		mg/L		98	85 - 115
Cobalt	0.100	0.0978		mg/L		98	85 - 115

Lab Sample ID: LCSD 550-223797/3-A

Matrix: Water

Analysis Batch: 225098

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 223797

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.100	0.110		mg/L		110	85 - 115	10	20
Cobalt	0.100	0.100		mg/L		100	85 - 115	8	20

Lab Sample ID: LCSD 550-223797/3-A

Matrix: Water

Analysis Batch: 226162

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 223797

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.100	0.0975		mg/L		98	85 - 115	1	20
Cobalt	0.100	0.0971		mg/L		97	85 - 115	1	20

Lab Sample ID: MB 550-224429/1-A

Matrix: Water

Analysis Batch: 225325

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 224429

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0000800	E4	0.0010	0.000043	mg/L		11/02/20 09:46	11/11/20 22:40	1
Cadmium	ND	E8	0.00010	0.000023	mg/L		11/02/20 09:46	11/11/20 22:40	1

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 550-224429/1-A

Matrix: Water

Analysis Batch: 225325

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 224429

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND	E8	0.0010	0.00043	mg/L		11/02/20 09:46	11/11/20 22:40	1
Lead	ND	E8	0.00050	0.00022	mg/L		11/02/20 09:46	11/11/20 22:40	1
Molybdenum	ND	E8	0.00050	0.00020	mg/L		11/02/20 09:46	11/11/20 22:40	1
Thallium	0.0000160	E4	0.00010	0.000013	mg/L		11/02/20 09:46	11/11/20 22:40	1

Lab Sample ID: MB 550-224429/1-A

Matrix: Water

Analysis Batch: 226261

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 224429

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND	E8	0.00050	0.00026	mg/L		11/02/20 09:46	11/20/20 16:07	1
Cobalt	ND	E8	0.00050	0.000063	mg/L		11/02/20 09:46	11/20/20 16:07	1

Lab Sample ID: MB 550-224429/1-A

Matrix: Water

Analysis Batch: 226827

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 224429

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.000373	E4	0.00050	0.00025	mg/L		11/02/20 09:46	11/30/20 13:36	1
Selenium	0.000460	E4	0.00050	0.000074	mg/L		11/02/20 09:46	11/30/20 13:36	1

Lab Sample ID: LCS 550-224429/2-A

Matrix: Water

Analysis Batch: 225325

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 224429

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.100	0.102		mg/L		102	85 - 115
Cadmium	0.100	0.100		mg/L		100	85 - 115
Chromium	0.100	0.101		mg/L		101	85 - 115
Lead	0.100	0.104		mg/L		104	85 - 115
Molybdenum	0.100	0.104		mg/L		104	85 - 115
Thallium	0.100	0.101		mg/L		101	85 - 115

Lab Sample ID: LCS 550-224429/2-A

Matrix: Water

Analysis Batch: 226261

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 224429

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	0.100	0.112		mg/L		112	85 - 115
Cobalt	0.100	0.0986		mg/L		99	85 - 115

Lab Sample ID: LCS 550-224429/2-A

Matrix: Water

Analysis Batch: 226827

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 224429

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.104		mg/L		104	85 - 115
Selenium	0.100	0.107		mg/L		107	85 - 115

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 550-224429/3-A

Matrix: Water

Analysis Batch: 225325

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 224429

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.100	0.101		mg/L		101	85 - 115	0	20
Cadmium	0.100	0.102		mg/L		102	85 - 115	1	20
Chromium	0.100	0.102		mg/L		102	85 - 115	1	20
Lead	0.100	0.101		mg/L		101	85 - 115	2	20
Molybdenum	0.100	0.102		mg/L		102	85 - 115	2	20
Thallium	0.100	0.0995		mg/L		100	85 - 115	2	20

Lab Sample ID: LCSD 550-224429/3-A

Matrix: Water

Analysis Batch: 226261

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 224429

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Barium	0.100	0.113		mg/L		113	85 - 115	1	20
Cobalt	0.100	0.0981		mg/L		98	85 - 115	1	20

Lab Sample ID: LCSD 550-224429/3-A

Matrix: Water

Analysis Batch: 226827

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 224429

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.100	0.105		mg/L		105	85 - 115	1	20
Selenium	0.100	0.108		mg/L		108	85 - 115	1	20

Lab Sample ID: 550-151754-19 MS

Matrix: Water

Analysis Batch: 225325

Client Sample ID: CH-CCR-W126-1020

Prep Type: Total/NA

Prep Batch: 224429

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.00036	E4	0.100	0.105		mg/L		105	70 - 130
Cadmium	ND	E8	0.100	0.0955		mg/L		95	70 - 130
Chromium	0.011		0.100	0.110		mg/L		100	70 - 130
Lead	ND	E8	0.100	0.0975		mg/L		98	70 - 130
Molybdenum	0.22		0.100	0.327		mg/L		111	70 - 130
Thallium	0.00026	E4	0.100	0.0966		mg/L		96	70 - 130

Lab Sample ID: 550-151754-19 MS

Matrix: Water

Analysis Batch: 226261

Client Sample ID: CH-CCR-W126-1020

Prep Type: Total/NA

Prep Batch: 224429

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	0.018	M1 D1	0.100	0.248	M1	mg/L		230	70 - 130
Cobalt	0.0083	M1 D1	0.100	0.197	M1	mg/L		189	70 - 130

Lab Sample ID: 550-151754-19 MS

Matrix: Water

Analysis Batch: 226827

Client Sample ID: CH-CCR-W126-1020

Prep Type: Total/NA

Prep Batch: 224429

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.0020		0.100	0.110		mg/L		108	70 - 130
Selenium	0.0049		0.100	0.118		mg/L		113	70 - 130

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Method: 200.8 LL - Metals (ICP/MS)

Lab Sample ID: 550-151754-19 MSD

Matrix: Water

Analysis Batch: 225325

Client Sample ID: CH-CCR-W126-1020

Prep Type: Total/NA

Prep Batch: 224429

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.00036	E4	0.100	0.104		mg/L		104	70 - 130	1	20
Cadmium	ND	E8	0.100	0.0928		mg/L		93	70 - 130	3	20
Chromium	0.011		0.100	0.113		mg/L		103	70 - 130	3	20
Lead	ND	E8	0.100	0.0949		mg/L		95	70 - 130	3	20
Molybdenum	0.22		0.100	0.325		mg/L		109	70 - 130	1	20
Thallium	0.00026	E4	0.100	0.0945		mg/L		94	70 - 130	2	20

Lab Sample ID: 550-151754-19 MSD

Matrix: Water

Analysis Batch: 226261

Client Sample ID: CH-CCR-W126-1020

Prep Type: Total/NA

Prep Batch: 224429

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Barium	0.018	M1 D1	0.100	0.251	M1	mg/L		233	70 - 130	1	20
Cobalt	0.0083	M1 D1	0.100	0.197	M1	mg/L		189	70 - 130	0	20

Lab Sample ID: 550-151754-19 MSD

Matrix: Water

Analysis Batch: 226827

Client Sample ID: CH-CCR-W126-1020

Prep Type: Total/NA

Prep Batch: 224429

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.0020		0.100	0.112		mg/L		110	70 - 130	2	20
Selenium	0.0049		0.100	0.118		mg/L		113	70 - 130	0	20

Lab Sample ID: 550-151754-3 MS

Matrix: Water

Analysis Batch: 226162

Client Sample ID: CH-CCR-M46-1020

Prep Type: Dissolved

Prep Batch: 223797

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.0039	D1	0.100	0.115		mg/L		111	70 - 130		
Cobalt	0.0016	E4 D1	0.100	0.105		mg/L		104	70 - 130		

Lab Sample ID: 550-151754-3 MSD

Matrix: Water

Analysis Batch: 226162

Client Sample ID: CH-CCR-M46-1020

Prep Type: Dissolved

Prep Batch: 223797

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.0039	D1	0.100	0.123		mg/L		119	70 - 130	7	20
Cobalt	0.0016	E4 D1	0.100	0.113		mg/L		111	70 - 130	7	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 550-224052/1-A

Matrix: Water

Analysis Batch: 224200

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 224052

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		10/28/20 18:28	10/29/20 17:26	1

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Method: 245.1 - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 550-224052/2-A
Matrix: Water
Analysis Batch: 224200

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 224052

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Hg	0.00500	0.00498		mg/L		100	85 - 115

Lab Sample ID: LCSD 550-224052/3-A
Matrix: Water
Analysis Batch: 224200

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 224052

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Hg	0.00500	0.00508		mg/L		102	85 - 115	2	20

Lab Sample ID: 550-151754-8 MS
Matrix: Water
Analysis Batch: 224200

Client Sample ID: CH-CCR-M64-1020
Prep Type: Total/NA
Prep Batch: 224052

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Hg	ND	E8	0.00500	0.00486		mg/L		97	70 - 130

Lab Sample ID: 550-151754-8 MSD
Matrix: Water
Analysis Batch: 224200

Client Sample ID: CH-CCR-M64-1020
Prep Type: Total/NA
Prep Batch: 224052

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Hg	ND	E8	0.00500	0.00487		mg/L		97	70 - 130	0	20

Lab Sample ID: MB 550-224184/1-A
Matrix: Water
Analysis Batch: 224213

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 224184

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND	E8	0.00020	0.000060	mg/L		10/29/20 16:00	10/29/20 19:34	1

Lab Sample ID: LCS 550-224184/2-A
Matrix: Water
Analysis Batch: 224213

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 224184

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Hg	0.00500	0.00487		mg/L		97	85 - 115

Lab Sample ID: LCSD 550-224184/3-A
Matrix: Water
Analysis Batch: 224213

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 224184

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Hg	0.00500	0.00481		mg/L		96	85 - 115	1	20

Lab Sample ID: 550-151754-4 MS
Matrix: Water
Analysis Batch: 224213

Client Sample ID: CH-CCR-M50-1020
Prep Type: Total/NA
Prep Batch: 224184

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Hg	ND	E8	0.00500	0.00416		mg/L		83	70 - 130

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: 550-151754-4 MSD
Matrix: Water
Analysis Batch: 224213

Client Sample ID: CH-CCR-M50-1020
Prep Type: Total/NA
Prep Batch: 224184

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hg	ND	E8	0.00500	0.00420		mg/L		84	70 - 130	1	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 550-223980/1
Matrix: Water
Analysis Batch: 223980

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND	E8	20	20	mg/L			10/28/20 09:27	1

Lab Sample ID: LCS 550-223980/2
Matrix: Water
Analysis Batch: 223980

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	960		mg/L		96	90 - 110

Lab Sample ID: LCSD 550-223980/3
Matrix: Water
Analysis Batch: 223980

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	1000	954		mg/L		95	90 - 110	1	10

Lab Sample ID: 550-151758-E-5 DU
Matrix: Water
Analysis Batch: 223980

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	11000	D2	10700	D2	mg/L		0.2	10

Lab Sample ID: 550-151796-A-1 DU
Matrix: Water
Analysis Batch: 223980

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	1300		1250		mg/L		2	10

Lab Sample ID: MB 550-224114/1
Matrix: Water
Analysis Batch: 224114

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND	E8	20	20	mg/L			10/29/20 09:10	1

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 550-224114/2

Matrix: Water

Analysis Batch: 224114

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	954		mg/L		95	90 - 110

Lab Sample ID: LCSD 550-224114/3

Matrix: Water

Analysis Batch: 224114

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	1000	946		mg/L		95	90 - 110	1	10

Lab Sample ID: 550-151879-A-1 DU

Matrix: Water

Analysis Batch: 224114

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	240		236		mg/L				2	10

Method: SM 4500 H+ B - pH

Lab Sample ID: LCSSRM 550-224312/25

Matrix: Water

Analysis Batch: 224312

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		99.9	98.5 - 101.5

Lab Sample ID: LCSSRM 550-224312/37

Matrix: Water

Analysis Batch: 224312

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	6.9		SU		99.1	98.5 - 101.5

Lab Sample ID: 550-151754-1 DU

Matrix: Water

Analysis Batch: 224312

Client Sample ID: CH-CCR-M44D-1020

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
pH	7.1	H5	7.0	H5	SU				0.7	5
Temperature	14.2	H5	14.9	H5	Degrees C				5	

Lab Sample ID: LCSSRM 550-224480/1

Matrix: Water

Analysis Batch: 224480

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100.3	98.5 - 101.5

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Method: SM 4500 H+ B - pH (Continued)

Lab Sample ID: LCSSRM 550-224480/13

Matrix: Water

Analysis Batch: 224480

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.1		SU		101.3	98.5 - 101.5

Lab Sample ID: 550-151754-18 DU

Matrix: Water

Analysis Batch: 224480

Client Sample ID: CH-CCR-W125-1020

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.5	H5	7.5	H5	SU		0.3	5
Temperature	7.9	H5	7.3	H5	Degrees C		8	

Method: SM 4500 NH3 D - Ammonia

Lab Sample ID: MB 550-224972/33

Matrix: Water

Analysis Batch: 224972

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND	E8	0.50	0.28	mg/L			11/07/20 16:42	1

Lab Sample ID: LCS 550-224972/34

Matrix: Water

Analysis Batch: 224972

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	25.0	24.4		mg/L		98	80 - 120

Lab Sample ID: LCSD 550-224972/35

Matrix: Water

Analysis Batch: 224972

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	25.0	23.9		mg/L		95	80 - 120	2	20

Lab Sample ID: 550-151868-B-3 MS

Matrix: Water

Analysis Batch: 224972

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	0.36	E4	25.0	22.4		mg/L		88	80 - 120

Lab Sample ID: 550-151868-B-3 MSD

Matrix: Water

Analysis Batch: 224972

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	0.36	E4	25.0	22.0		mg/L		86	80 - 120	2	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Method: SM 4500 NH3 D - Ammonia (Continued)

Lab Sample ID: MB 550-225209/4

Matrix: Water

Analysis Batch: 225209

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND	E8	0.50	0.28	mg/L			11/09/20 18:07	1

Lab Sample ID: LCS 550-225209/5

Matrix: Water

Analysis Batch: 225209

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	25.0	26.0		mg/L		104	80 - 120

Lab Sample ID: LCSD 550-225209/6

Matrix: Water

Analysis Batch: 225209

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	25.0	27.2		mg/L		109	80 - 120	5	20

Lab Sample ID: 550-152195-E-1 MS

Matrix: Water

Analysis Batch: 225209

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	0.59		25.0	25.8		mg/L		101	80 - 120

Lab Sample ID: 550-152195-E-1 MSD

Matrix: Water

Analysis Batch: 225209

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	0.59		25.0	25.6		mg/L		100	80 - 120	1	20

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 550-223939/48

Matrix: Water

Analysis Batch: 223939

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND	E8	0.50	0.26	mg/L			10/27/20 19:05	1
Total Organic Carbon - Duplicates	ND	E8	0.50	0.26	mg/L			10/27/20 19:05	1
Total Organic Carbon - Quad	ND	E8	0.50	0.26	mg/L			10/27/20 19:05	1

Lab Sample ID: LCS 550-223939/49

Matrix: Water

Analysis Batch: 223939

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	20.0	18.3		mg/L		91	90 - 110
Total Organic Carbon - Duplicates	20.0	18.3		mg/L		91	90 - 110
Total Organic Carbon - Quad	20.0	18.3		mg/L		91	90 - 110

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Method: SM 5310B - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCSD 550-223939/50

Matrix: Water

Analysis Batch: 223939

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	20.0	19.3		mg/L		96	90 - 110	5	20
Total Organic Carbon - Duplicates	20.0	19.3		mg/L		96	90 - 110	5	20
Total Organic Carbon - Quad	20.0	19.3		mg/L		96	90 - 110	5	20

Lab Sample ID: 550-151750-A-1 MS ^10

Matrix: Water

Analysis Batch: 223939

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	7.7	D1	200	208	D1	mg/L		100	90 - 110		
Total Organic Carbon - Duplicates	7.7	D1	200	208	D1	mg/L		100	90 - 110		
Total Organic Carbon - Quad	7.7	D1	200	208	D1	mg/L		100	90 - 110		

Lab Sample ID: 550-151750-A-1 MSD ^10

Matrix: Water

Analysis Batch: 223939

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	7.7	D1	200	203	D1	mg/L		98	90 - 110	2	20
Total Organic Carbon - Duplicates	7.7	D1	200	203	D1	mg/L		98	90 - 110	2	20
Total Organic Carbon - Quad	7.7	D1	200	203	D1	mg/L		98	90 - 110	2	20

Lab Sample ID: MB 550-224082/17

Matrix: Water

Analysis Batch: 224082

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND	E8	0.50	0.26	mg/L			10/28/20 12:39	1
Total Organic Carbon - Duplicates	ND	E8	0.50	0.26	mg/L			10/28/20 12:39	1
Total Organic Carbon - Quad	ND	E8	0.50	0.26	mg/L			10/28/20 12:39	1

Lab Sample ID: LCS 550-224082/18

Matrix: Water

Analysis Batch: 224082

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	20.0	18.4		mg/L		92	90 - 110		
Total Organic Carbon - Duplicates	20.0	18.4		mg/L		92	90 - 110		
Total Organic Carbon - Quad	20.0	18.4		mg/L		92	90 - 110		

Lab Sample ID: LCSD 550-224082/19

Matrix: Water

Analysis Batch: 224082

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	20.0	19.4		mg/L		97	90 - 110	5	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Method: SM 5310B - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCSD 550-224082/19

Matrix: Water

Analysis Batch: 224082

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	20.0	19.4		mg/L		97	90 - 110	5	20
Total Organic Carbon - Quad	20.0	19.4		mg/L		97	90 - 110	5	20

Lab Sample ID: 550-151831-A-1 MS ^10

Matrix: Water

Analysis Batch: 224082

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	6.9		200	200		mg/L		96	90 - 110		
Total Organic Carbon - Duplicates	6.9		200	200		mg/L		96	90 - 110		
Total Organic Carbon - Quad	6.9		200	200		mg/L		96	90 - 110		

Lab Sample ID: 550-151831-A-1 MSD ^10

Matrix: Water

Analysis Batch: 224082

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	6.9		200	201		mg/L		97	90 - 110	1	20
Total Organic Carbon - Duplicates	6.9		200	201		mg/L		97	90 - 110	1	20
Total Organic Carbon - Quad	6.9		200	201		mg/L		97	90 - 110	1	20

Method: SM 5310B - Organic Carbon, Dissolved (DOC)

Lab Sample ID: MB 550-223938/5

Matrix: Water

Analysis Batch: 223938

Client Sample ID: Method Blank

Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	ND	E8	0.50	0.26	mg/L			10/27/20 10:30	1
Dissolved Organic Carbon - Duplicate	ND	E8	0.50	0.26	mg/L			10/27/20 10:30	1
Dissolved Organic Carbon - Quad	ND	E8	0.50	0.26	mg/L			10/27/20 10:30	1

Lab Sample ID: LCS 550-223938/6

Matrix: Water

Analysis Batch: 223938

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	20.0	21.1		mg/L		105	90 - 110		
Dissolved Organic Carbon - Duplicate	20.0	21.1		mg/L		105	90 - 110		
Dissolved Organic Carbon - Quad	20.0	21.1		mg/L		105	90 - 110		

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Method: SM 5310B - Organic Carbon, Dissolved (DOC) (Continued)

Lab Sample ID: LCSD 550-223938/7

Matrix: Water

Analysis Batch: 223938

Client Sample ID: Lab Control Sample Dup

Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	20.0	18.7		mg/L		93	90 - 110	12	20
Dissolved Organic Carbon - Duplicate	20.0	18.7		mg/L		93	90 - 110	12	20
Dissolved Organic Carbon - Quad	20.0	18.7		mg/L		93	90 - 110	12	20

Lab Sample ID: 550-151754-3 MS

Matrix: Water

Analysis Batch: 223938

Client Sample ID: CH-CCR-M46-1020

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	3.1	M2	20.0	17.2	M2	mg/L		70	90 - 110		
Dissolved Organic Carbon - Duplicate	3.1	M2	20.0	17.2	M2	mg/L		70	90 - 110		
Dissolved Organic Carbon - Quad	3.1	M2	20.0	17.2	M2	mg/L		70	90 - 110		

Lab Sample ID: 550-151754-3 MSD

Matrix: Water

Analysis Batch: 223938

Client Sample ID: CH-CCR-M46-1020

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	3.1	M2	20.0	20.2	M2	mg/L		85	90 - 110	16	20
Dissolved Organic Carbon - Duplicate	3.1	M2	20.0	20.2	M2	mg/L		85	90 - 110	16	20
Dissolved Organic Carbon - Quad	3.1	M2	20.0	20.2	M2	mg/L		85	90 - 110	16	20

Lab Sample ID: MB 550-224644/5

Matrix: Water

Analysis Batch: 224644

Client Sample ID: Method Blank

Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	ND	E8	0.50	0.26	mg/L			11/03/20 16:02	1
Dissolved Organic Carbon - Duplicate	ND	E8	0.50	0.26	mg/L			11/03/20 16:02	1
Dissolved Organic Carbon - Quad	ND	E8	0.50	0.26	mg/L			11/03/20 16:02	1

Lab Sample ID: LCS 550-224644/6

Matrix: Water

Analysis Batch: 224644

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	20.0	19.7		mg/L		98	90 - 110		
Dissolved Organic Carbon - Duplicate	20.0	19.7		mg/L		98	90 - 110		
Dissolved Organic Carbon - Quad	20.0	19.7		mg/L		98	90 - 110		

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Method: SM 5310B - Organic Carbon, Dissolved (DOC) (Continued)

Lab Sample ID: LCSD 550-224644/7

Matrix: Water

Analysis Batch: 224644

Client Sample ID: Lab Control Sample Dup

Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	20.0	21.6		mg/L		108	90 - 110	9	20
Dissolved Organic Carbon - Duplicate	20.0	21.6		mg/L		108	90 - 110	9	20
Dissolved Organic Carbon - Quad	20.0	21.6		mg/L		108	90 - 110	9	20

Lab Sample ID: 550-151754-7 MS

Matrix: Water

Analysis Batch: 224644

Client Sample ID: CH-CCR-M51-1020

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	1.6	M2	20.0	19.8		mg/L		91	90 - 110		
Dissolved Organic Carbon - Duplicate	1.6	M2	20.0	19.8		mg/L		91	90 - 110		
Dissolved Organic Carbon - Quad	1.6	M2	20.0	19.8		mg/L		91	90 - 110		

Lab Sample ID: 550-151754-7 MSD

Matrix: Water

Analysis Batch: 224644

Client Sample ID: CH-CCR-M51-1020

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	1.6	M2	20.0	19.5	M2	mg/L		89	90 - 110	1	20
Dissolved Organic Carbon - Duplicate	1.6	M2	20.0	19.5	M2	mg/L		89	90 - 110	1	20
Dissolved Organic Carbon - Quad	1.6	M2	20.0	19.5	M2	mg/L		89	90 - 110	1	20

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

HPLC/IC

Analysis Batch: 223790

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-2	CH-CCR-M46-1020	Total/NA	Water	300.0	
550-151754-4	CH-CCR-M50-1020	Total/NA	Water	300.0	
550-151754-6	CH-CCR-M51-1020	Total/NA	Water	300.0	
550-151754-8	CH-CCR-M64-1020	Total/NA	Water	300.0	
550-151754-10	CH-CCR-M65-1020	Total/NA	Water	300.0	
550-151754-12	CH-CCR-M66-1020	Total/NA	Water	300.0	
550-151754-14	CH-CCR-M67-1020	Total/NA	Water	300.0	
550-151754-16	CH-CCR-W123-1020	Total/NA	Water	300.0	
550-151754-19	CH-CCR-W126-1020	Total/NA	Water	300.0	
550-151754-21	CH-CCR-FD05-1020	Total/NA	Water	300.0	
MB 550-223790/2	Method Blank	Total/NA	Water	300.0	
LCS 550-223790/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-223790/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-150590-E-1 MS ^5	Matrix Spike	Total/NA	Water	300.0	
550-150590-E-1 MSD ^5	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 223927

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-1	CH-CCR-M44D-1020	Total/NA	Water	300.0	
550-151754-1	CH-CCR-M44D-1020	Total/NA	Water	300.0	
550-151754-2	CH-CCR-M46-1020	Total/NA	Water	300.0	
550-151754-2	CH-CCR-M46-1020	Total/NA	Water	300.0	
550-151754-4	CH-CCR-M50-1020	Total/NA	Water	300.0	
550-151754-4	CH-CCR-M50-1020	Total/NA	Water	300.0	
550-151754-6	CH-CCR-M51-1020	Total/NA	Water	300.0	
550-151754-6	CH-CCR-M51-1020	Total/NA	Water	300.0	
550-151754-8	CH-CCR-M64-1020	Total/NA	Water	300.0	
550-151754-8	CH-CCR-M64-1020	Total/NA	Water	300.0	
550-151754-10	CH-CCR-M65-1020	Total/NA	Water	300.0	
550-151754-10	CH-CCR-M65-1020	Total/NA	Water	300.0	
550-151754-12	CH-CCR-M66-1020	Total/NA	Water	300.0	
550-151754-12	CH-CCR-M66-1020	Total/NA	Water	300.0	
550-151754-14	CH-CCR-M67-1020	Total/NA	Water	300.0	
550-151754-14	CH-CCR-M67-1020	Total/NA	Water	300.0	
550-151754-16	CH-CCR-W123-1020	Total/NA	Water	300.0	
550-151754-16	CH-CCR-W123-1020	Total/NA	Water	300.0	
550-151754-18	CH-CCR-W125-1020	Total/NA	Water	300.0	
550-151754-18	CH-CCR-W125-1020	Total/NA	Water	300.0	
550-151754-19	CH-CCR-W126-1020	Total/NA	Water	300.0	
550-151754-19	CH-CCR-W126-1020	Total/NA	Water	300.0	
MB 550-223927/2	Method Blank	Total/NA	Water	300.0	
LCS 550-223927/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-223927/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-151757-C-5 MS ^2	Matrix Spike	Total/NA	Water	300.0	
550-151757-C-5 MS ^200	Matrix Spike	Total/NA	Water	300.0	
550-151757-C-5 MSD ^2	Matrix Spike Duplicate	Total/NA	Water	300.0	
550-151757-C-5 MSD ^200	Matrix Spike Duplicate	Total/NA	Water	300.0	
550-151757-C-5 DU ^2	Duplicate	Total/NA	Water	300.0	
550-151757-C-5 DU ^200	Duplicate	Total/NA	Water	300.0	

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

HPLC/IC

Analysis Batch: 224067

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-21	CH-CCR-FD05-1020	Total/NA	Water	300.0	
550-151754-21	CH-CCR-FD05-1020	Total/NA	Water	300.0	
MB 550-224067/2	Method Blank	Total/NA	Water	300.0	
LCS 550-224067/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-224067/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-151754-21 MS	CH-CCR-FD05-1020	Total/NA	Water	300.0	
550-151754-21 MS	CH-CCR-FD05-1020	Total/NA	Water	300.0	
550-151754-21 MSD	CH-CCR-FD05-1020	Total/NA	Water	300.0	
550-151754-21 MSD	CH-CCR-FD05-1020	Total/NA	Water	300.0	

Metals

Prep Batch: 223797

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-3	CH-CCR-M46-1020	Dissolved	Water	200.8	
550-151754-5	CH-CCR-M50-1020	Dissolved	Water	200.8	
550-151754-7	CH-CCR-M51-1020	Dissolved	Water	200.8	
550-151754-9	CH-CCR-M64-1020	Dissolved	Water	200.8	
550-151754-11	CH-CCR-M65-1020	Dissolved	Water	200.8	
550-151754-13	CH-CCR-M66-1020	Dissolved	Water	200.8	
550-151754-15	CH-CCR-M67-1020	Dissolved	Water	200.8	
550-151754-17	CH-CCR-W123-1020	Dissolved	Water	200.8	
550-151754-20	CH-CCR-W126-1020	Dissolved	Water	200.8	
550-151754-22	CH-CCR-FD05-1020	Dissolved	Water	200.8	
MB 550-223797/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-223797/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-223797/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-151754-3 MS	CH-CCR-M46-1020	Dissolved	Water	200.8	
550-151754-3 MSD	CH-CCR-M46-1020	Dissolved	Water	200.8	

Prep Batch: 223987

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-3	CH-CCR-M46-1020	Dissolved	Water	200.7	
550-151754-5	CH-CCR-M50-1020	Dissolved	Water	200.7	
550-151754-7	CH-CCR-M51-1020	Dissolved	Water	200.7	
550-151754-9	CH-CCR-M64-1020	Dissolved	Water	200.7	
550-151754-11	CH-CCR-M65-1020	Dissolved	Water	200.7	
550-151754-13	CH-CCR-M66-1020	Dissolved	Water	200.7	
550-151754-15	CH-CCR-M67-1020	Dissolved	Water	200.7	
550-151754-17	CH-CCR-W123-1020	Dissolved	Water	200.7	
550-151754-20	CH-CCR-W126-1020	Dissolved	Water	200.7	
550-151754-22	CH-CCR-FD05-1020	Dissolved	Water	200.7	
MB 550-223987/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-223987/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-223987/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-151754-5 MS	CH-CCR-M50-1020	Dissolved	Water	200.7	
550-151754-5 MSD	CH-CCR-M50-1020	Dissolved	Water	200.7	

Prep Batch: 223992

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-1	CH-CCR-M44D-1020	Total/NA	Water	200.7	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Metals (Continued)

Prep Batch: 223992 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-2	CH-CCR-M46-1020	Total/NA	Water	200.7	
550-151754-4	CH-CCR-M50-1020	Total/NA	Water	200.7	
550-151754-6	CH-CCR-M51-1020	Total/NA	Water	200.7	
550-151754-8	CH-CCR-M64-1020	Total/NA	Water	200.7	
550-151754-10	CH-CCR-M65-1020	Total/NA	Water	200.7	
550-151754-12	CH-CCR-M66-1020	Total/NA	Water	200.7	
550-151754-14	CH-CCR-M67-1020	Total/NA	Water	200.7	
550-151754-16	CH-CCR-W123-1020	Total/NA	Water	200.7	
550-151754-18	CH-CCR-W125-1020	Total/NA	Water	200.7	
550-151754-19	CH-CCR-W126-1020	Total/NA	Water	200.7	
550-151754-21	CH-CCR-FD05-1020	Total/NA	Water	200.7	
MB 550-223992/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-223992/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-223992/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-151754-2 MS	CH-CCR-M46-1020	Total/NA	Water	200.7	
550-151754-2 MSD	CH-CCR-M46-1020	Total/NA	Water	200.7	

Prep Batch: 224052

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-1	CH-CCR-M44D-1020	Total/NA	Water	245.1	
550-151754-2	CH-CCR-M46-1020	Total/NA	Water	245.1	
550-151754-8	CH-CCR-M64-1020	Total/NA	Water	245.1	
550-151754-18	CH-CCR-W125-1020	Total/NA	Water	245.1	
MB 550-224052/1-A	Method Blank	Total/NA	Water	245.1	
LCS 550-224052/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 550-224052/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	
550-151754-8 MS	CH-CCR-M64-1020	Total/NA	Water	245.1	
550-151754-8 MSD	CH-CCR-M64-1020	Total/NA	Water	245.1	

Prep Batch: 224184

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-4	CH-CCR-M50-1020	Total/NA	Water	245.1	
550-151754-6	CH-CCR-M51-1020	Total/NA	Water	245.1	
550-151754-10	CH-CCR-M65-1020	Total/NA	Water	245.1	
550-151754-12	CH-CCR-M66-1020	Total/NA	Water	245.1	
550-151754-14	CH-CCR-M67-1020	Total/NA	Water	245.1	
550-151754-16	CH-CCR-W123-1020	Total/NA	Water	245.1	
550-151754-19	CH-CCR-W126-1020	Total/NA	Water	245.1	
550-151754-21	CH-CCR-FD05-1020	Total/NA	Water	245.1	
MB 550-224184/1-A	Method Blank	Total/NA	Water	245.1	
LCS 550-224184/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 550-224184/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	
550-151754-4 MS	CH-CCR-M50-1020	Total/NA	Water	245.1	
550-151754-4 MSD	CH-CCR-M50-1020	Total/NA	Water	245.1	

Analysis Batch: 224200

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-1	CH-CCR-M44D-1020	Total/NA	Water	245.1	224052
550-151754-2	CH-CCR-M46-1020	Total/NA	Water	245.1	224052
550-151754-8	CH-CCR-M64-1020	Total/NA	Water	245.1	224052
550-151754-18	CH-CCR-W125-1020	Total/NA	Water	245.1	224052

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Metals (Continued)

Analysis Batch: 224200 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 550-224052/1-A	Method Blank	Total/NA	Water	245.1	224052
LCS 550-224052/2-A	Lab Control Sample	Total/NA	Water	245.1	224052
LCSD 550-224052/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	224052
550-151754-8 MS	CH-CCR-M64-1020	Total/NA	Water	245.1	224052
550-151754-8 MSD	CH-CCR-M64-1020	Total/NA	Water	245.1	224052

Analysis Batch: 224213

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-4	CH-CCR-M50-1020	Total/NA	Water	245.1	224184
550-151754-6	CH-CCR-M51-1020	Total/NA	Water	245.1	224184
550-151754-10	CH-CCR-M65-1020	Total/NA	Water	245.1	224184
550-151754-12	CH-CCR-M66-1020	Total/NA	Water	245.1	224184
550-151754-14	CH-CCR-M67-1020	Total/NA	Water	245.1	224184
550-151754-16	CH-CCR-W123-1020	Total/NA	Water	245.1	224184
550-151754-19	CH-CCR-W126-1020	Total/NA	Water	245.1	224184
550-151754-21	CH-CCR-FD05-1020	Total/NA	Water	245.1	224184
MB 550-224184/1-A	Method Blank	Total/NA	Water	245.1	224184
LCS 550-224184/2-A	Lab Control Sample	Total/NA	Water	245.1	224184
LCSD 550-224184/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	224184
550-151754-4 MS	CH-CCR-M50-1020	Total/NA	Water	245.1	224184
550-151754-4 MSD	CH-CCR-M50-1020	Total/NA	Water	245.1	224184

Prep Batch: 224429

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-1	CH-CCR-M44D-1020	Total/NA	Water	200.8	
550-151754-2	CH-CCR-M46-1020	Total/NA	Water	200.8	
550-151754-4	CH-CCR-M50-1020	Total/NA	Water	200.8	
550-151754-6	CH-CCR-M51-1020	Total/NA	Water	200.8	
550-151754-8	CH-CCR-M64-1020	Total/NA	Water	200.8	
550-151754-10	CH-CCR-M65-1020	Total/NA	Water	200.8	
550-151754-12	CH-CCR-M66-1020	Total/NA	Water	200.8	
550-151754-14	CH-CCR-M67-1020	Total/NA	Water	200.8	
550-151754-16	CH-CCR-W123-1020	Total/NA	Water	200.8	
550-151754-18	CH-CCR-W125-1020	Total/NA	Water	200.8	
550-151754-19	CH-CCR-W126-1020	Total/NA	Water	200.8	
550-151754-21	CH-CCR-FD05-1020	Total/NA	Water	200.8	
MB 550-224429/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-224429/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-224429/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-151754-19 MS	CH-CCR-W126-1020	Total/NA	Water	200.8	
550-151754-19 MSD	CH-CCR-W126-1020	Total/NA	Water	200.8	

Analysis Batch: 224589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-1	CH-CCR-M44D-1020	Total/NA	Water	200.7 Rev 4.4	223992
550-151754-2	CH-CCR-M46-1020	Total/NA	Water	200.7 Rev 4.4	223992
550-151754-4	CH-CCR-M50-1020	Total/NA	Water	200.7 Rev 4.4	223992
550-151754-6	CH-CCR-M51-1020	Total/NA	Water	200.7 Rev 4.4	223992
550-151754-8	CH-CCR-M64-1020	Total/NA	Water	200.7 Rev 4.4	223992
550-151754-10	CH-CCR-M65-1020	Total/NA	Water	200.7 Rev 4.4	223992
550-151754-12	CH-CCR-M66-1020	Total/NA	Water	200.7 Rev 4.4	223992

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Metals (Continued)

Analysis Batch: 224589 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-14	CH-CCR-M67-1020	Total/NA	Water	200.7 Rev 4.4	223992
550-151754-16	CH-CCR-W123-1020	Total/NA	Water	200.7 Rev 4.4	223992
550-151754-18	CH-CCR-W125-1020	Total/NA	Water	200.7 Rev 4.4	223992
550-151754-19	CH-CCR-W126-1020	Total/NA	Water	200.7 Rev 4.4	223992
550-151754-21	CH-CCR-FD05-1020	Total/NA	Water	200.7 Rev 4.4	223992
MB 550-223992/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	223992
LCS 550-223992/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	223992
LCSD 550-223992/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	223992
550-151754-2 MS	CH-CCR-M46-1020	Total/NA	Water	200.7 Rev 4.4	223992
550-151754-2 MSD	CH-CCR-M46-1020	Total/NA	Water	200.7 Rev 4.4	223992

Analysis Batch: 224596

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-3	CH-CCR-M46-1020	Dissolved	Water	200.7 Rev 4.4	223987
550-151754-5	CH-CCR-M50-1020	Dissolved	Water	200.7 Rev 4.4	223987
550-151754-7	CH-CCR-M51-1020	Dissolved	Water	200.7 Rev 4.4	223987
550-151754-9	CH-CCR-M64-1020	Dissolved	Water	200.7 Rev 4.4	223987
550-151754-11	CH-CCR-M65-1020	Dissolved	Water	200.7 Rev 4.4	223987
550-151754-13	CH-CCR-M66-1020	Dissolved	Water	200.7 Rev 4.4	223987
550-151754-15	CH-CCR-M67-1020	Dissolved	Water	200.7 Rev 4.4	223987
550-151754-17	CH-CCR-W123-1020	Dissolved	Water	200.7 Rev 4.4	223987
550-151754-20	CH-CCR-W126-1020	Dissolved	Water	200.7 Rev 4.4	223987
550-151754-22	CH-CCR-FD05-1020	Dissolved	Water	200.7 Rev 4.4	223987
MB 550-223987/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	223987
LCS 550-223987/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	223987
LCSD 550-223987/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	223987
550-151754-5 MS	CH-CCR-M50-1020	Dissolved	Water	200.7 Rev 4.4	223987
550-151754-5 MSD	CH-CCR-M50-1020	Dissolved	Water	200.7 Rev 4.4	223987

Analysis Batch: 224875

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-3	CH-CCR-M46-1020	Dissolved	Water	200.7 Rev 4.4	223987
550-151754-5	CH-CCR-M50-1020	Dissolved	Water	200.7 Rev 4.4	223987
550-151754-7	CH-CCR-M51-1020	Dissolved	Water	200.7 Rev 4.4	223987
550-151754-9	CH-CCR-M64-1020	Dissolved	Water	200.7 Rev 4.4	223987
550-151754-11	CH-CCR-M65-1020	Dissolved	Water	200.7 Rev 4.4	223987
550-151754-13	CH-CCR-M66-1020	Dissolved	Water	200.7 Rev 4.4	223987
550-151754-15	CH-CCR-M67-1020	Dissolved	Water	200.7 Rev 4.4	223987
550-151754-17	CH-CCR-W123-1020	Dissolved	Water	200.7 Rev 4.4	223987
550-151754-20	CH-CCR-W126-1020	Dissolved	Water	200.7 Rev 4.4	223987
550-151754-22	CH-CCR-FD05-1020	Dissolved	Water	200.7 Rev 4.4	223987
MB 550-223987/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	223987
LCS 550-223987/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	223987
LCSD 550-223987/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	223987
550-151754-5 MS	CH-CCR-M50-1020	Dissolved	Water	200.7 Rev 4.4	223987
550-151754-5 MSD	CH-CCR-M50-1020	Dissolved	Water	200.7 Rev 4.4	223987

Analysis Batch: 225098

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-5	CH-CCR-M50-1020	Dissolved	Water	200.8 LL	223797
550-151754-7	CH-CCR-M51-1020	Dissolved	Water	200.8 LL	223797

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Metals (Continued)

Analysis Batch: 225098 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-11	CH-CCR-M65-1020	Dissolved	Water	200.8 LL	223797
550-151754-22	CH-CCR-FD05-1020	Dissolved	Water	200.8 LL	223797
MB 550-223797/1-A	Method Blank	Total/NA	Water	200.8 LL	223797
LCS 550-223797/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	223797
LCSD 550-223797/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	223797

Analysis Batch: 225325

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-2	CH-CCR-M46-1020	Total/NA	Water	200.8 LL	224429
550-151754-4	CH-CCR-M50-1020	Total/NA	Water	200.8 LL	224429
550-151754-6	CH-CCR-M51-1020	Total/NA	Water	200.8 LL	224429
550-151754-8	CH-CCR-M64-1020	Total/NA	Water	200.8 LL	224429
550-151754-10	CH-CCR-M65-1020	Total/NA	Water	200.8 LL	224429
550-151754-12	CH-CCR-M66-1020	Total/NA	Water	200.8 LL	224429
550-151754-19	CH-CCR-W126-1020	Total/NA	Water	200.8 LL	224429
MB 550-224429/1-A	Method Blank	Total/NA	Water	200.8 LL	224429
LCS 550-224429/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	224429
LCSD 550-224429/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	224429
550-151754-19 MS	CH-CCR-W126-1020	Total/NA	Water	200.8 LL	224429
550-151754-19 MSD	CH-CCR-W126-1020	Total/NA	Water	200.8 LL	224429

Analysis Batch: 225481

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-1	CH-CCR-M44D-1020	Total/NA	Water	200.8 LL	224429
550-151754-14	CH-CCR-M67-1020	Total/NA	Water	200.8 LL	224429
550-151754-18	CH-CCR-W125-1020	Total/NA	Water	200.8 LL	224429
550-151754-21	CH-CCR-FD05-1020	Total/NA	Water	200.8 LL	224429

Analysis Batch: 225525

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-1	CH-CCR-M44D-1020	Total/NA	Water	200.7 Rev 4.4	223992
550-151754-18	CH-CCR-W125-1020	Total/NA	Water	200.7 Rev 4.4	223992
MB 550-223992/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	223992
LCS 550-223992/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	223992
LCSD 550-223992/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	223992
550-151754-2 MS	CH-CCR-M46-1020	Total/NA	Water	200.7 Rev 4.4	223992
550-151754-2 MSD	CH-CCR-M46-1020	Total/NA	Water	200.7 Rev 4.4	223992

Analysis Batch: 226162

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-3	CH-CCR-M46-1020	Dissolved	Water	200.8 LL	223797
550-151754-5	CH-CCR-M50-1020	Dissolved	Water	200.8 LL	223797
550-151754-9	CH-CCR-M64-1020	Dissolved	Water	200.8 LL	223797
550-151754-11	CH-CCR-M65-1020	Dissolved	Water	200.8 LL	223797
550-151754-13	CH-CCR-M66-1020	Dissolved	Water	200.8 LL	223797
550-151754-15	CH-CCR-M67-1020	Dissolved	Water	200.8 LL	223797
550-151754-17	CH-CCR-W123-1020	Dissolved	Water	200.8 LL	223797
550-151754-20	CH-CCR-W126-1020	Dissolved	Water	200.8 LL	223797
MB 550-223797/1-A	Method Blank	Total/NA	Water	200.8 LL	223797
LCS 550-223797/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	223797
LCSD 550-223797/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	223797

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Metals (Continued)

Analysis Batch: 226162 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-3 MS	CH-CCR-M46-1020	Dissolved	Water	200.8 LL	223797
550-151754-3 MSD	CH-CCR-M46-1020	Dissolved	Water	200.8 LL	223797

Analysis Batch: 226261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-1	CH-CCR-M44D-1020	Total/NA	Water	200.8 LL	224429
550-151754-2	CH-CCR-M46-1020	Total/NA	Water	200.8 LL	224429
550-151754-4	CH-CCR-M50-1020	Total/NA	Water	200.8 LL	224429
550-151754-6	CH-CCR-M51-1020	Total/NA	Water	200.8 LL	224429
550-151754-8	CH-CCR-M64-1020	Total/NA	Water	200.8 LL	224429
550-151754-10	CH-CCR-M65-1020	Total/NA	Water	200.8 LL	224429
550-151754-12	CH-CCR-M66-1020	Total/NA	Water	200.8 LL	224429
550-151754-14	CH-CCR-M67-1020	Total/NA	Water	200.8 LL	224429
550-151754-16	CH-CCR-W123-1020	Total/NA	Water	200.8 LL	224429
550-151754-18	CH-CCR-W125-1020	Total/NA	Water	200.8 LL	224429
550-151754-19	CH-CCR-W126-1020	Total/NA	Water	200.8 LL	224429
550-151754-21	CH-CCR-FD05-1020	Total/NA	Water	200.8 LL	224429
MB 550-224429/1-A	Method Blank	Total/NA	Water	200.8 LL	224429
LCS 550-224429/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	224429
LCSD 550-224429/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	224429
550-151754-19 MS	CH-CCR-W126-1020	Total/NA	Water	200.8 LL	224429
550-151754-19 MSD	CH-CCR-W126-1020	Total/NA	Water	200.8 LL	224429

Analysis Batch: 226827

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-2	CH-CCR-M46-1020	Total/NA	Water	200.8 LL	224429
550-151754-4	CH-CCR-M50-1020	Total/NA	Water	200.8 LL	224429
550-151754-6	CH-CCR-M51-1020	Total/NA	Water	200.8 LL	224429
550-151754-8	CH-CCR-M64-1020	Total/NA	Water	200.8 LL	224429
550-151754-10	CH-CCR-M65-1020	Total/NA	Water	200.8 LL	224429
550-151754-12	CH-CCR-M66-1020	Total/NA	Water	200.8 LL	224429
550-151754-19	CH-CCR-W126-1020	Total/NA	Water	200.8 LL	224429
MB 550-224429/1-A	Method Blank	Total/NA	Water	200.8 LL	224429
LCS 550-224429/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	224429
LCSD 550-224429/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	224429
550-151754-19 MS	CH-CCR-W126-1020	Total/NA	Water	200.8 LL	224429
550-151754-19 MSD	CH-CCR-W126-1020	Total/NA	Water	200.8 LL	224429

Analysis Batch: 226839

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-1	CH-CCR-M44D-1020	Total/NA	Water	200.8 LL	224429
550-151754-2	CH-CCR-M46-1020	Total/NA	Water	200.8 LL	224429
550-151754-4	CH-CCR-M50-1020	Total/NA	Water	200.8 LL	224429
550-151754-6	CH-CCR-M51-1020	Total/NA	Water	200.8 LL	224429
550-151754-8	CH-CCR-M64-1020	Total/NA	Water	200.8 LL	224429
550-151754-10	CH-CCR-M65-1020	Total/NA	Water	200.8 LL	224429
550-151754-12	CH-CCR-M66-1020	Total/NA	Water	200.8 LL	224429
550-151754-14	CH-CCR-M67-1020	Total/NA	Water	200.8 LL	224429
550-151754-16	CH-CCR-W123-1020	Total/NA	Water	200.8 LL	224429
550-151754-18	CH-CCR-W125-1020	Total/NA	Water	200.8 LL	224429
550-151754-21	CH-CCR-FD05-1020	Total/NA	Water	200.8 LL	224429

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Metals

Prep Batch: 516839

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-1	CH-CCR-M44D-1020	Total/NA	Water	200.7	
550-151754-2	CH-CCR-M46-1020	Total/NA	Water	200.7	
550-151754-4	CH-CCR-M50-1020	Total/NA	Water	200.7	
550-151754-6	CH-CCR-M51-1020	Total/NA	Water	200.7	
550-151754-8	CH-CCR-M64-1020	Total/NA	Water	200.7	
550-151754-10	CH-CCR-M65-1020	Total/NA	Water	200.7	
550-151754-12	CH-CCR-M66-1020	Total/NA	Water	200.7	
550-151754-14	CH-CCR-M67-1020	Total/NA	Water	200.7	
550-151754-16	CH-CCR-W123-1020	Total/NA	Water	200.7	
550-151754-18	CH-CCR-W125-1020	Total/NA	Water	200.7	
550-151754-19	CH-CCR-W126-1020	Total/NA	Water	200.7	
550-151754-21	CH-CCR-FD05-1020	Total/NA	Water	200.7	
MB 280-516839/1-A	Method Blank	Total/NA	Water	200.7	
LCS 280-516839/2-A	Lab Control Sample	Total/NA	Water	200.7	
550-151756-C-3-C MS	Matrix Spike	Total/NA	Water	200.7	
550-151756-C-3-D MSD	Matrix Spike Duplicate	Total/NA	Water	200.7	
550-151756-C-5-E MS	Matrix Spike	Total/NA	Water	200.7	
550-151756-C-5-F MSD	Matrix Spike Duplicate	Total/NA	Water	200.7	

Analysis Batch: 517127

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-1	CH-CCR-M44D-1020	Total/NA	Water	200.7 Rev 4.4	516839
550-151754-2	CH-CCR-M46-1020	Total/NA	Water	200.7 Rev 4.4	516839
550-151754-4	CH-CCR-M50-1020	Total/NA	Water	200.7 Rev 4.4	516839
550-151754-6	CH-CCR-M51-1020	Total/NA	Water	200.7 Rev 4.4	516839
550-151754-8	CH-CCR-M64-1020	Total/NA	Water	200.7 Rev 4.4	516839
MB 280-516839/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	516839
LCS 280-516839/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	516839

Analysis Batch: 517283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-10	CH-CCR-M65-1020	Total/NA	Water	200.7 Rev 4.4	516839
550-151754-12	CH-CCR-M66-1020	Total/NA	Water	200.7 Rev 4.4	516839
550-151754-14	CH-CCR-M67-1020	Total/NA	Water	200.7 Rev 4.4	516839
550-151754-16	CH-CCR-W123-1020	Total/NA	Water	200.7 Rev 4.4	516839
550-151754-18	CH-CCR-W125-1020	Total/NA	Water	200.7 Rev 4.4	516839
550-151754-19	CH-CCR-W126-1020	Total/NA	Water	200.7 Rev 4.4	516839
550-151754-21	CH-CCR-FD05-1020	Total/NA	Water	200.7 Rev 4.4	516839
550-151756-C-3-C MS	Matrix Spike	Total/NA	Water	200.7 Rev 4.4	516839
550-151756-C-3-D MSD	Matrix Spike Duplicate	Total/NA	Water	200.7 Rev 4.4	516839
550-151756-C-5-E MS	Matrix Spike	Total/NA	Water	200.7 Rev 4.4	516839
550-151756-C-5-F MSD	Matrix Spike Duplicate	Total/NA	Water	200.7 Rev 4.4	516839

General Chemistry

Analysis Batch: 223938

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-3	CH-CCR-M46-1020	Dissolved	Water	SM 5310B	
550-151754-5	CH-CCR-M50-1020	Dissolved	Water	SM 5310B	
550-151754-9	CH-CCR-M64-1020	Dissolved	Water	SM 5310B	
550-151754-13	CH-CCR-M66-1020	Dissolved	Water	SM 5310B	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

General Chemistry (Continued)

Analysis Batch: 223938 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-15	CH-CCR-M67-1020	Dissolved	Water	SM 5310B	
550-151754-17	CH-CCR-W123-1020	Dissolved	Water	SM 5310B	
550-151754-20	CH-CCR-W126-1020	Dissolved	Water	SM 5310B	
550-151754-22	CH-CCR-FD05-1020	Dissolved	Water	SM 5310B	
MB 550-223938/5	Method Blank	Dissolved	Water	SM 5310B	
LCS 550-223938/6	Lab Control Sample	Dissolved	Water	SM 5310B	
LCSD 550-223938/7	Lab Control Sample Dup	Dissolved	Water	SM 5310B	
550-151754-3 MS	CH-CCR-M46-1020	Dissolved	Water	SM 5310B	
550-151754-3 MSD	CH-CCR-M46-1020	Dissolved	Water	SM 5310B	

Analysis Batch: 223939

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-2	CH-CCR-M46-1020	Total/NA	Water	SM 5310B	
550-151754-4	CH-CCR-M50-1020	Total/NA	Water	SM 5310B	
550-151754-6	CH-CCR-M51-1020	Total/NA	Water	SM 5310B	
550-151754-8	CH-CCR-M64-1020	Total/NA	Water	SM 5310B	
550-151754-10	CH-CCR-M65-1020	Total/NA	Water	SM 5310B	
550-151754-12	CH-CCR-M66-1020	Total/NA	Water	SM 5310B	
550-151754-14	CH-CCR-M67-1020	Total/NA	Water	SM 5310B	
550-151754-19	CH-CCR-W126-1020	Total/NA	Water	SM 5310B	
550-151754-21	CH-CCR-FD05-1020	Total/NA	Water	SM 5310B	
MB 550-223939/48	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-223939/49	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-223939/50	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-151750-A-1 MS ^10	Matrix Spike	Total/NA	Water	SM 5310B	
550-151750-A-1 MSD ^10	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	

Analysis Batch: 223980

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-1	CH-CCR-M44D-1020	Total/NA	Water	SM 2540C	
550-151754-2	CH-CCR-M46-1020	Total/NA	Water	SM 2540C	
550-151754-4	CH-CCR-M50-1020	Total/NA	Water	SM 2540C	
550-151754-6	CH-CCR-M51-1020	Total/NA	Water	SM 2540C	
550-151754-8	CH-CCR-M64-1020	Total/NA	Water	SM 2540C	
550-151754-10	CH-CCR-M65-1020	Total/NA	Water	SM 2540C	
550-151754-12	CH-CCR-M66-1020	Total/NA	Water	SM 2540C	
550-151754-14	CH-CCR-M67-1020	Total/NA	Water	SM 2540C	
550-151754-18	CH-CCR-W125-1020	Total/NA	Water	SM 2540C	
550-151754-19	CH-CCR-W126-1020	Total/NA	Water	SM 2540C	
MB 550-223980/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-223980/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-223980/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-151758-E-5 DU	Duplicate	Total/NA	Water	SM 2540C	
550-151796-A-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 224082

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-16	CH-CCR-W123-1020	Total/NA	Water	SM 5310B	
MB 550-224082/17	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-224082/18	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-224082/19	Lab Control Sample Dup	Total/NA	Water	SM 5310B	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

General Chemistry (Continued)

Analysis Batch: 224082 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151831-A-1 MS ^10	Matrix Spike	Total/NA	Water	SM 5310B	
550-151831-A-1 MSD ^10	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	

Analysis Batch: 224114

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-16	CH-CCR-W123-1020	Total/NA	Water	SM 2540C	
550-151754-21	CH-CCR-FD05-1020	Total/NA	Water	SM 2540C	
MB 550-224114/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-224114/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-224114/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-151879-A-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 224312

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-1	CH-CCR-M44D-1020	Total/NA	Water	SM 4500 H+ B	
550-151754-2	CH-CCR-M46-1020	Total/NA	Water	SM 4500 H+ B	
550-151754-4	CH-CCR-M50-1020	Total/NA	Water	SM 4500 H+ B	
550-151754-6	CH-CCR-M51-1020	Total/NA	Water	SM 4500 H+ B	
550-151754-8	CH-CCR-M64-1020	Total/NA	Water	SM 4500 H+ B	
550-151754-10	CH-CCR-M65-1020	Total/NA	Water	SM 4500 H+ B	
550-151754-12	CH-CCR-M66-1020	Total/NA	Water	SM 4500 H+ B	
550-151754-14	CH-CCR-M67-1020	Total/NA	Water	SM 4500 H+ B	
550-151754-16	CH-CCR-W123-1020	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-224312/25	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-224312/37	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
550-151754-1 DU	CH-CCR-M44D-1020	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 224480

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-18	CH-CCR-W125-1020	Total/NA	Water	SM 4500 H+ B	
550-151754-19	CH-CCR-W126-1020	Total/NA	Water	SM 4500 H+ B	
550-151754-21	CH-CCR-FD05-1020	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-224480/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-224480/13	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
550-151754-18 DU	CH-CCR-W125-1020	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 224644

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-7	CH-CCR-M51-1020	Dissolved	Water	SM 5310B	
550-151754-11	CH-CCR-M65-1020	Dissolved	Water	SM 5310B	
MB 550-224644/5	Method Blank	Dissolved	Water	SM 5310B	
LCS 550-224644/6	Lab Control Sample	Dissolved	Water	SM 5310B	
LCSD 550-224644/7	Lab Control Sample Dup	Dissolved	Water	SM 5310B	
550-151754-7 MS	CH-CCR-M51-1020	Dissolved	Water	SM 5310B	
550-151754-7 MSD	CH-CCR-M51-1020	Dissolved	Water	SM 5310B	

Analysis Batch: 224972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-2	CH-CCR-M46-1020	Total/NA	Water	SM 4500 NH3 D	
550-151754-4	CH-CCR-M50-1020	Total/NA	Water	SM 4500 NH3 D	
550-151754-6	CH-CCR-M51-1020	Total/NA	Water	SM 4500 NH3 D	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

General Chemistry (Continued)

Analysis Batch: 224972 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-8	CH-CCR-M64-1020	Total/NA	Water	SM 4500 NH3 D	
550-151754-10	CH-CCR-M65-1020	Total/NA	Water	SM 4500 NH3 D	
550-151754-12	CH-CCR-M66-1020	Total/NA	Water	SM 4500 NH3 D	
550-151754-14	CH-CCR-M67-1020	Total/NA	Water	SM 4500 NH3 D	
550-151754-16	CH-CCR-W123-1020	Total/NA	Water	SM 4500 NH3 D	
550-151754-19	CH-CCR-W126-1020	Total/NA	Water	SM 4500 NH3 D	
MB 550-224972/33	Method Blank	Total/NA	Water	SM 4500 NH3 D	
LCS 550-224972/34	Lab Control Sample	Total/NA	Water	SM 4500 NH3 D	
LCSD 550-224972/35	Lab Control Sample Dup	Total/NA	Water	SM 4500 NH3 D	
550-151868-B-3 MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 D	
550-151868-B-3 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 D	

Analysis Batch: 225209

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-21	CH-CCR-FD05-1020	Total/NA	Water	SM 4500 NH3 D	
MB 550-225209/4	Method Blank	Total/NA	Water	SM 4500 NH3 D	
LCS 550-225209/5	Lab Control Sample	Total/NA	Water	SM 4500 NH3 D	
LCSD 550-225209/6	Lab Control Sample Dup	Total/NA	Water	SM 4500 NH3 D	
550-152195-E-1 MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 D	
550-152195-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 D	

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-M44D-1020

Lab Sample ID: 550-151754-1

Date Collected: 10/24/20 13:53

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	223927	10/27/20 22:31	RDC	TAL PHX
Total/NA	Analysis	300.0		200	223927	10/27/20 22:50	RDC	TAL PHX
Total/NA	Prep	200.7			223992	10/28/20 10:12	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224589	11/03/20 14:22	MGM	TAL PHX
Total/NA	Prep	200.7			223992	10/28/20 10:12	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225525	11/12/20 23:07	MGM	TAL PHX
Total/NA	Prep	200.7			516839	11/16/20 15:50	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517127	11/17/20 18:16	LMT	TAL DEN
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	225481	11/12/20 22:15	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226261	11/20/20 16:55	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	226839	11/30/20 15:16	ARE	TAL PHX
Total/NA	Prep	245.1			224052	10/28/20 18:28	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224200	10/29/20 17:35	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	223980		YET	TAL PHX
					(Start)	10/28/20 09:27		
					(End)	10/29/20 10:55		
Total/NA	Analysis	SM 4500 H+ B		1	224312	10/30/20 12:30	MRR	TAL PHX

Client Sample ID: CH-CCR-M46-1020

Lab Sample ID: 550-151754-2

Date Collected: 10/25/20 15:27

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	223927	10/27/20 23:45	RDC	TAL PHX
Total/NA	Analysis	300.0		200	223927	10/28/20 00:03	RDC	TAL PHX
Total/NA	Analysis	300.0		5	223790	10/26/20 20:59	RDC	TAL PHX
Total/NA	Prep	200.7			223992	10/28/20 10:12	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224589	11/03/20 14:18	MGM	TAL PHX
Total/NA	Prep	200.7			516839	11/16/20 15:50	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517127	11/17/20 18:20	LMT	TAL DEN
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	225325	11/11/20 22:52	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226261	11/20/20 16:20	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	226827	11/30/20 13:53	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	226839	11/30/20 15:03	ARE	TAL PHX
Total/NA	Prep	245.1			224052	10/28/20 18:28	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224200	10/29/20 17:36	SRR	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-M46-1020

Lab Sample ID: 550-151754-2

Date Collected: 10/25/20 15:27

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	223980		YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	224312	10/30/20 12:30	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	224972	11/07/20 17:34	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	223939	10/27/20 22:02	MEG	TAL PHX

Client Sample ID: CH-CCR-M46-1020

Lab Sample ID: 550-151754-3

Date Collected: 10/25/20 15:27

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			223987	10/28/20 09:33	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224596	11/04/20 00:32	MGM	TAL PHX
Dissolved	Prep	200.7			223987	10/28/20 09:33	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224875	11/06/20 00:15	MGM	TAL PHX
Dissolved	Prep	200.8			223797	10/27/20 06:24	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		4	226162	11/20/20 11:22	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	223938	10/27/20 11:04	MEG	TAL PHX

Client Sample ID: CH-CCR-M50-1020

Lab Sample ID: 550-151754-4

Date Collected: 10/25/20 08:33

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	223927	10/28/20 00:22	RDC	TAL PHX
Total/NA	Analysis	300.0		200	223927	10/28/20 00:40	RDC	TAL PHX
Total/NA	Analysis	300.0		5	223790	10/26/20 21:54	RDC	TAL PHX
Total/NA	Prep	200.7			223992	10/28/20 10:12	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224589	11/03/20 14:25	MGM	TAL PHX
Total/NA	Prep	200.7			516839	11/16/20 15:50	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517127	11/17/20 18:23	LMT	TAL DEN
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	225325	11/11/20 22:54	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226261	11/20/20 16:22	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	226827	11/30/20 13:55	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	226839	11/30/20 15:05	ARE	TAL PHX
Total/NA	Prep	245.1			224184	10/29/20 16:00	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224213	10/29/20 19:41	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	223980		YET	TAL PHX
					(Start)	10/28/20 09:27		
					(End)	10/29/20 10:55		
Total/NA	Analysis	SM 4500 H+ B		1	224312	10/30/20 12:30	MRR	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-M50-1020

Lab Sample ID: 550-151754-4

Date Collected: 10/25/20 08:33

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 NH3 D		1	224972	11/07/20 17:41	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	223939	10/27/20 22:39	MEG	TAL PHX

Client Sample ID: CH-CCR-M50-1020

Lab Sample ID: 550-151754-5

Date Collected: 10/25/20 08:33

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			223987	10/28/20 09:33	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224596	11/04/20 00:28	MGM	TAL PHX
Dissolved	Prep	200.7			223987	10/28/20 09:33	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224875	11/06/20 00:11	MGM	TAL PHX
Dissolved	Prep	200.8			223797	10/27/20 06:24	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		2	225098	11/09/20 20:58	ARE	TAL PHX
Dissolved	Prep	200.8			223797	10/27/20 06:24	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		4	226162	11/20/20 11:24	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	223938	10/27/20 11:38	MEG	TAL PHX

Client Sample ID: CH-CCR-M51-1020

Lab Sample ID: 550-151754-6

Date Collected: 10/25/20 09:40

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	223927	10/28/20 00:58	RDC	TAL PHX
Total/NA	Analysis	300.0		200	223927	10/28/20 01:17	RDC	TAL PHX
Total/NA	Analysis	300.0		5	223790	10/26/20 22:22	RDC	TAL PHX
Total/NA	Prep	200.7			223992	10/28/20 10:12	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224589	11/03/20 14:29	MGM	TAL PHX
Total/NA	Prep	200.7			516839	11/16/20 15:50	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517127	11/17/20 18:26	LMT	TAL DEN
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	225325	11/11/20 22:57	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226261	11/20/20 16:24	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	226827	11/30/20 13:57	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	226839	11/30/20 15:07	ARE	TAL PHX
Total/NA	Prep	245.1			224184	10/29/20 16:00	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224213	10/29/20 19:43	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	223980		YET	TAL PHX
					(Start)	10/28/20 09:27		
					(End)	10/29/20 10:55		
Total/NA	Analysis	SM 4500 H+ B		1	224312	10/30/20 12:30	MRR	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-M51-1020

Lab Sample ID: 550-151754-6

Date Collected: 10/25/20 09:40

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 NH3 D		1	224972	11/07/20 17:47	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	223939	10/27/20 22:50	MEG	TAL PHX

Client Sample ID: CH-CCR-M51-1020

Lab Sample ID: 550-151754-7

Date Collected: 10/25/20 09:40

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			223987	10/28/20 09:33	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224596	11/04/20 00:35	MGM	TAL PHX
Dissolved	Prep	200.7			223987	10/28/20 09:33	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224875	11/06/20 00:19	MGM	TAL PHX
Dissolved	Prep	200.8			223797	10/27/20 06:24	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		2	225098	11/09/20 21:00	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	224644	11/03/20 16:35	MEG	TAL PHX

Client Sample ID: CH-CCR-M64-1020

Lab Sample ID: 550-151754-8

Date Collected: 10/24/20 11:45

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	223927	10/28/20 01:35	RDC	TAL PHX
Total/NA	Analysis	300.0		200	223927	10/28/20 01:54	RDC	TAL PHX
Total/NA	Analysis	300.0		5	223790	10/26/20 22:49	RDC	TAL PHX
Total/NA	Prep	200.7			223992	10/28/20 10:12	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224589	11/03/20 14:33	MGM	TAL PHX
Total/NA	Prep	200.7			516839	11/16/20 15:50	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517127	11/17/20 18:30	LMT	TAL DEN
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	225325	11/11/20 22:59	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226261	11/20/20 16:26	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	226827	11/30/20 13:59	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	226839	11/30/20 15:09	ARE	TAL PHX
Total/NA	Prep	245.1			224052	10/28/20 18:28	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224200	10/29/20 17:33	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	223980		YET	TAL PHX
					(Start)	10/28/20 09:27		
					(End)	10/29/20 10:55		
Total/NA	Analysis	SM 4500 H+ B		1	224312	10/30/20 12:30	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	224972	11/07/20 17:58	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	223939	10/27/20 23:02	MEG	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-M64-1020

Lab Sample ID: 550-151754-9

Date Collected: 10/24/20 11:45

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			223987	10/28/20 09:33	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224596	11/04/20 00:39	MGM	TAL PHX
Dissolved	Prep	200.7			223987	10/28/20 09:33	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224875	11/06/20 00:23	MGM	TAL PHX
Dissolved	Prep	200.8			223797	10/27/20 06:24	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		4	226162	11/20/20 11:28	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	223938	10/27/20 12:01	MEG	TAL PHX

Client Sample ID: CH-CCR-M65-1020

Lab Sample ID: 550-151754-10

Date Collected: 10/25/20 14:12

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	223927	10/28/20 02:12	RDC	TAL PHX
Total/NA	Analysis	300.0		200	223927	10/28/20 02:31	RDC	TAL PHX
Total/NA	Analysis	300.0		5	223790	10/26/20 23:44	RDC	TAL PHX
Total/NA	Prep	200.7			223992	10/28/20 10:12	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224589	11/03/20 14:37	MGM	TAL PHX
Total/NA	Prep	200.7			516839	11/16/20 15:50	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517283	11/18/20 12:46	LMT	TAL DEN
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	225325	11/11/20 23:01	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226261	11/20/20 16:28	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	226827	11/30/20 14:01	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	226839	11/30/20 15:12	ARE	TAL PHX
Total/NA	Prep	245.1			224184	10/29/20 16:00	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224213	10/29/20 19:44	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	223980		YET	TAL PHX
					(Start)	10/28/20 09:27		
					(End)	10/29/20 10:55		
Total/NA	Analysis	SM 4500 H+ B		1	224312	10/30/20 12:30	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	224972	11/07/20 18:05	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	223939	10/27/20 23:13	MEG	TAL PHX

Client Sample ID: CH-CCR-M65-1020

Lab Sample ID: 550-151754-11

Date Collected: 10/25/20 14:12

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			223987	10/28/20 09:33	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224596	11/04/20 00:43	MGM	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-M65-1020

Lab Sample ID: 550-151754-11

Date Collected: 10/25/20 14:12

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			223987	10/28/20 09:33	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224875	11/06/20 00:26	MGM	TAL PHX
Dissolved	Prep	200.8			223797	10/27/20 06:24	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		2	225098	11/09/20 21:04	ARE	TAL PHX
Dissolved	Prep	200.8			223797	10/27/20 06:24	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		4	226162	11/20/20 11:30	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	224644	11/03/20 17:11	MEG	TAL PHX

Client Sample ID: CH-CCR-M66-1020

Lab Sample ID: 550-151754-12

Date Collected: 10/25/20 12:45

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	223927	10/28/20 03:26	RDC	TAL PHX
Total/NA	Analysis	300.0		200	223927	10/28/20 03:44	RDC	TAL PHX
Total/NA	Analysis	300.0		5	223790	10/27/20 00:11	RDC	TAL PHX
Total/NA	Prep	200.7			223992	10/28/20 10:12	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224589	11/03/20 14:40	MGM	TAL PHX
Total/NA	Prep	200.7			516839	11/16/20 15:50	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517283	11/18/20 12:50	LMT	TAL DEN
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	225325	11/11/20 23:03	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226261	11/20/20 16:30	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	226827	11/30/20 14:04	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	226839	11/30/20 15:14	ARE	TAL PHX
Total/NA	Prep	245.1			224184	10/29/20 16:00	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224213	10/29/20 19:46	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	223980		YET	TAL PHX
					(Start)	10/28/20 09:27		
					(End)	10/29/20 10:55		
Total/NA	Analysis	SM 4500 H+ B		1	224312	10/30/20 12:30	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	224972	11/07/20 18:11	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	223939	10/27/20 23:26	MEG	TAL PHX

Client Sample ID: CH-CCR-M66-1020

Lab Sample ID: 550-151754-13

Date Collected: 10/25/20 12:45

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			223987	10/28/20 09:33	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224596	11/04/20 00:47	MGM	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-M66-1020

Lab Sample ID: 550-151754-13

Date Collected: 10/25/20 12:45

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			223987	10/28/20 09:33	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224875	11/06/20 00:30	MGM	TAL PHX
Dissolved	Prep	200.8			223797	10/27/20 06:24	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		4	226162	11/20/20 11:32	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	223938	10/27/20 12:26	MEG	TAL PHX

Client Sample ID: CH-CCR-M67-1020

Lab Sample ID: 550-151754-14

Date Collected: 10/25/20 16:21

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	223927	10/28/20 04:03	RDC	TAL PHX
Total/NA	Analysis	300.0		200	223927	10/28/20 04:21	RDC	TAL PHX
Total/NA	Analysis	300.0		5	223790	10/27/20 01:33	RDC	TAL PHX
Total/NA	Prep	200.7			223992	10/28/20 10:12	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224589	11/03/20 14:44	MGM	TAL PHX
Total/NA	Prep	200.7			516839	11/16/20 15:50	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517283	11/18/20 12:53	LMT	TAL DEN
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	225481	11/12/20 21:57	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226261	11/20/20 16:36	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	226839	11/30/20 14:38	ARE	TAL PHX
Total/NA	Prep	245.1			224184	10/29/20 16:00	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224213	10/29/20 19:47	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	223980		YET	TAL PHX
					(Start)	10/28/20 09:27		
					(End)	10/29/20 10:55		
Total/NA	Analysis	SM 4500 H+ B		1	224312	10/30/20 12:30	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	224972	11/07/20 18:22	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	223939	10/27/20 23:37	MEG	TAL PHX

Client Sample ID: CH-CCR-M67-1020

Lab Sample ID: 550-151754-15

Date Collected: 10/25/20 16:21

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			223987	10/28/20 09:33	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224596	11/04/20 00:50	MGM	TAL PHX
Dissolved	Prep	200.7			223987	10/28/20 09:33	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224875	11/06/20 00:34	MGM	TAL PHX
Dissolved	Prep	200.8			223797	10/27/20 06:24	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		4	226162	11/20/20 11:34	ARE	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-M67-1020

Lab Sample ID: 550-151754-15

Date Collected: 10/25/20 16:21

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	SM 5310B		1	223938	10/27/20 12:37	MEG	TAL PHX

Client Sample ID: CH-CCR-W123-1020

Lab Sample ID: 550-151754-16

Date Collected: 10/26/20 08:38

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	223927	10/28/20 04:39	RDC	TAL PHX
Total/NA	Analysis	300.0		200	223927	10/28/20 04:58	RDC	TAL PHX
Total/NA	Analysis	300.0		5	223790	10/27/20 02:01	RDC	TAL PHX
Total/NA	Prep	200.7			223992	10/28/20 10:12	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224589	11/03/20 14:48	MGM	TAL PHX
Total/NA	Prep	200.7			516839	11/16/20 15:50	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517283	11/18/20 12:56	LMT	TAL DEN
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	226261	11/20/20 16:38	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	226839	11/30/20 14:40	ARE	TAL PHX
Total/NA	Prep	245.1			224184	10/29/20 16:00	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224213	10/29/20 19:49	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	224114		YET	TAL PHX
					(Start)	10/29/20 09:10		
					(End)	10/30/20 10:50		
Total/NA	Analysis	SM 4500 H+ B		1	224312	10/30/20 12:30	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	224972	11/07/20 18:29	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	224082	10/28/20 14:25	MEG	TAL PHX

Client Sample ID: CH-CCR-W123-1020

Lab Sample ID: 550-151754-17

Date Collected: 10/26/20 08:38

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			223987	10/28/20 09:33	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224596	11/04/20 00:54	MGM	TAL PHX
Dissolved	Prep	200.7			223987	10/28/20 09:33	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224875	11/06/20 00:38	MGM	TAL PHX
Dissolved	Prep	200.8			223797	10/27/20 06:24	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		4	226162	11/20/20 11:37	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	223938	10/27/20 12:49	MEG	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-W125-1020

Lab Sample ID: 550-151754-18

Date Collected: 10/24/20 15:16

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	223927	10/28/20 05:16	RDC	TAL PHX
Total/NA	Analysis	300.0		200	223927	10/28/20 05:35	RDC	TAL PHX
Total/NA	Prep	200.7			223992	10/28/20 10:12	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224589	11/03/20 14:59	MGM	TAL PHX
Total/NA	Prep	200.7			223992	10/28/20 10:12	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	225525	11/12/20 23:10	MGM	TAL PHX
Total/NA	Prep	200.7			516839	11/16/20 15:50	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517283	11/18/20 13:00	LMT	TAL DEN
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	225481	11/12/20 22:01	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226261	11/20/20 16:41	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	226839	11/30/20 14:42	ARE	TAL PHX
Total/NA	Prep	245.1			224052	10/28/20 18:28	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224200	10/29/20 17:38	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	223980		YET	TAL PHX
					(Start)	10/28/20 09:27		
					(End)	10/29/20 10:55		
Total/NA	Analysis	SM 4500 H+ B		1	224480	11/02/20 18:00	MRR	TAL PHX

Client Sample ID: CH-CCR-W126-1020

Lab Sample ID: 550-151754-19

Date Collected: 10/25/20 11:34

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	223927	10/28/20 05:53	RDC	TAL PHX
Total/NA	Analysis	300.0		200	223927	10/28/20 06:11	RDC	TAL PHX
Total/NA	Analysis	300.0		5	223790	10/27/20 02:28	RDC	TAL PHX
Total/NA	Prep	200.7			223992	10/28/20 10:12	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224589	11/03/20 15:03	MGM	TAL PHX
Total/NA	Prep	200.7			516839	11/16/20 15:50	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517283	11/18/20 13:03	LMT	TAL DEN
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	225325	11/11/20 22:50	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	226261	11/20/20 16:17	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	226827	11/30/20 13:47	ARE	TAL PHX
Total/NA	Prep	245.1			224184	10/29/20 16:00	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224213	10/29/20 19:50	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	223980		YET	TAL PHX
					(Start)	10/28/20 09:27		
					(End)	10/29/20 10:55		

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-W126-1020

Lab Sample ID: 550-151754-19

Date Collected: 10/25/20 11:34

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 H+ B		1	224480	11/02/20 18:00	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	224972	11/07/20 18:40	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	223939	10/28/20 00:00	MEG	TAL PHX

Client Sample ID: CH-CCR-W126-1020

Lab Sample ID: 550-151754-20

Date Collected: 10/25/20 11:34

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			223987	10/28/20 10:47	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224596	11/04/20 01:02	MGM	TAL PHX
Dissolved	Prep	200.7			223987	10/28/20 10:47	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224875	11/06/20 00:45	MGM	TAL PHX
Dissolved	Prep	200.8			223797	10/27/20 06:24	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		4	226162	11/20/20 11:39	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	223938	10/27/20 13:01	MEG	TAL PHX

Client Sample ID: CH-CCR-FD05-1020

Lab Sample ID: 550-151754-21

Date Collected: 10/25/20 09:40

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	224067	10/28/20 17:31	RDC	TAL PHX
Total/NA	Analysis	300.0		200	224067	10/28/20 18:26	RDC	TAL PHX
Total/NA	Analysis	300.0		5	223790	10/27/20 03:23	RDC	TAL PHX
Total/NA	Prep	200.7			223992	10/28/20 10:12	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224589	11/03/20 15:07	MGM	TAL PHX
Total/NA	Prep	200.7			516839	11/16/20 15:50	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517283	11/18/20 13:06	LMT	TAL DEN
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	225481	11/12/20 22:03	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226261	11/20/20 16:43	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	226839	11/30/20 14:44	ARE	TAL PHX
Total/NA	Prep	245.1			224184	10/29/20 16:00	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224213	10/29/20 19:55	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	224114		YET	TAL PHX
					(Start)	10/29/20 09:10		
					(End)	10/30/20 10:50		
Total/NA	Analysis	SM 4500 H+ B		1	224480	11/02/20 18:00	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	225209	11/09/20 18:32	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	223939	10/28/20 00:11	MEG	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Client Sample ID: CH-CCR-FD05-1020

Lab Sample ID: 550-151754-22

Date Collected: 10/25/20 09:40

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			223987	10/28/20 09:33	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224596	11/04/20 00:58	MGM	TAL PHX
Dissolved	Prep	200.7			223987	10/28/20 09:33	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224875	11/06/20 00:42	MGM	TAL PHX
Dissolved	Prep	200.8			223797	10/27/20 06:24	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		2	225098	11/09/20 21:15	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	223938	10/27/20 13:12	MEG	TAL PHX

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Laboratory: Eurofins TestAmerica, Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-08-21
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
200.8 LL	200.8	Water	Molybdenum
SM 4500 H+ B		Water	Temperature
SM 5310B		Water	Dissolved Organic Carbon - Quad

Laboratory: Eurofins TestAmerica, Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-21
A2LA	ISO/IEC 17025	2907.01	10-31-21
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-08-21
Arizona	State	AZ0713	12-20-20
Arkansas DEQ	State	19-047-0	06-01-21
California	State	2513	01-08-21
Connecticut	State	PH-0686	09-30-20 *
Florida	NELAP	E87667-57	07-01-21
Georgia	State	4025-011	01-09-21
Illinois	NELAP	2000172019-1	04-30-21
Iowa	State	IA#370	12-01-20
Kansas	NELAP	E-10166	04-30-21
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-21
Maine	State	2019011 (231)	03-03-21
Minnesota	NELAP	1788752	12-31-20
Nevada	State	CO000262020-1	07-31-21
New Hampshire	NELAP	205319	04-29-21
New Jersey	NELAP	190002	06-30-21
New York	NELAP	59923	04-01-21
North Carolina (WW/SW)	State	358	12-31-20
North Dakota	State	R-034	01-08-21
Oklahoma	State	2018-006	09-01-21
Oregon	NELAP	4025-011	01-08-21
Pennsylvania	NELAP	013	07-31-21
South Carolina	State	72002001	01-08-21
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-20-18	09-30-21
US Fish & Wildlife	US Federal Programs	058448	08-01-21
USDA	US Federal Programs	P330-18-00099	03-26-21
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-21
Virginia	NELAP	10490	06-14-21
Washington	State	C583-19	08-03-21
West Virginia DEP	State	354	11-30-20
Wisconsin	State	999615430	08-31-21
Wyoming (UST)	A2LA	2907.01	10-31-21

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins TestAmerica, Phoenix

Method Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-1

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PHX
200.7 Rev 4.4	Metals (ICP)	EPA	TAL DEN
200.7 Rev 4.4	Metals (ICP)	40CFR136A	TAL PHX
200.8 LL	Metals (ICP/MS)	EPA	TAL PHX
245.1	Mercury (CVAA)	EPA	TAL PHX
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PHX
SM 4500 H+ B	pH	SM	TAL PHX
SM 4500 NH3 D	Ammonia	SM	TAL PHX
SM 5310B	Organic Carbon, Dissolved (DOC)	SM	TAL PHX
SM 5310B	Organic Carbon, Total (TOC)	SM	TAL PHX
200.7	Preparation, Total Metals	EPA	TAL DEN
200.7	Preparation, Total Metals	EPA	TAL PHX
200.8	Preparation, Total Metals	EPA	TAL PHX
245.1	Preparation, Mercury	EPA	TAL PHX

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

TestAmerica Phoenix

4625 E Cotton Center Blvd
Suite 189
Phoenix, AZ 85004
phone 602.437.3340 fax 602.454.9303



550-151754 Chain of Custody

Chain of Custody Record

☐ DW ☐ NPDES ☐ RCRA ☒ Other: CCR

151754

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact		Natalie Chrisman (602) 250-3608		Lab Contact: Ken Baker (928) 288-1241		Date:		COG No:	
Arizona Public Service 4801 Cholla Lake Rd Joseph City, AZ 86032 (928) 587-0319		Analysis Turnaround Time <input type="checkbox"/> CALENDAR DAYS <input checked="" type="checkbox"/> WORKING DAYS TAT if different from Below: 2 weeks <input checked="" type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Jim Edwards / (928) 288-1241		Carrier:		1 of 2 COCs	
Project Name: CCR Groundwater Monitoring Site: APS Cholla Power Plant (FAP) Project #:				EPA 300.0 (Cl, F, SO4)		EPA 200.7 - Totals (B, Ca, Be, Li, Fe, Mn)		EPA 200.7 - Totals (B, Ca, Be, Li)	
				EPA 200.7 - Dissolved (Fe, Mn)		EPA 200.8 - Totals (Sb, As, Ba, Cd, Co, Cr, Pb, Mo, Se, Ti)		EPA 200.8 - Dissolved (As, Co)	
				EPA 245.1 - Totals (Hg)		SM 4500-HB (pH)		SM 2540C (TDS)	
				SM 5310B (TOC, DOC)		SM 4500D (NH3 as N)		SM 4500E/B (NO3+NO2 as N)	
				Sample Specific Notes:					
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	
CH-CCR-M44D-1020	10/24/20	13:53	G	W	2	N	X	X	
CH-CCR-M46-1020	10/25/20	15:27	G	W	12	N	X	X	
CH-CCR-M50-1020	10/25/20	08:33	G	W	12	N	X	X	
CH-CCR-M51-1020	10/24/20	08:40	G	W	12	N	X	X	
CH-CCR-M64-1020	10/24/20	11:45	G	W	12	N	X	X	
CH-CCR-M65-1020	10/25/20	14:12	G	W	12	N	X	X	
CH-CCR-M66-1020	10/25/20	12:45	G	W	12	N	X	X	
CH-CCR-M67-1020	10/25/20	16:21	G	W	12	N	X	X	
CH-CCR-W123-1020	10/26/20	08:38	G	W	12	N	X	X	
Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample. <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown Special Instructions/QC Requirements & Comments: Perform Method 200.8 with collision cell. * As marked on the bottle, perform dissolved analyses with sample provided in bottles marked 'field filtered'									
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months									
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temp. (°C): Obs'd:		Therm ID No.:			
Relinquished by: [Signature]		Company: [Signature]		Date/Time: 10/26/20 12:25		Received by: [Signature]		Company: [Signature]	
Relinquished by:		Company:		Date/Time:		Received by:		Company:	
Relinquished by:		Company:		Date/Time:		Received by:		Company:	

TestAmerica Phoenix

4625 E Cotton Center Blvd
Suite 189
Phoenix, AZ 85040
phone 602.437.3340 fax 602.454.9303

Chain of Custody Record

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other: CCR

151754



TestAmerica Laboratories, Inc.

Client Contact		Natalie Chrisman (602) 250-3608		Jim Edwards / (928) 288-1241		Date:		COC No. 2 of 2 COCs													
Arizona Public Service 4801 Cholla Lake Rd Joseph City, AZ 86032 (928) 587-0319		Analysis Turnaround Time <input type="checkbox"/> CALENDAR DAYS <input checked="" type="checkbox"/> WORKING DAYS TAT if different from Below: <input checked="" type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Lab Contact: Ken Baker		Carrier:		Sampler: For Lab Use Only: Walk-in Client: Lab Sampling: Job / SDG No.:													
Project Name: CCR Groundwater Monitoring Site: APS Cholla Power Plant (FAP) Project #:																					
Sample Identification	Sample Date	Sample Time	Sample Type (G=Comp, G=Grav)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	EPA 300.0 (Cl, F, SO4)	EPA 200.7 - Totals (B, Ca, Be, Li, Fe, Mn)	EPA 200.7 - Dissolved (Fe, Mn)	EPA 200.8 - Totals (Sb, As, Ba, Cd, Co, Cr, Pb, Mo, Se, Ti)	EPA 200.8 - Dissolved (As, Co)	EPA 245.1 - Totals (Hg)	SM 4500-HB (pH)	SM 2540C (TDS)	SM 5310B (TOC, DOC)	SM 4500D (NH3 as N)	SM 4500E/B (NO3+NO2 as N)	EPA 200.7 - Totals (B, Ca, Be, Li)	Sample Specific Notes:	
CH-CCR-W125-1020	10/24/20	15:16	G	W	2	N	N	X						X	X	X	X	X	X	X	Low Flow A8
CH-CCR-W126-1020	10/25/20	11:34	G	W	12	*	N	X	X	X	X	X	X	X	X	X	X	X	X	X	19+20
CH-CCR-FD05-1020	10/25/20	08:40	G	W	12	*	N	X	X	X	X	X	X	X	X	X	X	X	X	X	21+22
<p>Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other</p> <p>Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.</p> <p><input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown</p> <p>Special Instructions/QC Requirements & Comments:</p> <p>Perform Method 200.8 with collision cell. * As marked on the bottle: perform dissolved analyses with sample provided in bottles marked 'field filtered'</p> <p>37/2.71,77</p> <p>Relinquished by: <i>[Signature]</i> Company: <i>[Signature]</i> Date/Time: 10/26/20 Received by: <i>[Signature]</i> Date/Time: 10/26/20</p> <p>Relinquished by: <i>[Signature]</i> Company: <i>[Signature]</i> Date/Time: 10/26/20 Received by: <i>[Signature]</i> Date/Time: 10/26/20</p> <p>Relinquished by: <i>[Signature]</i> Company: <i>[Signature]</i> Date/Time: 10/26/20 Received by: <i>[Signature]</i> Date/Time: 10/26/20</p> <p>Relinquished by: <i>[Signature]</i> Company: <i>[Signature]</i> Date/Time: 10/26/20 Received by: <i>[Signature]</i> Date/Time: 10/26/20</p>																					

Login Sample Receipt Checklist

Client: Arizona Public Service Company

Job Number: 550-151754-1

Login Number: 151754

List Source: Eurofins TestAmerica, Phoenix

List Number: 1

Creator: Maycock, Lisa

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

Login Sample Receipt Checklist

Client: Arizona Public Service Company

Job Number: 550-151754-1

Login Number: 151754

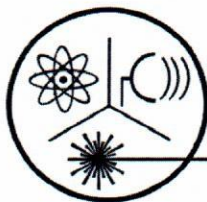
List Number: 2

Creator: O'Hara, Jake F

List Source: Eurofins TestAmerica, Denver

List Creation: 11/14/20 05:28 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	False	Limited volume received.
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446


Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: May 05, 2020
Sample Received: May 08, 2020
Analysis Completed: May 21, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-M46-0520	< 0.4	< 0.8	< 0.8

Date of Analysis	5/8/2020	5/8/2020	5/8/2020
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Robert L. Metzger, Ph.D., C.H.P.

5/21/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality

Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report

Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04

PWS Name:

May 5, 2020 10:01 (24 hour clock)

Sample Date

Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

☐ EPDS #

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected:

☐ Quarterly

Date Q2 collected:

☐ Composite of four quarterly samples

Date Q3 collected:

Date Q4 collected:

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006		µg/L	
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	5/8/2020	< 0.8	
GammaRay HPGE		1 pCi/L	Radium 226	4020	5/8/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	5/8/2020	< 0.8	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64371

Lab ID Number: AZ0462

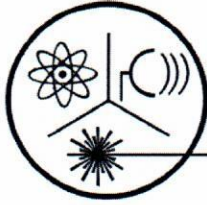
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: CH-CCR-M46-0520

Authorized Signature:

Date Public Water System Notified:



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: May 06, 2020
Sample Received: May 08, 2020
Analysis Completed: May 21, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-M50-0520	< 0.4	< 0.8	< 0.8

Date of Analysis	5/8/2020	5/8/2020	5/8/2020
------------------	----------	----------	----------


Robert L. Metzger, Ph.D., C.H.P.

5/21/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04

PWS Name: _____

May 6, 2020 13:46 (24 hour clock)

Sample Date

Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006		µg/L	
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	5/8/2020	< 0.8	
GammaRay HPGE		1 pCi/L	Radium 226	4020	5/8/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	5/8/2020	< 0.8	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64372

Lab ID Number: AZ0462

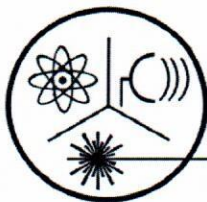
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: CH-CCR-M50-0520

Authorized Signature: _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121

Website: www.radsafe.com

(480) 897-9459

FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: May 06, 2020
Sample Received: May 08, 2020
Analysis Completed: May 21, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-M51-0520	< 0.4	< 0.8	< 0.8

Date of Analysis	5/8/2020	5/8/2020	5/8/2020
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Robert L. Metzger, Ph.D., C.H.P.

5/21/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

May 6, 2020 15:15 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006		µg/L	
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	5/8/2020	< 0.8	
GammaRay HPGE		1 pCi/L	Radium 226	4020	5/8/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	5/8/2020	< 0.8	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64373

Lab ID Number: AZ0462

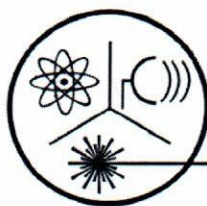
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: CH-CCR-M51-0520

Authorized Signature: 

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121

Website: www.radsafe.com

(480) 897-9459

FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service

400 N. 5th Street

Phoenix, AZ 85004

Sampling Date: May 06, 2020

Sample Received: May 08, 2020

Analysis Completed: May 21, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-M64-0520	< 0.4	< 0.8	< 0.8

Date of Analysis	5/8/2020	5/8/2020	5/8/2020
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Robert L. Metzger, Ph.D., C.H.P.

5/21/2020

Date

Laboratory License Number AZ0462

Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report

Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04

PWS Name:

May 6, 2020

8:13

(24 hour clock)

Sample Date

Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

☐ EPDS #**Compliance Sample Type:**

☐ Reduced Monitoring Date Q1 collected: _____

☐ Quarterly Date Q2 collected: _____

☐ Composite of four quarterly samples Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006		µg/L	
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	5/8/2020	< 0.8	
GammaRay HPGE		1 pCi/L	Radium 226	4020	5/8/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	5/8/2020	< 0.8	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

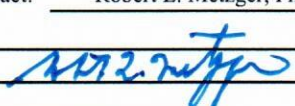
Specimen Number: RSE64374

Lab ID Number: AZ0462

Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: CH-CCR-M64-0520

Authorized Signature: 

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121

Website: www.radsafe.com

(480) 897-9459

FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service

400 N. 5th Street

Phoenix, AZ 85004

Sampling Date: May 05, 2020

Sample Received: May 08, 2020

Analysis Completed: May 21, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-M65-0520	< 0.4	< 0.8	< 0.8

Date of Analysis	5/8/2020	5/8/2020	5/8/2020
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Robert L. Metzger, Ph.D., C.H.P.

5/21/2020

Date

Laboratory License Number AZ0462

Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report*****Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only*****

PWS ID#: AZ04

PWS Name:

May 5, 2020

8:16

(24 hour clock)

Sample Date

Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

☐ EPDS #**Compliance Sample Type:**

- ☐ Reduced Monitoring Date Q1 collected: _____
- ☐ Quarterly Date Q2 collected: _____
- ☐ Composite of four quarterly samples Date Q3 collected: _____
- Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006			µg/L
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	5/8/2020	< 0.8	
GammaRay HPGE		1 pCi/L	Radium 226	4020	5/8/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	5/8/2020	< 0.8	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

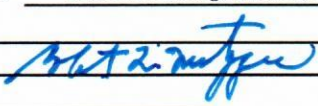
Specimen Number: RSE64375

Lab ID Number: AZ0462

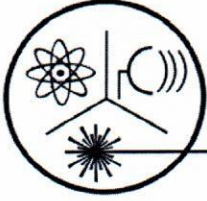
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: CH-CCR-M65-0520

Authorized Signature: 

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

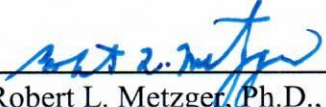
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: May 05, 2020
Sample Received: May 08, 2020
Analysis Completed: May 21, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-M66-0520	< 0.4	< 0.8	< 0.8

Date of Analysis	5/15/2020	5/15/2020	5/15/2020
------------------	-----------	-----------	-----------


Robert L. Metzger, Ph.D., C.H.P. 5/21/2020
Laboratory License Number AZ0462 Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

May 5, 2020 12:46 (24 hour clock)
Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number Owner/Contact Phone Number

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring Date Q1 collected: _____
☐ Quarterly Date Q2 collected: _____
☐ Composite of four quarterly samples Date Q3 collected: _____
Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006		µg/L	
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	5/15/2020	< 0.8	
GammaRay HPGE		1 pCi/L	Radium 226	4020	5/15/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	5/15/2020	< 0.8	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64376

Lab ID Number: AZ0462

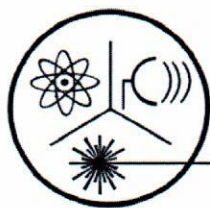
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: CH-CCR-M66-0520

Authorized Signature: 

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121

Website: www.radsafe.com

(480) 897-9459

FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service

400 N. 5th Street

Phoenix, AZ 85004

Sampling Date: May 05, 2020

Sample Received: May 08, 2020

Analysis Completed: May 21, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-M67-0520	< 0.4	< 0.8	< 0.8

Date of Analysis	5/8/2020	5/8/2020	5/8/2020
------------------	----------	----------	----------

Robert L. Metzger, Ph.D., C.H.P.

5/21/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04

PWS Name: _____

May 5, 2020

11:22

(24 hour clock)

Sample Date

Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006		µg/L	
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	5/8/2020	< 0.8	
GammaRay HPGE		1 pCi/L	Radium 226	4020	5/8/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	5/8/2020	< 0.8	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64377

Lab ID Number: AZ0462

Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: CH-CCR-M67-0520

Authorized Signature: _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: May 06, 2020
Sample Received: May 08, 2020
Analysis Completed: May 21, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-W123-0520	< 0.4	< 0.8	< 0.8

Date of Analysis	5/8/2020	5/8/2020	5/8/2020
------------------	----------	----------	----------


Robert L. Metzger, Ph.D., C.H.P.

5/21/2020

Date

Laboratory License Number AZ0462

Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report*****Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only*****

PWS ID#: AZ04

PWS Name:

May 6, 2020

11:14

(24 hour clock)

Sample Date

Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

☐ EPDS #**Compliance Sample Type:**

- ☐ Reduced Monitoring Date Q1 collected: _____
- ☐ Quarterly Date Q2 collected: _____
- ☐ Composite of four quarterly samples Date Q3 collected: _____
- Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006		µg/L	
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	5/8/2020	< 0.8	
GammaRay HPGE		1 pCi/L	Radium 226	4020	5/8/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	5/8/2020	< 0.8	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

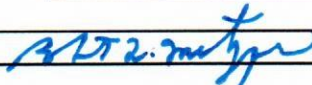
Specimen Number: RSE64378

Lab ID Number: AZ0462

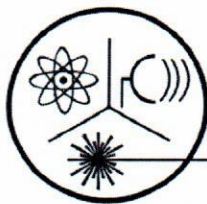
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: CH-CCR-W123-0520

Authorized Signature: 

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121

Website: www.radsafe.com

(480) 897-9459

FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service

400 N. 5th Street

Phoenix, AZ 85004

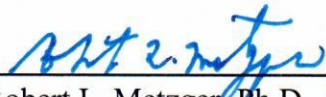
Sampling Date: May 05, 2020

Sample Received: May 08, 2020

Analysis Completed: May 21, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-W126-0520	< 0.4	< 0.8	< 0.8

Date of Analysis	5/8/2020	5/8/2020	5/8/2020
------------------	----------	----------	----------


Robert L. Metzger, Ph.D., C.H.P.

5/21/2020

Date

Laboratory License Number AZ0462

Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report*****Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only*****

PWS ID#: AZ04

PWS Name: _____

May 5, 2020

14:09

(24 hour clock)

Sample Date

Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

☐ EPDS # _____**Compliance Sample Type:**

- ☐ Reduced Monitoring Date Q1 collected: _____
- ☐ Quarterly Date Q2 collected: _____
- ☐ Composite of four quarterly samples Date Q3 collected: _____
- Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006		µg/L	
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	5/8/2020	< 0.8	
GammaRay HPGE		1 pCi/L	Radium 226	4020	5/8/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	5/8/2020	< 0.8	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

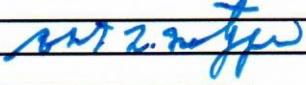
Specimen Number: RSE64379

Lab ID Number: AZ0462

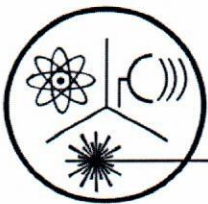
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: CH-CCR-W126-0520

Authorized Signature: 

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446


Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: May 06, 2020
Sample Received: May 08, 2020
Analysis Completed: May 21, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-FD05-0520	< 0.4	< 0.8	< 0.8

Date of Analysis	5/8/2020	5/8/2020	5/8/2020
------------------	----------	----------	----------


Robert L. Metzger, Ph.D., C.H.P. 5/21/2020
Laboratory License Number AZ0462 Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

May 6, 2020 8:13 (24 hour clock)
Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number Owner/Contact Phone Number

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring Date Q1 collected: _____
☐ Quarterly Date Q2 collected: _____
☐ Composite of four quarterly samples Date Q3 collected: _____
Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006		µg/L	
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	5/8/2020	< 0.8	
GammaRay HPGE		1 pCi/L	Radium 226	4020	5/8/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	5/8/2020	< 0.8	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE64380

Lab ID Number: AZ0462

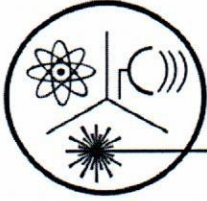
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: CH-CCR-FD05-0520

Authorized Signature: 

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446


Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: May 04, 2020
Sample Received: May 08, 2020
Analysis Completed: May 21, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-W309-0520	< 0.4	< 0.8	< 0.8

Date of Analysis	5/8/2020	5/8/2020	5/8/2020
------------------	----------	----------	----------


Robert L. Metzger, Ph.D., C.H.P. 5/21/2020
Laboratory License Number AZ0462 Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04

PWS Name: _____

May 4, 2020

14:24

(24 hour clock)

Sample Date

Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006		µg/L	
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	5/8/2020	< 0.8	
GammaRay HPGE		1 pCi/L	Radium 226	4020	5/8/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	5/8/2020	< 0.8	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

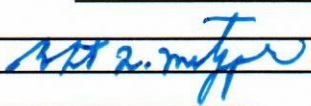
Specimen Number: RSE64381

Lab ID Number: AZ0462

Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: CH-CCR-W309-0520

Authorized Signature: 

Date Public Water System Notified: _____

Client Information				Radiation Safety Engineering, Inc.				Chandler, Arizona								
Name: Natalie Chrisman/602-250-3608 Jim Edwards/928-288-1241				3245 North Washington Street				85225								
Company: Arizona Public Service								Analysis Request								
Address: 4801 Cholla Lake Rd, Joseph City, AZ 86032																
Phone: 928-587-0319																
Site: APS Cholla Power Plant (FAP)																
Sample ID & Location (DWR#)	Collection		Media (DW* WW* Other)	Drinking Water Compliance	Gross Alpha	Gross Beta	Total Uranium	Isotopic Uranium	Ra-226	Ra-228	Ra-226 + Ra-228, Combined	H-3	Gamma Spectroscopy	Sr-89/Sr-90	Radon in Water	Radon in Air
	Date	Time														
CH-CCR-M43-0420			GW						X	X	X					
CH-CCR-M46-0420	0520	5-5-20 1001	GW						X	X	X				64371	
CH-CCR-M50-0420	0520	5-6-20 1346	GW						X	X	X				64372	
CH-CCR-M51-0420	0520	5-6-20 1515	GW						X	X	X				64373	
CH-CCR-M64-0420	0520	5-6-20 0813	GW						X	X	X				64374	
CH-CCR-M65-0420	0520	5-5-20 0816	GW						X	X	X				64375	
CH-CCR-M66-0420	0520	5-5-20 1246	GW						X	X	X				64376	
CH-CCR-M67-0420	0520	5-5-20 1122	GW						X	X	X				64377	
CH-CCR-W123-0420	0520	5-6-20 1114	GW						X	X	X				64378	

Sample Receipt		Invoice to:		Instructions/Comments	
Total No. of Containers				Method HPGe	
Chain of Custody Seals					
Container Condition					
Lab No.					

Relinquished By:		Received By:		Company:		Date/time:	
RMS		RSE		RSE		5-8-20	
Relinquished By:		Received By:		Company:		Date/time:	
Relinquished By:		Received By:		Company:		Date/time:	

1:05

* DW = Drinking Water, WW = Waste Water, GW = Groundwater.

u/client/forms/cofc.frm

Sample ID changes made per Natalie Chrisman Lazarr (see attached email) 6/24

ANALYTICAL REPORT

Eurofins TestAmerica, Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-151754-2

Client Project/Site: CCR Groundwater Monitoring

For:

Arizona Public Service Company
County Road 6675, Stn 4915
Fruitland, New Mexico 87416

Attn: Natalie Chrisman



Authorized for release by:
12/30/2020 4:16:04 PM

Ken Baker, Project Manager II
(602)659-7624
Ken.Baker@Eurofinset.com

LINKS

Review your project
results through

TotalAccess

Have a Question?



Visit us at:

www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Sample Summary	5
Detection Summary	6
Client Sample Results	7
QC Sample Results	8
QC Association Summary	9
Lab Chronicle	10
Certification Summary	11
Method Summary	12
Chain of Custody	13
Receipt Checklists	15



Definitions/Glossary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-2

Qualifiers

Metals

Qualifier	Qualifier Description
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-2

Job ID: 550-151754-2

Laboratory: Eurofins TestAmerica, Phoenix

Narrative

Job Narrative 550-151754-2

Comments

This report contains the re-digested/re-analysis for Molybdenum by Method 200.8 for Sample 550-151754-10.

Receipt

The samples were received on 10/26/2020 2:25 PM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.7° C, 2.7° C and 3.5° C.

Receipt Exceptions

One of the vials for DOC got bumped during labeling and broke.

CH-CCR-M50-1020 (550-151754-5).

2 of the vials for DOC were broken in the plastic wrap. CH-CCR-M65-1020 (550-151754-11).

CH-CCR-M44D-1020 (550-151754-1), CH-CCR-M46-1020 (550-151754-2), CH-CCR-M50-1020 (550-151754-4), CH-CCR-M50-1020 (550-151754-5), CH-CCR-M51-1020 (550-151754-6), CH-CCR-M64-1020 (550-151754-8), CH-CCR-M65-1020 (550-151754-10), CH-CCR-M66-1020 (550-151754-12), CH-CCR-M67-1020 (550-151754-14), CH-CCR-W123-1020 (550-151754-16), CH-CCR-W125-1020 (550-151754-18), CH-CCR-W126-1020 (550-151754-19) and CH-CCR-FD05-1020 (550-151754-21)

Containers received with about 75mL in containers.

Metals

Method 200.8 LL: The following sample(s) required confirmation (CON) due to clients request. Sample was re-digested in duplicate and confirmation result confirmed the original result: CH-CCR-M65-1020 (550-151754-10).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
550-151754-10	CH-CCR-M65-1020	Water	10/25/20 14:12	10/26/20 14:25	

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-2

Client Sample ID: CH-CCR-M65-1020

Lab Sample ID: 550-151754-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Molybdenum	0.22		0.00050	0.00020	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.22		0.00050	0.00020	mg/L	1		200.8 LL	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-2

Client Sample ID: CH-CCR-M65-1020

Lab Sample ID: 550-151754-10

Date Collected: 10/25/20 14:12

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Molybdenum	0.22		0.00050	0.00020	mg/L		12/24/20 08:37	12/29/20 16:12	1
Molybdenum	0.22		0.00050	0.00020	mg/L		12/24/20 08:37	12/29/20 16:12	1

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-2

Method: 200.8 LL - Metals (ICP/MS)

Lab Sample ID: MB 550-228985/1-A

Matrix: Water

Analysis Batch: 229350

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 228985

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Molybdenum	ND	E8	0.00050	0.00020	mg/L		12/24/20 08:37	12/29/20 15:59	1

Lab Sample ID: LCS 550-228985/2-A

Matrix: Water

Analysis Batch: 229350

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 228985

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Molybdenum	0.100	0.0918		mg/L		92	85 - 115

Lab Sample ID: LCSD 550-228985/3-A

Matrix: Water

Analysis Batch: 229350

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 228985

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Molybdenum	0.100	0.0977		mg/L		98	85 - 115	6	20

Lab Sample ID: 550-155197-A-1-A MS

Matrix: Water

Analysis Batch: 229350

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 228985

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Molybdenum	ND	E8	0.100	0.0963		mg/L		96	70 - 130

Lab Sample ID: 550-155197-A-1-B MSD

Matrix: Water

Analysis Batch: 229350

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 228985

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Molybdenum	ND	E8	0.100	0.0925		mg/L		93	70 - 130	4	20

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-2

Metals

Prep Batch: 228985

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-10	CH-CCR-M65-1020	Total/NA	Water	200.8	
MB 550-228985/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-228985/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-228985/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-155197-A-1-A MS	Matrix Spike	Total/NA	Water	200.8	
550-155197-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.8	

Analysis Batch: 229350

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151754-10	CH-CCR-M65-1020	Total/NA	Water	200.8 LL	228985
MB 550-228985/1-A	Method Blank	Total/NA	Water	200.8 LL	228985
LCS 550-228985/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	228985
LCSD 550-228985/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	228985
550-155197-A-1-A MS	Matrix Spike	Total/NA	Water	200.8 LL	228985
550-155197-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	200.8 LL	228985

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-2

Client Sample ID: CH-CCR-M65-1020

Lab Sample ID: 550-151754-10

Date Collected: 10/25/20 14:12

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.8			228985	12/24/20 08:37	SXF	TAL PHX
Total/NA	Analysis	200.8 LL		1	229350	12/29/20 16:12	ARE	TAL PHX

Laboratory References:

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-2

Laboratory: Eurofins TestAmerica, Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-08-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
200.8 LL	200.8	Water	Molybdenum

Method Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151754-2

Method	Method Description	Protocol	Laboratory
200.8 LL	Metals (ICP/MS)	EPA	TAL PHX
200.8	Preparation, Total Metals	EPA	TAL PHX

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

TestAmerica Phoenix

4625 E Cotton Center Blvd
Suite 189
Phoenix, AZ 85004
phone 602.437.3340 fax 602.454.9303



550-151754 Chain of Custody

Chain of Custody Record

☐ DW ☐ NPDES ☐ RCRA ☒ Other: CCR

151754

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact

Natalie Chrisman
(602) 250-3608

Lab Contact: Ken Baker
(928) 288-1241

Date:

COC No: 1 of 2 COCs

Analysis Turnaround Time

☐ CALENDAR DAYS ☒ WORKING DAYS

TAT if different from Below

☒ 2 weeks
☐ 1 week
☐ 2 days
☐ 1 day

Project Name: CCR Groundwater Monitoring

Site: APS Cholla Power Plant (FAP)

Project #:

Sample Identification

Sample Date

Sample Time

Sample Type
(C=Comp, G=Grab)

Matrix

of Cont.

Filtered Sample (Y / N)

Perform MS / MSD (Y / N)

EPA 300.0 (Cl, F, SO4)

EPA 200.7 - Totals (B, Ca, Be, Li, Fe, Mn)

EPA 200.7 - Dissolved (Fe, Mn)

EPA 200.8 - Totals (Sb, As, Ba, Cd, Co, Cr, Pb, Mo, Se, Ti)

EPA 200.8 - Dissolved (As, Co)

EPA 245.1 - Totals (Hg)

SM 4500-HB (pH)

SM 2540C (TDS)

SM 5310B (TOC, DOC)

SM 4500D (NH3 as N)

SM 4500E/B (NO3+NO2 as N)

EPA 200.7 - Totals (B, Ca, Be, Li)

Carrier:

Sampler:

For Lab Use Only:

Walk-in Client:

Lab Sampling:

Job / SDG No.:

Sample Specific Notes:

CH-CCR-M44D-1020	10/24/20	13:53	G	W	2	N	N	X																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Special Instructions/QC Requirements & Comments: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Return to Client ☒ Disposal by Lab ☐ Archive for Months

Perform Method 200.8 with collision cell. * As marked on the bottle, perform dissolved analyses with sample provided in bottles marked 'field filtered'

Cooler Temp. (°C): Obs'd: Corr'd: Therm ID No.:

Custody Seals Intact: ☐ Yes ☐ No

Relinquished by: Company: Date/Time: Received by: Company: Date/Time:

Relinquished by: Company: Date/Time: Received by: Company: Date/Time:

Relinquished by: Company: Date/Time: Received by: Company: Date/Time:

Form No. CA-C-WI-002, Rev. 4.2, dated 04/02/2013

Login Sample Receipt Checklist

Client: Arizona Public Service Company

Job Number: 550-151754-2

Login Number: 151754

List Source: Eurofins TestAmerica, Phoenix

List Number: 1

Creator: Maycock, Lisa

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

ANALYTICAL REPORT

Eurofins TestAmerica, Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-151756-1

Client Project/Site: CCR Groundwater Monitoring
Revision: 1

For:

Arizona Public Service Company
PO BOX 188, Ste. 4458
Joseph City, Arizona 86032

Attn: Natalie Chrisman



Authorized for release by:
12/4/2020 1:51:02 PM

Ken Baker, Project Manager II
(602)659-7624

Ken.Baker@Eurofinset.com

LINKS

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results through

TotalAccess

Have a Question?



Visit us at:

www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	5
Sample Summary	6
Detection Summary	7
Client Sample Results	9
QC Sample Results	13
QC Association Summary	21
Lab Chronicle	25
Certification Summary	28
Method Summary	29
Chain of Custody	30
Receipt Checklists	32



Definitions/Glossary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151756-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
D5	Minimum Reporting Limit (MRL) adjusted due to sample dilution; analyte was non-detect in the sample.
M1	Matrix spike recovery was high, the associated blank spike recovery was acceptable.

Metals

Qualifier	Qualifier Description
B3	Target analyte detected in calibration blank at or above the method reporting limit.
D1	Sample required dilution due to matrix.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above MDL.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
M1	Matrix spike recovery was high, the associated blank spike recovery was acceptable.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.

General Chemistry

Qualifier	Qualifier Description
D2	Sample required dilution due to high concentration of analyte.
H5	This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)

Eurofins TestAmerica, Phoenix

Definitions/Glossary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151756-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

1

2

3

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Case Narrative

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151756-1

Job ID: 550-151756-1

Laboratory: Eurofins TestAmerica, Phoenix

Narrative

Job Narrative 550-151756-1

Comments

This report contains Cobalt reported from the 200.7 analysis.

Receipt

The samples were received on 10/26/2020 2:25 PM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.7° C.

Receipt Exceptions

CH-CCR-M56-1020 (550-151756-1), CH-CCR-M57-1020 (550-151756-2), CH-CCR-M58-1020 (550-151756-3), CH-CCR-M62-1020 (550-151756-4) and CH-CCR-FD02-1020 (550-151756-5)

Containers received with about 75mL in containers.

HPLC/IC

Method 300.0: The following samples were diluted for Fluoride due to the nature of the samples matrix: CH-CCR-M56-1020 (550-151756-1), CH-CCR-M57-1020 (550-151756-2), CH-CCR-M58-1020 (550-151756-3), CH-CCR-M62-1020 (550-151756-4) and CH-CCR-FD02-1020 (550-151756-5). This analyte was not detected in the diluted samples. Elevated reporting limits (RLs) have been provided.

Method 300.0: The following samples were diluted for Sulfate due to the nature of the samples matrix: (550-151757-C-5 ^200) and (550-151757-C-5 DU ^200). This analyte was not detected in the diluted sample. An elevated reporting limit (RL) has been provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method 200.7 Rev 4.4: The continuing calibration blank (CCB) for analytical batch 550-224589 contained Beryllium above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151756-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
550-151756-1	CH-CCR-M56-1020	Water	10/21/20 08:18	10/26/20 14:25	
550-151756-2	CH-CCR-M57-1020	Water	10/21/20 09:25	10/26/20 14:25	
550-151756-3	CH-CCR-M58-1020	Water	10/21/20 10:19	10/26/20 14:25	
550-151756-4	CH-CCR-M62-1020	Water	10/20/20 16:48	10/26/20 14:25	
550-151756-5	CH-CCR-FD02-1020	Water	10/21/20 08:18	10/26/20 14:25	

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151756-1

Client Sample ID: CH-CCR-M56-1020

Lab Sample ID: 550-151756-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1900	D2	400		mg/L	200		300.0	Total/NA
Sulfate	940	D2	400		mg/L	200		300.0	Total/NA
Beryllium	0.000070	B3 E4	0.0010	0.000067	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.097		0.020		mg/L	1		200.7 Rev 4.4	Total/NA
Boron	0.37		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	300		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0044	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Barium	0.050	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Chromium	0.0041		0.0020		mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0080		0.0010		mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	4300	D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	8.0	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: CH-CCR-M57-1020

Lab Sample ID: 550-151756-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1800	D2	400		mg/L	200		300.0	Total/NA
Sulfate	1100	D2	400		mg/L	200		300.0	Total/NA
Lithium	0.092		0.020		mg/L	1		200.7 Rev 4.4	Total/NA
Boron	0.41		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	380		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Cobalt	0.0015	E4	0.010	0.00066	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0061	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Barium	0.046	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Chromium	0.16		0.0020		mg/L	2		200.8 LL	Total/NA
Cobalt	0.0028		0.0010		mg/L	2		200.8 LL	Total/NA
Molybdenum	0.018		0.0010		mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	4500	D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	7.8	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: CH-CCR-M58-1020

Lab Sample ID: 550-151756-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2100	D2	400		mg/L	200		300.0	Total/NA
Sulfate	540	D2	400		mg/L	200		300.0	Total/NA
Lithium	0.070		0.020		mg/L	1		200.7 Rev 4.4	Total/NA
Boron	0.21		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	300		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0066	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Barium	0.073	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0017		0.0010		mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	4300	D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.6	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	7.6	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: CH-CCR-M62-1020

Lab Sample ID: 550-151756-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2900	D2	400		mg/L	200		300.0	Total/NA
Sulfate	610	D2	400		mg/L	200		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151756-1

Client Sample ID: CH-CCR-M62-1020 (Continued)

Lab Sample ID: 550-151756-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Beryllium	0.00017	B3 E4	0.0010	0.000067	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.090		0.020		mg/L	1		200.7 Rev 4.4	Total/NA
Boron	0.20		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	440		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0048	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Barium	0.12	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Chromium	0.0059		0.0020		mg/L	2		200.8 LL	Total/NA
Cobalt	0.0011		0.0010		mg/L	2		200.8 LL	Total/NA
Lead	0.0020		0.0010		mg/L	2		200.8 LL	Total/NA
Molybdenum	0.015		0.0010		mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	5400	D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	8.6	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: CH-CCR-FD02-1020

Lab Sample ID: 550-151756-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1800	D2	400		mg/L	200		300.0	Total/NA
Sulfate	910	D2	400		mg/L	200		300.0	Total/NA
Lithium	0.097		0.020		mg/L	1		200.7 Rev 4.4	Total/NA
Boron	0.31		0.050	0.0025	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	300		2.0	0.013	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0021	D1	0.0020		mg/L	4		200.8 LL	Total/NA
Barium	0.049	D1	0.0010		mg/L	2		200.8 LL	Total/NA
Chromium	0.0026		0.0020		mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0076		0.0010		mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	4400	D2	100		mg/L	1		SM 2540C	Total/NA
pH	7.6	H5	1.7		SU	1		SM 4500 H+ B	Total/NA
Temperature	8.6	H5	0.1		Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151756-1

Client Sample ID: CH-CCR-M56-1020

Lab Sample ID: 550-151756-1

Date Collected: 10/21/20 08:18

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1900	D2	400		mg/L			10/27/20 19:09	200
Fluoride	ND	D1 D5	0.80		mg/L			10/27/20 18:50	2
Sulfate	940	D2	400		mg/L			10/27/20 19:09	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.000070	B3 E4	0.0010	0.000067	mg/L		10/28/20 10:12	11/03/20 15:11	1
Lithium	0.097		0.020		mg/L		11/16/20 15:50	11/18/20 13:10	1
Boron	0.37		0.050	0.0025	mg/L		10/28/20 10:12	11/03/20 15:11	1
Calcium	300		2.0	0.013	mg/L		10/28/20 10:12	11/03/20 15:11	1
Cobalt	ND	E8	0.010	0.00066	mg/L		10/28/20 10:12	11/03/20 15:11	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020		mg/L		11/02/20 09:46	11/12/20 22:05	2
Arsenic	0.0044	D1	0.0020		mg/L		11/02/20 09:46	11/30/20 14:46	4
Barium	0.050	D1	0.0010		mg/L		11/02/20 09:46	11/20/20 16:45	2
Cadmium	ND		0.00020		mg/L		11/02/20 09:46	11/12/20 22:05	2
Chromium	0.0041		0.0020		mg/L		11/02/20 09:46	11/12/20 22:05	2
Cobalt	ND		0.0010		mg/L		11/02/20 09:46	11/12/20 22:05	2
Lead	ND		0.0010		mg/L		11/02/20 09:46	11/12/20 22:05	2
Molybdenum	0.0080		0.0010		mg/L		11/02/20 09:46	11/12/20 22:05	2
Selenium	ND		0.0010		mg/L		11/02/20 09:46	11/12/20 22:05	2
Thallium	ND		0.00020		mg/L		11/02/20 09:46	11/12/20 22:05	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020		mg/L		10/27/20 18:23	10/28/20 15:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	4300	D2	100		mg/L			10/27/20 08:45	1
pH	7.5	H5	1.7		SU			11/02/20 18:00	1
Temperature	8.0	H5	0.1		Degrees C			11/02/20 18:00	1

Client Sample ID: CH-CCR-M57-1020

Lab Sample ID: 550-151756-2

Date Collected: 10/21/20 09:25

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1800	D2	400		mg/L			10/27/20 20:22	200
Fluoride	ND	D1 D5	0.80		mg/L			10/27/20 20:04	2
Sulfate	1100	D2	400		mg/L			10/27/20 20:22	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		10/28/20 10:12	11/03/20 15:14	1
Lithium	0.092		0.020		mg/L		11/16/20 15:50	11/18/20 13:27	1
Boron	0.41		0.050	0.0025	mg/L		10/28/20 10:12	11/03/20 15:14	1
Calcium	380		2.0	0.013	mg/L		10/28/20 10:12	11/03/20 15:14	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151756-1

Client Sample ID: CH-CCR-M57-1020

Lab Sample ID: 550-151756-2

Date Collected: 10/21/20 09:25

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.0015	E4	0.010	0.00066	mg/L		10/28/20 10:12	11/03/20 15:14	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020		mg/L		11/02/20 09:46	11/12/20 22:07	2
Arsenic	0.0061	D1	0.0020		mg/L		11/02/20 09:46	11/30/20 14:48	4
Barium	0.046	D1	0.0010		mg/L		11/02/20 09:46	11/20/20 16:47	2
Cadmium	ND		0.00020		mg/L		11/02/20 09:46	11/12/20 22:07	2
Chromium	0.16		0.0020		mg/L		11/02/20 09:46	11/12/20 22:07	2
Cobalt	0.0028		0.0010		mg/L		11/02/20 09:46	11/12/20 22:07	2
Lead	ND		0.0010		mg/L		11/02/20 09:46	11/12/20 22:07	2
Molybdenum	0.018		0.0010		mg/L		11/02/20 09:46	11/12/20 22:07	2
Selenium	ND		0.0010		mg/L		11/02/20 09:46	11/12/20 22:07	2
Thallium	ND		0.00020		mg/L		11/02/20 09:46	11/12/20 22:07	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020		mg/L		10/27/20 18:23	10/28/20 15:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	4500	D2	100		mg/L			10/27/20 08:45	1
pH	7.3	H5	1.7		SU			11/02/20 18:00	1
Temperature	7.8	H5	0.1		Degrees C			11/02/20 18:00	1

Client Sample ID: CH-CCR-M58-1020

Lab Sample ID: 550-151756-3

Date Collected: 10/21/20 10:19

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2100	D2	400		mg/L			10/27/20 20:59	200
Fluoride	ND	D1 D5	0.80		mg/L			10/27/20 20:41	2
Sulfate	540	D2	400		mg/L			10/27/20 20:59	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		10/28/20 10:12	11/03/20 15:18	1
Lithium	0.070		0.020		mg/L		11/16/20 15:50	11/18/20 13:30	1
Boron	0.21		0.050	0.0025	mg/L		10/28/20 10:12	11/03/20 15:18	1
Calcium	300		2.0	0.013	mg/L		10/28/20 10:12	11/03/20 15:18	1
Cobalt	ND	E8	0.010	0.00066	mg/L		10/28/20 10:12	11/03/20 15:18	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020		mg/L		11/02/20 09:46	11/12/20 22:09	2
Arsenic	0.0066	D1	0.0020		mg/L		11/02/20 09:46	11/30/20 14:51	4
Barium	0.073	D1	0.0010		mg/L		11/02/20 09:46	11/20/20 16:49	2
Cadmium	ND		0.00020		mg/L		11/02/20 09:46	11/12/20 22:09	2
Chromium	ND		0.0020		mg/L		11/02/20 09:46	11/12/20 22:09	2
Cobalt	ND		0.0010		mg/L		11/02/20 09:46	11/12/20 22:09	2

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151756-1

Client Sample ID: CH-CCR-M58-1020

Lab Sample ID: 550-151756-3

Date Collected: 10/21/20 10:19

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0010		mg/L		11/02/20 09:46	11/12/20 22:09	2
Molybdenum	0.0017		0.0010		mg/L		11/02/20 09:46	11/12/20 22:09	2
Selenium	ND		0.0010		mg/L		11/02/20 09:46	11/12/20 22:09	2
Thallium	ND		0.00020		mg/L		11/02/20 09:46	11/12/20 22:09	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020		mg/L		10/27/20 18:23	10/28/20 15:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	4300	D2	100		mg/L			10/27/20 08:45	1
pH	7.6	H5	1.7		SU			11/02/20 18:00	1
Temperature	7.6	H5	0.1		Degrees C			11/02/20 18:00	1

Client Sample ID: CH-CCR-M62-1020

Lab Sample ID: 550-151756-4

Date Collected: 10/20/20 16:48

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2900	D2	400		mg/L			10/27/20 21:36	200
Fluoride	ND	D1 D5	0.80		mg/L			10/27/20 21:18	2
Sulfate	610	D2	400		mg/L			10/27/20 21:36	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.00017	B3 E4	0.0010	0.000067	mg/L		10/28/20 10:12	11/03/20 15:22	1
Lithium	0.090		0.020		mg/L		11/16/20 15:50	11/18/20 13:40	1
Boron	0.20		0.050	0.0025	mg/L		10/28/20 10:12	11/03/20 15:22	1
Calcium	440		2.0	0.013	mg/L		10/28/20 10:12	11/03/20 15:22	1
Cobalt	ND	E8	0.010	0.00066	mg/L		10/28/20 10:12	11/03/20 15:22	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020		mg/L		11/02/20 09:46	11/12/20 22:11	2
Arsenic	0.0048	D1	0.0020		mg/L		11/02/20 09:46	11/30/20 14:53	4
Barium	0.12	D1	0.0010		mg/L		11/02/20 09:46	11/20/20 16:51	2
Cadmium	ND		0.00020		mg/L		11/02/20 09:46	11/12/20 22:11	2
Chromium	0.0059		0.0020		mg/L		11/02/20 09:46	11/12/20 22:11	2
Cobalt	0.0011		0.0010		mg/L		11/02/20 09:46	11/12/20 22:11	2
Lead	0.0020		0.0010		mg/L		11/02/20 09:46	11/12/20 22:11	2
Molybdenum	0.015		0.0010		mg/L		11/02/20 09:46	11/12/20 22:11	2
Selenium	ND		0.0010		mg/L		11/02/20 09:46	11/12/20 22:11	2
Thallium	ND		0.00020		mg/L		11/02/20 09:46	11/12/20 22:11	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020		mg/L		10/27/20 18:23	10/28/20 15:18	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151756-1

Client Sample ID: CH-CCR-M62-1020

Lab Sample ID: 550-151756-4

Date Collected: 10/20/20 16:48

Matrix: Water

Date Received: 10/26/20 14:25

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	5400	D2	100		mg/L			10/27/20 08:45	1
pH	7.4	H5	1.7		SU			11/02/20 18:00	1
Temperature	8.6	H5	0.1		Degrees C			11/02/20 18:00	1

Client Sample ID: CH-CCR-FD02-1020

Lab Sample ID: 550-151756-5

Date Collected: 10/21/20 08:18

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1800	D2	400		mg/L			10/27/20 22:13	200
Fluoride	ND	D1 D5	0.80		mg/L			10/27/20 21:54	2
Sulfate	910	D2	400		mg/L			10/27/20 22:13	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND	E8	0.0010	0.000067	mg/L		10/28/20 10:12	11/03/20 15:26	1
Lithium	0.097		0.020		mg/L		11/16/20 15:50	11/18/20 13:43	1
Boron	0.31		0.050	0.0025	mg/L		10/28/20 10:12	11/03/20 15:26	1
Calcium	300		2.0	0.013	mg/L		10/28/20 10:12	11/03/20 15:26	1
Cobalt	ND	E8	0.010	0.00066	mg/L		10/28/20 10:12	11/03/20 15:26	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020		mg/L		11/02/20 09:46	11/12/20 22:13	2
Arsenic	0.0021	D1	0.0020		mg/L		11/02/20 09:46	11/30/20 14:55	4
Barium	0.049	D1	0.0010		mg/L		11/02/20 09:46	11/20/20 16:53	2
Cadmium	ND		0.00020		mg/L		11/02/20 09:46	11/12/20 22:13	2
Chromium	0.0026		0.0020		mg/L		11/02/20 09:46	11/12/20 22:13	2
Cobalt	ND		0.0010		mg/L		11/02/20 09:46	11/12/20 22:13	2
Lead	ND		0.0010		mg/L		11/02/20 09:46	11/12/20 22:13	2
Molybdenum	0.0076		0.0010		mg/L		11/02/20 09:46	11/12/20 22:13	2
Selenium	ND		0.0010		mg/L		11/02/20 09:46	11/12/20 22:13	2
Thallium	ND		0.00020		mg/L		11/02/20 09:46	11/12/20 22:13	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020		mg/L		10/27/20 18:23	10/28/20 15:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	4400	D2	100		mg/L			10/27/20 08:45	1
pH	7.6	H5	1.7		SU			11/02/20 18:00	1
Temperature	8.6	H5	0.1		Degrees C			11/02/20 18:00	1

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151756-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-223927/2

Matrix: Water

Analysis Batch: 223927

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0		mg/L			10/27/20 12:38	1
Fluoride	ND		0.40		mg/L			10/27/20 12:38	1
Sulfate	ND		2.0		mg/L			10/27/20 12:38	1

Lab Sample ID: LCS 550-223927/5

Matrix: Water

Analysis Batch: 223927

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	21.9		mg/L		110	90 - 110
Fluoride	4.00	4.18		mg/L		105	90 - 110
Sulfate	20.0	21.2		mg/L		106	90 - 110

Lab Sample ID: LCSD 550-223927/6

Matrix: Water

Analysis Batch: 223927

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	22.0		mg/L		110	90 - 110	0	20
Fluoride	4.00	4.19		mg/L		105	90 - 110	0	20
Sulfate	20.0	21.1		mg/L		106	90 - 110	0	20

Lab Sample ID: 550-151757-C-5 MS ^2

Matrix: Water

Analysis Batch: 223927

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	1.5	M1 D1	8.00	11.4	D1 M1	mg/L		124	80 - 120

Lab Sample ID: 550-151757-C-5 MS ^200

Matrix: Water

Analysis Batch: 223927

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	1200	D2	4000	6010	D2	mg/L		120	80 - 120
Sulfate	ND	D1 D5	4000	4690	D2	mg/L		109	80 - 120

Lab Sample ID: 550-151757-C-5 MSD ^2

Matrix: Water

Analysis Batch: 223927

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	1.5	M1 D1	8.00	10.5	D1	mg/L		113	80 - 120	8	20

Lab Sample ID: 550-151757-C-5 MSD ^200

Matrix: Water

Analysis Batch: 223927

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	1200	D2	4000	5990	D2	mg/L		119	80 - 120	0	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151756-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-151757-C-5 MSD ^200

Matrix: Water

Analysis Batch: 223927

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	ND	D1 D5	4000	4660	D2	mg/L		108	80 - 120	1	20

Lab Sample ID: 550-151757-C-5 DU ^2

Matrix: Water

Analysis Batch: 223927

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	1.5	M1 D1	1.43	D1	mg/L		2	20

Lab Sample ID: 550-151757-C-5 DU ^200

Matrix: Water

Analysis Batch: 223927

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	1200	D2	1320	D2	mg/L		7	20
Sulfate	ND	D1 D5	ND	D1 D5	mg/L		6	20

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 550-223992/1-A

Matrix: Water

Analysis Batch: 224589

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 223992

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	0.000740	E4	0.0010	0.000067	mg/L		10/28/20 10:12	11/03/20 13:59	1
Boron	0.00509	E4	0.050	0.0025	mg/L		10/28/20 10:12	11/03/20 13:59	1
Calcium	0.0263	E4	2.0	0.013	mg/L		10/28/20 10:12	11/03/20 13:59	1
Cobalt	ND	E8	0.010	0.00066	mg/L		10/28/20 10:12	11/03/20 13:59	1

Lab Sample ID: LCS 550-223992/2-A

Matrix: Water

Analysis Batch: 224589

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 223992

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	1.00	0.946		mg/L		95	85 - 115
Boron	1.00	0.970		mg/L		97	85 - 115
Calcium	21.0	19.9		mg/L		95	85 - 115
Cobalt	1.00	0.964		mg/L		96	85 - 115

Lab Sample ID: LCSD 550-223992/3-A

Matrix: Water

Analysis Batch: 224589

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 223992

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Beryllium	1.00	0.892		mg/L		89	85 - 115	6	20
Boron	1.00	0.974		mg/L		97	85 - 115	0	20
Calcium	21.0	19.5		mg/L		93	85 - 115	2	20
Cobalt	1.00	0.930		mg/L		93	85 - 115	4	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151756-1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 550-151754-G-2-B MS

Matrix: Water

Analysis Batch: 224589

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 223992

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	ND	E8	1.00	1.03		mg/L		103	70 - 130
Boron	0.58		1.00	1.63		mg/L		105	70 - 130
Calcium	1300	M3	21.0	1230	M3	mg/L		-314	70 - 130
Cobalt	ND	E8	1.00	0.920		mg/L		92	70 - 130

Lab Sample ID: 550-151754-G-2-C MSD

Matrix: Water

Analysis Batch: 224589

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 223992

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Beryllium	ND	E8	1.00	1.02		mg/L		102	70 - 130	1	20
Boron	0.58		1.00	1.57		mg/L		99	70 - 130	3	20
Calcium	1300	M3	21.0	1230	M3	mg/L		-292	70 - 130	0	20
Cobalt	ND	E8	1.00	0.890		mg/L		89	70 - 130	3	20

Lab Sample ID: MB 280-516839/1-A

Matrix: Water

Analysis Batch: 517127

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 516839

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.020		mg/L		11/16/20 15:50	11/17/20 18:09	1

Lab Sample ID: LCS 280-516839/2-A

Matrix: Water

Analysis Batch: 517127

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 516839

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	1.12		mg/L		112	90 - 112

Lab Sample ID: 550-151756-3 MS

Matrix: Water

Analysis Batch: 517283

Client Sample ID: CH-CCR-M58-1020

Prep Type: Total/NA

Prep Batch: 516839

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	0.070		1.00	1.09		mg/L		102	70 - 130

Lab Sample ID: 550-151756-3 MSD

Matrix: Water

Analysis Batch: 517283

Client Sample ID: CH-CCR-M58-1020

Prep Type: Total/NA

Prep Batch: 516839

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Lithium	0.070		1.00	1.12		mg/L		105	70 - 130	3	20

Lab Sample ID: 550-151756-5 MS

Matrix: Water

Analysis Batch: 517283

Client Sample ID: CH-CCR-FD02-1020

Prep Type: Total/NA

Prep Batch: 516839

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	0.097		1.00	1.11		mg/L		101	70 - 130

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151756-1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 550-151756-5 MSD

Matrix: Water

Analysis Batch: 517283

Client Sample ID: CH-CCR-FD02-1020

Prep Type: Total/NA

Prep Batch: 516839

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	0.097		1.00	1.10		mg/L		100	70 - 130	0	20

Method: 200.8 LL - Metals (ICP/MS)

Lab Sample ID: MB 550-224429/1-A

Matrix: Water

Analysis Batch: 225325

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 224429

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0010		mg/L		11/02/20 09:46	11/11/20 22:40	1
Cadmium	ND		0.00010		mg/L		11/02/20 09:46	11/11/20 22:40	1
Chromium	ND		0.0010		mg/L		11/02/20 09:46	11/11/20 22:40	1
Lead	ND		0.00050		mg/L		11/02/20 09:46	11/11/20 22:40	1
Molybdenum	ND		0.00050		mg/L		11/02/20 09:46	11/11/20 22:40	1
Thallium	ND		0.00010		mg/L		11/02/20 09:46	11/11/20 22:40	1

Lab Sample ID: MB 550-224429/1-A

Matrix: Water

Analysis Batch: 226261

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 224429

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.00050		mg/L		11/02/20 09:46	11/20/20 16:07	1

Lab Sample ID: MB 550-224429/1-A

Matrix: Water

Analysis Batch: 226827

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 224429

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.00050		mg/L		11/02/20 09:46	11/30/20 13:36	1
Selenium	ND		0.00050		mg/L		11/02/20 09:46	11/30/20 13:36	1

Lab Sample ID: LCS 550-224429/2-A

Matrix: Water

Analysis Batch: 225325

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 224429

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.100	0.102		mg/L		102	85 - 115
Cadmium	0.100	0.100		mg/L		100	85 - 115
Chromium	0.100	0.101		mg/L		101	85 - 115
Lead	0.100	0.104		mg/L		104	85 - 115
Molybdenum	0.100	0.104		mg/L		104	85 - 115
Thallium	0.100	0.101		mg/L		101	85 - 115

Lab Sample ID: LCS 550-224429/2-A

Matrix: Water

Analysis Batch: 226261

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 224429

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	0.100	0.112		mg/L		112	85 - 115

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151756-1

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 550-224429/2-A

Matrix: Water

Analysis Batch: 226827

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 224429

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.104		mg/L		104	85 - 115
Selenium	0.100	0.107		mg/L		107	85 - 115

Lab Sample ID: LCSD 550-224429/3-A

Matrix: Water

Analysis Batch: 225325

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 224429

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Antimony	0.100	0.101		mg/L		101	85 - 115	0	20
Cadmium	0.100	0.102		mg/L		102	85 - 115	1	20
Chromium	0.100	0.102		mg/L		102	85 - 115	1	20
Lead	0.100	0.101		mg/L		101	85 - 115	2	20
Molybdenum	0.100	0.102		mg/L		102	85 - 115	2	20
Thallium	0.100	0.0995		mg/L		100	85 - 115	2	20

Lab Sample ID: LCSD 550-224429/3-A

Matrix: Water

Analysis Batch: 226261

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 224429

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Barium	0.100	0.113		mg/L		113	85 - 115	1	20

Lab Sample ID: LCSD 550-224429/3-A

Matrix: Water

Analysis Batch: 226827

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 224429

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Arsenic	0.100	0.105		mg/L		105	85 - 115	1	20
Selenium	0.100	0.108		mg/L		108	85 - 115	1	20

Lab Sample ID: 550-151754-G-19-D MS ^4

Matrix: Water

Analysis Batch: 225325

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 224429

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND		0.100	0.105		mg/L		105	70 - 130
Cadmium	ND		0.100	0.0955		mg/L		95	70 - 130
Chromium	0.011		0.100	0.110		mg/L		100	70 - 130
Lead	ND		0.100	0.0975		mg/L		98	70 - 130
Molybdenum	0.22		0.100	0.327		mg/L		111	70 - 130
Thallium	ND		0.100	0.0966		mg/L		96	70 - 130

Lab Sample ID: 550-151754-G-19-D MS ^4

Matrix: Water

Analysis Batch: 226261

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 224429

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND	M1 D1	0.100	0.205	M1	mg/L		204	70 - 130
Barium	0.018	M1 D1	0.100	0.248	M1	mg/L		230	70 - 130
Cadmium	ND	M1 D1	0.100	0.175	M1	mg/L		175	70 - 130

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151756-1

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: 550-151754-G-19-D MS ^4

Matrix: Water

Analysis Batch: 226261

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 224429

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.027	M1 D1	0.100	0.225	M1	mg/L		198	70 - 130
Cobalt	0.0083	M1 D1	0.100	0.197	M1	mg/L		189	70 - 130
Lead	ND	M1 D1	0.100	0.179	M1	mg/L		179	70 - 130
Molybdenum	0.42	M3 D1	0.100	0.622	M3	mg/L		205	70 - 130
Thallium	0.00045	M1 D1	0.100	0.184	M1	mg/L		184	70 - 130

Lab Sample ID: 550-151754-G-19-D MS ^4

Matrix: Water

Analysis Batch: 226827

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 224429

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.0020		0.100	0.110		mg/L		108	70 - 130
Selenium	0.0049		0.100	0.118		mg/L		113	70 - 130

Lab Sample ID: 550-151754-G-19-E MSD ^4

Matrix: Water

Analysis Batch: 225325

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 224429

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Antimony	ND		0.100	0.104		mg/L		104	70 - 130	1	20
Cadmium	ND		0.100	0.0928		mg/L		93	70 - 130	3	20
Chromium	0.011		0.100	0.113		mg/L		103	70 - 130	3	20
Lead	ND		0.100	0.0949		mg/L		95	70 - 130	3	20
Molybdenum	0.22		0.100	0.325		mg/L		109	70 - 130	1	20
Thallium	ND		0.100	0.0945		mg/L		94	70 - 130	2	20

Lab Sample ID: 550-151754-G-19-E MSD ^4

Matrix: Water

Analysis Batch: 226261

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 224429

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Antimony	ND	M1 D1	0.100	0.205	M1	mg/L		204	70 - 130	0	20
Barium	0.018	M1 D1	0.100	0.251	M1	mg/L		233	70 - 130	1	20
Cadmium	ND	M1 D1	0.100	0.176	M1	mg/L		176	70 - 130	0	20
Chromium	0.027	M1 D1	0.100	0.230	M1	mg/L		203	70 - 130	2	20
Cobalt	0.0083	M1 D1	0.100	0.197	M1	mg/L		189	70 - 130	0	20
Lead	ND	M1 D1	0.100	0.180	M1	mg/L		180	70 - 130	1	20
Molybdenum	0.42	M3 D1	0.100	0.624	M3	mg/L		207	70 - 130	0	20
Thallium	0.00045	M1 D1	0.100	0.184	M1	mg/L		183	70 - 130	0	20

Lab Sample ID: 550-151754-G-19-E MSD ^4

Matrix: Water

Analysis Batch: 226827

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 224429

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Arsenic	0.0020		0.100	0.112		mg/L		110	70 - 130	2	20
Selenium	0.0049		0.100	0.118		mg/L		113	70 - 130	0	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151756-1

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 550-223922/1-A
Matrix: Water
Analysis Batch: 224045

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 223922

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020		mg/L		10/27/20 18:23	10/28/20 15:06	1

Lab Sample ID: LCS 550-223922/2-A
Matrix: Water
Analysis Batch: 224045

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 223922

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Hg	0.00500	0.00475		mg/L		95	85 - 115

Lab Sample ID: LCSD 550-223922/3-A
Matrix: Water
Analysis Batch: 224045

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 223922

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hg	0.00500	0.00501		mg/L		100	85 - 115	5	20

Lab Sample ID: 550-151756-1 MS
Matrix: Water
Analysis Batch: 224045

Client Sample ID: CH-CCR-M56-1020
Prep Type: Total/NA
Prep Batch: 223922

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Hg	ND		0.00500	0.00508		mg/L		102	70 - 130

Lab Sample ID: 550-151756-1 MSD
Matrix: Water
Analysis Batch: 224045

Client Sample ID: CH-CCR-M56-1020
Prep Type: Total/NA
Prep Batch: 223922

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hg	ND		0.00500	0.00496		mg/L		99	70 - 130	2	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 550-223835/1
Matrix: Water
Analysis Batch: 223835

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		20		mg/L			10/27/20 08:45	1

Lab Sample ID: LCS 550-223835/2
Matrix: Water
Analysis Batch: 223835

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	970		mg/L		97	90 - 110

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151756-1

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCSD 550-223835/3

Matrix: Water

Analysis Batch: 223835

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	1000	954		mg/L		95	90 - 110	2	10

Lab Sample ID: 550-151757-D-5 DU

Matrix: Water

Analysis Batch: 223835

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	2900	D2	2670	D2	mg/L				8	10

Method: SM 4500 H+ B - pH

Lab Sample ID: LCSSRM 550-224480/1

Matrix: Water

Analysis Batch: 224480

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
pH	7.00	7.0		SU		100.3	98.5 - 101.5		

Lab Sample ID: LCSSRM 550-224480/13

Matrix: Water

Analysis Batch: 224480

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
pH	7.00	7.1		SU		101.3	98.5 - 101.5		

Lab Sample ID: 550-151754-A-18 DU

Matrix: Water

Analysis Batch: 224480

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
pH	7.5	H5	7.5	H5	SU				0.3	5
Temperature	7.9	H5	7.3	H5	Degrees C				8	

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151756-1

HPLC/IC

Analysis Batch: 223927

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151756-1	CH-CCR-M56-1020	Total/NA	Water	300.0	
550-151756-1	CH-CCR-M56-1020	Total/NA	Water	300.0	
550-151756-2	CH-CCR-M57-1020	Total/NA	Water	300.0	
550-151756-2	CH-CCR-M57-1020	Total/NA	Water	300.0	
550-151756-3	CH-CCR-M58-1020	Total/NA	Water	300.0	
550-151756-3	CH-CCR-M58-1020	Total/NA	Water	300.0	
550-151756-4	CH-CCR-M62-1020	Total/NA	Water	300.0	
550-151756-4	CH-CCR-M62-1020	Total/NA	Water	300.0	
550-151756-5	CH-CCR-FD02-1020	Total/NA	Water	300.0	
550-151756-5	CH-CCR-FD02-1020	Total/NA	Water	300.0	
MB 550-223927/2	Method Blank	Total/NA	Water	300.0	
LCS 550-223927/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-223927/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-151757-C-5 MS ^2	Matrix Spike	Total/NA	Water	300.0	
550-151757-C-5 MS ^200	Matrix Spike	Total/NA	Water	300.0	
550-151757-C-5 MSD ^2	Matrix Spike Duplicate	Total/NA	Water	300.0	
550-151757-C-5 MSD ^200	Matrix Spike Duplicate	Total/NA	Water	300.0	
550-151757-C-5 DU ^2	Duplicate	Total/NA	Water	300.0	
550-151757-C-5 DU ^200	Duplicate	Total/NA	Water	300.0	

Metals

Prep Batch: 223922

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151756-1	CH-CCR-M56-1020	Total/NA	Water	245.1	
550-151756-2	CH-CCR-M57-1020	Total/NA	Water	245.1	
550-151756-3	CH-CCR-M58-1020	Total/NA	Water	245.1	
550-151756-4	CH-CCR-M62-1020	Total/NA	Water	245.1	
550-151756-5	CH-CCR-FD02-1020	Total/NA	Water	245.1	
MB 550-223922/1-A	Method Blank	Total/NA	Water	245.1	
LCS 550-223922/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 550-223922/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	
550-151756-1 MS	CH-CCR-M56-1020	Total/NA	Water	245.1	
550-151756-1 MSD	CH-CCR-M56-1020	Total/NA	Water	245.1	

Prep Batch: 223992

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151756-1	CH-CCR-M56-1020	Total/NA	Water	200.7	
550-151756-2	CH-CCR-M57-1020	Total/NA	Water	200.7	
550-151756-3	CH-CCR-M58-1020	Total/NA	Water	200.7	
550-151756-4	CH-CCR-M62-1020	Total/NA	Water	200.7	
550-151756-5	CH-CCR-FD02-1020	Total/NA	Water	200.7	
MB 550-223992/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-223992/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-223992/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-151754-G-2-B MS	Matrix Spike	Total/NA	Water	200.7	
550-151754-G-2-C MSD	Matrix Spike Duplicate	Total/NA	Water	200.7	

Analysis Batch: 224045

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151756-1	CH-CCR-M56-1020	Total/NA	Water	245.1	223922

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151756-1

Metals (Continued)

Analysis Batch: 224045 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151756-2	CH-CCR-M57-1020	Total/NA	Water	245.1	223922
550-151756-3	CH-CCR-M58-1020	Total/NA	Water	245.1	223922
550-151756-4	CH-CCR-M62-1020	Total/NA	Water	245.1	223922
550-151756-5	CH-CCR-FD02-1020	Total/NA	Water	245.1	223922
MB 550-223922/1-A	Method Blank	Total/NA	Water	245.1	223922
LCS 550-223922/2-A	Lab Control Sample	Total/NA	Water	245.1	223922
LCSD 550-223922/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	223922
550-151756-1 MS	CH-CCR-M56-1020	Total/NA	Water	245.1	223922
550-151756-1 MSD	CH-CCR-M56-1020	Total/NA	Water	245.1	223922

Prep Batch: 224429

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151756-1	CH-CCR-M56-1020	Total/NA	Water	200.8	
550-151756-2	CH-CCR-M57-1020	Total/NA	Water	200.8	
550-151756-3	CH-CCR-M58-1020	Total/NA	Water	200.8	
550-151756-4	CH-CCR-M62-1020	Total/NA	Water	200.8	
550-151756-5	CH-CCR-FD02-1020	Total/NA	Water	200.8	
MB 550-224429/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-224429/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-224429/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-151754-G-19-D MS ^4	Matrix Spike	Total/NA	Water	200.8	
550-151754-G-19-E MSD ^4	Matrix Spike Duplicate	Total/NA	Water	200.8	

Analysis Batch: 224589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151756-1	CH-CCR-M56-1020	Total/NA	Water	200.7 Rev 4.4	223992
550-151756-2	CH-CCR-M57-1020	Total/NA	Water	200.7 Rev 4.4	223992
550-151756-3	CH-CCR-M58-1020	Total/NA	Water	200.7 Rev 4.4	223992
550-151756-4	CH-CCR-M62-1020	Total/NA	Water	200.7 Rev 4.4	223992
550-151756-5	CH-CCR-FD02-1020	Total/NA	Water	200.7 Rev 4.4	223992
MB 550-223992/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	223992
LCS 550-223992/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	223992
LCSD 550-223992/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	223992
550-151754-G-2-B MS	Matrix Spike	Total/NA	Water	200.7 Rev 4.4	223992
550-151754-G-2-C MSD	Matrix Spike Duplicate	Total/NA	Water	200.7 Rev 4.4	223992

Analysis Batch: 225325

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 550-224429/1-A	Method Blank	Total/NA	Water	200.8 LL	224429
LCS 550-224429/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	224429
LCSD 550-224429/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	224429
550-151754-G-19-D MS ^4	Matrix Spike	Total/NA	Water	200.8 LL	224429
550-151754-G-19-E MSD ^4	Matrix Spike Duplicate	Total/NA	Water	200.8 LL	224429

Analysis Batch: 225481

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151756-1	CH-CCR-M56-1020	Total/NA	Water	200.8 LL	224429
550-151756-2	CH-CCR-M57-1020	Total/NA	Water	200.8 LL	224429
550-151756-3	CH-CCR-M58-1020	Total/NA	Water	200.8 LL	224429
550-151756-4	CH-CCR-M62-1020	Total/NA	Water	200.8 LL	224429
550-151756-5	CH-CCR-FD02-1020	Total/NA	Water	200.8 LL	224429

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151756-1

Metals

Analysis Batch: 226261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151756-1	CH-CCR-M56-1020	Total/NA	Water	200.8 LL	224429
550-151756-2	CH-CCR-M57-1020	Total/NA	Water	200.8 LL	224429
550-151756-3	CH-CCR-M58-1020	Total/NA	Water	200.8 LL	224429
550-151756-4	CH-CCR-M62-1020	Total/NA	Water	200.8 LL	224429
550-151756-5	CH-CCR-FD02-1020	Total/NA	Water	200.8 LL	224429
MB 550-224429/1-A	Method Blank	Total/NA	Water	200.8 LL	224429
LCS 550-224429/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	224429
LCSD 550-224429/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	224429
550-151754-G-19-D MS ^4	Matrix Spike	Total/NA	Water	200.8 LL	224429
550-151754-G-19-E MSD ^4	Matrix Spike Duplicate	Total/NA	Water	200.8 LL	224429

Analysis Batch: 226827

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 550-224429/1-A	Method Blank	Total/NA	Water	200.8 LL	224429
LCS 550-224429/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	224429
LCSD 550-224429/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	224429
550-151754-G-19-D MS ^4	Matrix Spike	Total/NA	Water	200.8 LL	224429
550-151754-G-19-E MSD ^4	Matrix Spike Duplicate	Total/NA	Water	200.8 LL	224429

Analysis Batch: 226839

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151756-1	CH-CCR-M56-1020	Total/NA	Water	200.8 LL	224429
550-151756-2	CH-CCR-M57-1020	Total/NA	Water	200.8 LL	224429
550-151756-3	CH-CCR-M58-1020	Total/NA	Water	200.8 LL	224429
550-151756-4	CH-CCR-M62-1020	Total/NA	Water	200.8 LL	224429
550-151756-5	CH-CCR-FD02-1020	Total/NA	Water	200.8 LL	224429

Prep Batch: 516839

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151756-1	CH-CCR-M56-1020	Total/NA	Water	200.7	
550-151756-2	CH-CCR-M57-1020	Total/NA	Water	200.7	
550-151756-3	CH-CCR-M58-1020	Total/NA	Water	200.7	
550-151756-4	CH-CCR-M62-1020	Total/NA	Water	200.7	
550-151756-5	CH-CCR-FD02-1020	Total/NA	Water	200.7	
MB 280-516839/1-A	Method Blank	Total/NA	Water	200.7	
LCS 280-516839/2-A	Lab Control Sample	Total/NA	Water	200.7	
550-151756-3 MS	CH-CCR-M58-1020	Total/NA	Water	200.7	
550-151756-3 MSD	CH-CCR-M58-1020	Total/NA	Water	200.7	
550-151756-5 MS	CH-CCR-FD02-1020	Total/NA	Water	200.7	
550-151756-5 MSD	CH-CCR-FD02-1020	Total/NA	Water	200.7	

Analysis Batch: 517127

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-516839/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	516839
LCS 280-516839/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	516839

Analysis Batch: 517283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151756-1	CH-CCR-M56-1020	Total/NA	Water	200.7 Rev 4.4	516839
550-151756-2	CH-CCR-M57-1020	Total/NA	Water	200.7 Rev 4.4	516839
550-151756-3	CH-CCR-M58-1020	Total/NA	Water	200.7 Rev 4.4	516839

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151756-1

Metals (Continued)

Analysis Batch: 517283 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151756-4	CH-CCR-M62-1020	Total/NA	Water	200.7 Rev 4.4	516839
550-151756-5	CH-CCR-FD02-1020	Total/NA	Water	200.7 Rev 4.4	516839
550-151756-3 MS	CH-CCR-M58-1020	Total/NA	Water	200.7 Rev 4.4	516839
550-151756-3 MSD	CH-CCR-M58-1020	Total/NA	Water	200.7 Rev 4.4	516839
550-151756-5 MS	CH-CCR-FD02-1020	Total/NA	Water	200.7 Rev 4.4	516839
550-151756-5 MSD	CH-CCR-FD02-1020	Total/NA	Water	200.7 Rev 4.4	516839

General Chemistry

Analysis Batch: 223835

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151756-1	CH-CCR-M56-1020	Total/NA	Water	SM 2540C	
550-151756-2	CH-CCR-M57-1020	Total/NA	Water	SM 2540C	
550-151756-3	CH-CCR-M58-1020	Total/NA	Water	SM 2540C	
550-151756-4	CH-CCR-M62-1020	Total/NA	Water	SM 2540C	
550-151756-5	CH-CCR-FD02-1020	Total/NA	Water	SM 2540C	
MB 550-223835/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-223835/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-223835/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-151757-D-5 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 224480

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151756-1	CH-CCR-M56-1020	Total/NA	Water	SM 4500 H+ B	
550-151756-2	CH-CCR-M57-1020	Total/NA	Water	SM 4500 H+ B	
550-151756-3	CH-CCR-M58-1020	Total/NA	Water	SM 4500 H+ B	
550-151756-4	CH-CCR-M62-1020	Total/NA	Water	SM 4500 H+ B	
550-151756-5	CH-CCR-FD02-1020	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-224480/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-224480/13	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
550-151754-A-18 DU	Duplicate	Total/NA	Water	SM 4500 H+ B	

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151756-1

Client Sample ID: CH-CCR-M56-1020

Lab Sample ID: 550-151756-1

Date Collected: 10/21/20 08:18

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	223927	10/27/20 18:50	RDC	TAL PHX
Total/NA	Analysis	300.0		200	223927	10/27/20 19:09	RDC	TAL PHX
Total/NA	Prep	200.7			223992	10/28/20 10:12	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224589	11/03/20 15:11	MGM	TAL PHX
Total/NA	Prep	200.7			516839	11/16/20 15:50	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517283	11/18/20 13:10	LMT	TAL DEN
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	225481	11/12/20 22:05	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226261	11/20/20 16:45	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	226839	11/30/20 14:46	ARE	TAL PHX
Total/NA	Prep	245.1			223922	10/27/20 18:23	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224045	10/28/20 15:14	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	223835		YET	TAL PHX
					(Start)	10/27/20 08:45		
					(End)	10/28/20 09:30		
Total/NA	Analysis	SM 4500 H+ B		1	224480	11/02/20 18:00	MRR	TAL PHX

Client Sample ID: CH-CCR-M57-1020

Lab Sample ID: 550-151756-2

Date Collected: 10/21/20 09:25

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	223927	10/27/20 20:04	RDC	TAL PHX
Total/NA	Analysis	300.0		200	223927	10/27/20 20:22	RDC	TAL PHX
Total/NA	Prep	200.7			223992	10/28/20 10:12	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224589	11/03/20 15:14	MGM	TAL PHX
Total/NA	Prep	200.7			516839	11/16/20 15:50	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517283	11/18/20 13:27	LMT	TAL DEN
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	225481	11/12/20 22:07	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226261	11/20/20 16:47	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	226839	11/30/20 14:48	ARE	TAL PHX
Total/NA	Prep	245.1			223922	10/27/20 18:23	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224045	10/28/20 15:15	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	223835		YET	TAL PHX
					(Start)	10/27/20 08:45		
					(End)	10/28/20 09:30		
Total/NA	Analysis	SM 4500 H+ B		1	224480	11/02/20 18:00	MRR	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151756-1

Client Sample ID: CH-CCR-M58-1020

Lab Sample ID: 550-151756-3

Date Collected: 10/21/20 10:19

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	223927	10/27/20 20:41	RDC	TAL PHX
Total/NA	Analysis	300.0		200	223927	10/27/20 20:59	RDC	TAL PHX
Total/NA	Prep	200.7			223992	10/28/20 10:12	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224589	11/03/20 15:18	MGM	TAL PHX
Total/NA	Prep	200.7			516839	11/16/20 15:50	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517283	11/18/20 13:30	LMT	TAL DEN
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	225481	11/12/20 22:09	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226261	11/20/20 16:49	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	226839	11/30/20 14:51	ARE	TAL PHX
Total/NA	Prep	245.1			223922	10/27/20 18:23	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224045	10/28/20 15:17	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	223835		YET	TAL PHX
					(Start)	10/27/20 08:45		
					(End)	10/28/20 09:30		
Total/NA	Analysis	SM 4500 H+ B		1	224480	11/02/20 18:00	MRR	TAL PHX

Client Sample ID: CH-CCR-M62-1020

Lab Sample ID: 550-151756-4

Date Collected: 10/20/20 16:48

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	223927	10/27/20 21:18	RDC	TAL PHX
Total/NA	Analysis	300.0		200	223927	10/27/20 21:36	RDC	TAL PHX
Total/NA	Prep	200.7			223992	10/28/20 10:12	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224589	11/03/20 15:22	MGM	TAL PHX
Total/NA	Prep	200.7			516839	11/16/20 15:50	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517283	11/18/20 13:40	LMT	TAL DEN
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	225481	11/12/20 22:11	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226261	11/20/20 16:51	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	226839	11/30/20 14:53	ARE	TAL PHX
Total/NA	Prep	245.1			223922	10/27/20 18:23	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224045	10/28/20 15:18	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	223835		YET	TAL PHX
					(Start)	10/27/20 08:45		
					(End)	10/28/20 09:30		
Total/NA	Analysis	SM 4500 H+ B		1	224480	11/02/20 18:00	MRR	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151756-1

Client Sample ID: CH-CCR-FD02-1020

Lab Sample ID: 550-151756-5

Date Collected: 10/21/20 08:18

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	223927	10/27/20 21:54	RDC	TAL PHX
Total/NA	Analysis	300.0		200	223927	10/27/20 22:13	RDC	TAL PHX
Total/NA	Prep	200.7			223992	10/28/20 10:12	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224589	11/03/20 15:26	MGM	TAL PHX
Total/NA	Prep	200.7			516839	11/16/20 15:50	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517283	11/18/20 13:43	LMT	TAL DEN
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	225481	11/12/20 22:13	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226261	11/20/20 16:53	ARE	TAL PHX
Total/NA	Prep	200.8			224429	11/02/20 09:46	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	226839	11/30/20 14:55	ARE	TAL PHX
Total/NA	Prep	245.1			223922	10/27/20 18:23	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224045	10/28/20 15:20	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	223835		YET	TAL PHX
					(Start)	10/27/20 08:45		
					(End)	10/28/20 09:30		
Total/NA	Analysis	SM 4500 H+ B		1	224480	11/02/20 18:00	MRR	TAL PHX

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151756-1

Laboratory: Eurofins TestAmerica, Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-08-21
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
200.8 LL	200.8	Water	Molybdenum
SM 4500 H+ B		Water	Temperature

Laboratory: Eurofins TestAmerica, Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-21
A2LA	ISO/IEC 17025	2907.01	10-31-21
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-08-21
Arizona	State	AZ0713	12-20-20
Arkansas DEQ	State	19-047-0	06-01-21
California	State	2513	01-08-21
Connecticut	State	PH-0686	09-30-20 *
Florida	NELAP	E87667-57	07-01-21
Georgia	State	4025-011	01-09-21
Illinois	NELAP	2000172019-1	04-30-21
Iowa	State	IA#370	12-01-20
Kansas	NELAP	E-10166	04-30-21
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-21
Maine	State	2019011 (231)	03-03-21
Minnesota	NELAP	1788752	12-31-20
Nevada	State	CO000262020-1	07-31-21
New Hampshire	NELAP	205319	04-29-21
New Jersey	NELAP	190002	06-30-21
New York	NELAP	59923	04-01-21
North Carolina (WW/SW)	State	358	12-31-20
North Dakota	State	R-034	01-08-21
Oklahoma	State	2018-006	09-01-21
Oregon	NELAP	4025-011	01-08-21
Pennsylvania	NELAP	013	07-31-21
South Carolina	State	72002001	01-08-21
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-20-18	09-30-21
US Fish & Wildlife	US Federal Programs	058448	08-01-21
USDA	US Federal Programs	P330-18-00099	03-26-21
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-21
Virginia	NELAP	10490	06-14-21
Washington	State	C583-19	08-03-21
West Virginia DEP	State	354	11-30-20
Wisconsin	State	999615430	08-31-21
Wyoming (UST)	A2LA	2907.01	10-31-21

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins TestAmerica, Phoenix

Method Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151756-1

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PHX
200.7 Rev 4.4	Metals (ICP)	EPA	TAL DEN
200.7 Rev 4.4	Metals (ICP)	40CFR136A	TAL PHX
200.8 LL	Metals (ICP/MS)	EPA	TAL PHX
245.1	Mercury (CVAA)	EPA	TAL PHX
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PHX
SM 4500 H+ B	pH	SM	TAL PHX
200.7	Preparation, Total Metals	EPA	TAL DEN
200.7	Preparation, Total Metals	EPA	TAL PHX
200.8	Preparation, Total Metals	EPA	TAL PHX
245.1	Preparation, Mercury	EPA	TAL PHX

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

TestAmerica Phoenix

4625 E Cotton Center Blvd
Suite 189
Phoenix, AZ 85040
phone 602.437.3340 fax 602.454.9303

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: ☐ DWP ☐ NPDES ☐ RCRA ☒ Other: CCR

151756

TestAmerica Laboratories, Inc.

Client Contact

Arizona Public Service
4801 Cholla Lake Rd
Joseph City, AZ 86032
(928) 587-0319
Phone
FAX
Project Name: CCR Groundwater Monitoring
Site: APS Cholla Power Plant (SEDI)
Project #:

Natalie Chrisman
(602) 250-3608

Analysis Turnaround Time

☐ CALENDAR DAYS
☒ WORKING DAYS
TAT if different from Below
☒ 2 weeks
☐ 1 week
☐ 2 days
☐ 1 day

Jim Edwards / (928) 288-1241
Lab Contact: Ken Baker

Date:

COC No:

1 of 1 COCs

Sampler:

For Lab Use Only:

Walk-in Client:

Lab Sampling:

Job / SDG No.:

Sample Identification

Sample Date

Sample Time

Sample Type
(C=Comp, G=Grab)

Matrix

of Cont.

Filtered Sample (Y / N)

Perform MS / MSD (Y / N)

EPA 300.0 (Cl, F, SO4)

EPA 200.7 - Totals (B, Ca, Be, Li)

SM 4500-HB (pH)

SM 2540C (TDS)

EPA 200.8 - Totals (Sb, As, Ba, Cd, Co, Cr, Pb, Mo, Se, Ti)

EPA 245.1 - Totals (Hg)

Sample Specific Notes:

1 CH-CCR-M56-1020

12/2/12 06:18 G W 2

12/2/12 06:18 G W 2

12/2/12 06:18 G W 2

12/2/12 06:18 G W 2

12/2/12 06:18 G W 2

12/2/12 06:18 G W 2

12/2/12 06:18 G W 2

12/2/12 06:18 G W 2

12/2/12 06:18 G W 2

2 CH-CCR-M57-1020

12/2/12 06:25 G W 2

12/2/12 06:25 G W 2

12/2/12 06:25 G W 2

12/2/12 06:25 G W 2

12/2/12 06:25 G W 2

12/2/12 06:25 G W 2

12/2/12 06:25 G W 2

12/2/12 06:25 G W 2

12/2/12 06:25 G W 2

3 CH-CCR-M58-1020

12/2/12 10:19 G W 2

12/2/12 10:19 G W 2

12/2/12 10:19 G W 2

12/2/12 10:19 G W 2

12/2/12 10:19 G W 2

12/2/12 10:19 G W 2

12/2/12 10:19 G W 2

12/2/12 10:19 G W 2

12/2/12 10:19 G W 2

4 CH-CCR-M62-1020

12/2/12 16:48 G W 2

12/2/12 16:48 G W 2

12/2/12 16:48 G W 2

12/2/12 16:48 G W 2

12/2/12 16:48 G W 2

12/2/12 16:48 G W 2

12/2/12 16:48 G W 2

12/2/12 16:48 G W 2

12/2/12 16:48 G W 2

5 CH-CCR-FD02-1020

12/2/12 20:18 G W 2

12/2/12 20:18 G W 2

12/2/12 20:18 G W 2

12/2/12 20:18 G W 2

12/2/12 20:18 G W 2

12/2/12 20:18 G W 2

12/2/12 20:18 G W 2

12/2/12 20:18 G W 2

12/2/12 20:18 G W 2

Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other

Possible Hazard Identification:

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Special Instructions/QC Requirements & Comments:

Method 200.8 with collision cell

Custody Seals Intact: ☐ Yes ☐ No

Relinquished by: *[Signature]*

Relinquished by: *[Signature]*

Relinquished by: *[Signature]*

Relinquished by: *[Signature]*

Relinquished by: *[Signature]*

Cooler Temp. (°C): Obs'd: *2.1°C*

Received by: *[Signature]*

Received by: *[Signature]*

Received by: *[Signature]*

Received by: *[Signature]*

Received by: *[Signature]*

Corr'd

Company: *[Signature]*

Company: *[Signature]*

Company: *[Signature]*

Company: *[Signature]*

Company: *[Signature]*

Therm ID No.:

Date/Time: *10/26/20 14:25*

Date/Time: *10/26/20 14:25*

Date/Time: *10/26/20 14:25*

Date/Time: *10/26/20 14:25*

Date/Time: *10/26/20 14:25*



550-151756 Chain of Custody

Login Sample Receipt Checklist

Client: Arizona Public Service Company

Job Number: 550-151756-1

Login Number: 151756

List Source: Eurofins TestAmerica, Phoenix

List Number: 1

Creator: Maycock, Lisa

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

Login Sample Receipt Checklist

Client: Arizona Public Service Company

Job Number: 550-151756-1

Login Number: 151756

List Number: 2

Creator: O'Hara, Jake F

List Source: Eurofins TestAmerica, Denver

List Creation: 11/14/20 05:28 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	False	Limited volume received.
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

Eurofins TestAmerica, Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-151757-1

Client Project/Site: CCR Groundwater Monitoring

For:

Arizona Public Service Company
PO BOX 188, Ste. 4458
Joseph City, Arizona 86032

Attn: Natalie Chrisman



Authorized for release by:
11/24/2020 10:26:46 AM

Ken Baker, Project Manager II
(602)659-7624
Ken.Baker@Eurofinset.com

LINKS

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results through

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www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Sample Summary	5
Detection Summary	6
Client Sample Results	8
QC Sample Results	10
QC Association Summary	16
Lab Chronicle	18
Certification Summary	20
Method Summary	21
Chain of Custody	22
Receipt Checklists	23



Definitions/Glossary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151757-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
E2	Concentration estimated. Analyte exceeded calibration range. Reanalysis not performed due to sample matrix.
M1	Matrix spike recovery was high, the associated blank spike recovery was acceptable.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.

General Chemistry

Qualifier	Qualifier Description
D2	Sample required dilution due to high concentration of analyte.
H5	This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151757-1

Job ID: 550-151757-1

Laboratory: Eurofins TestAmerica, Phoenix

Narrative

Job Narrative 550-151757-1

Comments

No additional comments.

Receipt

The samples were received on 10/26/2020 2:25 PM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 1.7° C.

Receipt Exceptions

Client indicated MS/MSD on both 1st and last samples on COC. Only the last sample had sufficient containers submitted for the MS/MSD. Did not log in MS/MSD for sample 1.

CH-CCR-M54-1020 (550-151757-1) and CH-CCR-FD01-1020 (550-151757-5)

HPLC/IC

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151757-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
550-151757-1	CH-CCR-M54-1020	Water	10/21/20 15:58	10/26/20 14:25	
550-151757-2	CH-CCR-M59-1020	Water	10/21/20 15:08	10/26/20 14:25	
550-151757-3	CH-CCR-M60-1020	Water	10/21/20 14:07	10/26/20 14:25	
550-151757-4	CH-CCR-M61-1020	Water	10/21/20 13:20	10/26/20 14:25	
550-151757-5	CH-CCR-FD01-1020	Water	10/21/20 14:07	10/26/20 14:25	

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151757-1

Client Sample ID: CH-CCR-M54-1020

Lab Sample ID: 550-151757-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1500	D2	200	mg/L	100		300.0	Total/NA
Fluoride	1.3		0.40	mg/L	1		300.0	Total/NA
Sulfate	350	D2	200	mg/L	100		300.0	Total/NA
Boron	0.48		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	92		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Total Dissolved Solids	2900	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	10.6	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: CH-CCR-M59-1020

Lab Sample ID: 550-151757-2

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1300	D2	200	mg/L	100		300.0	Total/NA
Fluoride	1.4		0.40	mg/L	1		300.0	Total/NA
Sulfate	340	D2	200	mg/L	100		300.0	Total/NA
Boron	0.48		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	85		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Total Dissolved Solids	2700	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	9.5	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: CH-CCR-M60-1020

Lab Sample ID: 550-151757-3

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1400	D2	200	mg/L	100		300.0	Total/NA
Fluoride	1.4		0.40	mg/L	1		300.0	Total/NA
Sulfate	340	D2	200	mg/L	100		300.0	Total/NA
Boron	0.48		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	82		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Total Dissolved Solids	2900	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	9.3	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: CH-CCR-M61-1020

Lab Sample ID: 550-151757-4

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1400	D2	200	mg/L	100		300.0	Total/NA
Fluoride	1.4		0.40	mg/L	1		300.0	Total/NA
Sulfate	350	D2	200	mg/L	100		300.0	Total/NA
Boron	0.48		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	88		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Total Dissolved Solids	2700	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	9.6	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: CH-CCR-FD01-1020

Lab Sample ID: 550-151757-5

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1200	D2	400	mg/L	200		300.0	Total/NA
Fluoride	1.5	D1 M1	0.80	mg/L	2		300.0	Total/NA
Sulfate	340	D2	100	mg/L	50		300.0	Total/NA
Boron	0.48		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	83		2.0	mg/L	1		200.7 Rev 4.4	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151757-1

Client Sample ID: CH-CCR-FD01-1020 (Continued)

Lab Sample ID: 550-151757-5

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	2900	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	10.0	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151757-1

Client Sample ID: CH-CCR-M54-1020

Lab Sample ID: 550-151757-1

Date Collected: 10/21/20 15:58

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1500	D2	200	mg/L			10/28/20 19:39	100
Fluoride	1.3		0.40	mg/L			10/28/20 19:21	1
Sulfate	350	D2	200	mg/L			10/28/20 19:39	100

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.48		0.050	mg/L		10/28/20 10:24	10/30/20 21:26	1
Calcium	92		2.0	mg/L		10/28/20 10:24	10/30/20 21:26	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2900	D2	100	mg/L			10/27/20 08:45	1
pH	7.3	H5	1.7	SU			10/30/20 12:30	1
Temperature	10.6	H5	0.1	Degrees C			10/30/20 12:30	1

Client Sample ID: CH-CCR-M59-1020

Lab Sample ID: 550-151757-2

Date Collected: 10/21/20 15:08

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1300	D2	200	mg/L			10/28/20 20:16	100
Fluoride	1.4		0.40	mg/L			10/28/20 19:58	1
Sulfate	340	D2	200	mg/L			10/28/20 20:16	100

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.48		0.050	mg/L		10/28/20 10:24	10/30/20 21:22	1
Calcium	85		2.0	mg/L		10/28/20 10:24	10/30/20 21:22	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2700	D2	100	mg/L			10/27/20 08:45	1
pH	7.5	H5	1.7	SU			10/30/20 12:30	1
Temperature	9.5	H5	0.1	Degrees C			10/30/20 12:30	1

Client Sample ID: CH-CCR-M60-1020

Lab Sample ID: 550-151757-3

Date Collected: 10/21/20 14:07

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1400	D2	200	mg/L			10/28/20 21:30	100
Fluoride	1.4		0.40	mg/L			10/28/20 21:11	1
Sulfate	340	D2	200	mg/L			10/28/20 21:30	100

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.48		0.050	mg/L		10/28/20 10:24	10/30/20 21:18	1
Calcium	82		2.0	mg/L		10/28/20 10:24	10/30/20 21:18	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151757-1

Client Sample ID: CH-CCR-M60-1020

Lab Sample ID: 550-151757-3

Date Collected: 10/21/20 14:07

Matrix: Water

Date Received: 10/26/20 14:25

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2900	D2	100	mg/L			10/27/20 08:45	1
pH	7.5	H5	1.7	SU			10/30/20 12:30	1
Temperature	9.3	H5	0.1	Degrees C			10/30/20 12:30	1

Client Sample ID: CH-CCR-M61-1020

Lab Sample ID: 550-151757-4

Date Collected: 10/21/20 13:20

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1400	D2	200	mg/L			10/28/20 22:07	100
Fluoride	1.4		0.40	mg/L			10/28/20 21:48	1
Sulfate	350	D2	200	mg/L			10/28/20 22:07	100

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.48		0.050	mg/L		10/28/20 10:24	10/30/20 21:14	1
Calcium	88		2.0	mg/L		10/28/20 10:24	10/30/20 21:14	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2700	D2	100	mg/L			10/27/20 08:45	1
pH	7.5	H5	1.7	SU			10/30/20 12:30	1
Temperature	9.6	H5	0.1	Degrees C			10/30/20 12:30	1

Client Sample ID: CH-CCR-FD01-1020

Lab Sample ID: 550-151757-5

Date Collected: 10/21/20 14:07

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1200	D2	400	mg/L			10/27/20 17:18	200
Fluoride	1.5	D1 M1	0.80	mg/L			10/27/20 16:23	2
Sulfate	340	D2	100	mg/L			11/07/20 18:45	50

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.48		0.050	mg/L		10/28/20 10:24	10/30/20 21:11	1
Calcium	83		2.0	mg/L		10/28/20 10:24	10/30/20 21:11	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	2900	D2	100	mg/L			10/27/20 08:45	1
pH	7.4	H5	1.7	SU			10/30/20 12:30	1
Temperature	10.0	H5	0.1	Degrees C			10/30/20 12:30	1

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151757-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-223927/2

Matrix: Water

Analysis Batch: 223927

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0	mg/L			10/27/20 12:38	1
Fluoride	ND		0.40	mg/L			10/27/20 12:38	1
Sulfate	ND		2.0	mg/L			10/27/20 12:38	1

Lab Sample ID: LCS 550-223927/5

Matrix: Water

Analysis Batch: 223927

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	21.9		mg/L		110	90 - 110
Fluoride	4.00	4.18		mg/L		105	90 - 110
Sulfate	20.0	21.2		mg/L		106	90 - 110

Lab Sample ID: LCSD 550-223927/6

Matrix: Water

Analysis Batch: 223927

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	22.0		mg/L		110	90 - 110	0	20
Fluoride	4.00	4.19		mg/L		105	90 - 110	0	20
Sulfate	20.0	21.1		mg/L		106	90 - 110	0	20

Lab Sample ID: 550-151757-5 MS

Matrix: Water

Analysis Batch: 223927

Client Sample ID: CH-CCR-FD01-1020

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	1.5	M1 D1	8.00	11.4	D1 M1	mg/L		124	80 - 120

Lab Sample ID: 550-151757-5 MS

Matrix: Water

Analysis Batch: 223927

Client Sample ID: CH-CCR-FD01-1020

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	1200	D2	4000	6010	D2	mg/L		120	80 - 120

Lab Sample ID: 550-151757-5 MSD

Matrix: Water

Analysis Batch: 223927

Client Sample ID: CH-CCR-FD01-1020

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	1.5	M1 D1	8.00	10.5	D1	mg/L		113	80 - 120	8	20

Lab Sample ID: 550-151757-5 MSD

Matrix: Water

Analysis Batch: 223927

Client Sample ID: CH-CCR-FD01-1020

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	1200	D2	4000	5990	D2	mg/L		119	80 - 120	NC	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151757-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-151757-5 DU

Matrix: Water

Analysis Batch: 223927

Client Sample ID: CH-CCR-FD01-1020

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	1.5	M1 D1	1.43	D1	mg/L		2	20

Lab Sample ID: 550-151757-5 DU

Matrix: Water

Analysis Batch: 223927

Client Sample ID: CH-CCR-FD01-1020

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	1200	D2	1320	D2	mg/L		7	20

Lab Sample ID: MB 550-224067/2

Matrix: Water

Analysis Batch: 224067

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0	mg/L			10/28/20 14:45	1
Fluoride	ND		0.40	mg/L			10/28/20 14:45	1
Sulfate	ND		2.0	mg/L			10/28/20 14:45	1

Lab Sample ID: LCS 550-224067/5

Matrix: Water

Analysis Batch: 224067

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	21.4		mg/L		107	90 - 110
Fluoride	4.00	4.08		mg/L		102	90 - 110
Sulfate	20.0	20.6		mg/L		103	90 - 110

Lab Sample ID: LCSD 550-224067/6

Matrix: Water

Analysis Batch: 224067

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	21.5		mg/L		107	90 - 110	0	20
Fluoride	4.00	4.07		mg/L		102	90 - 110	0	20
Sulfate	20.0	20.6		mg/L		103	90 - 110	0	20

Lab Sample ID: 550-151754-E-21 MS ^2

Matrix: Water

Analysis Batch: 224067

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	6.0	D1	8.00	14.2	D1	mg/L		103	80 - 120

Lab Sample ID: 550-151754-E-21 MS ^200

Matrix: Water

Analysis Batch: 224067

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	4900	M1 D2	4000	9730	D2	mg/L		120	80 - 120
Sulfate	2800	D2	4000	7310	D2	mg/L		114	80 - 120

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151757-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: 550-151754-E-21 MSD ^2

Matrix: Water

Analysis Batch: 224067

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	6.0	D1	8.00	14.2	D1	mg/L		103	80 - 120	0	20

Lab Sample ID: 550-151754-E-21 MSD ^200

Matrix: Water

Analysis Batch: 224067

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	4900	M1 D2	4000	9820	D2 M1	mg/L		122	80 - 120	1	20
Sulfate	2800	D2	4000	7360	D2	mg/L		115	80 - 120	1	20

Lab Sample ID: MB 550-224210/2

Matrix: Water

Analysis Batch: 224210

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0	mg/L			10/29/20 13:06	1
Fluoride	ND		0.40	mg/L			10/29/20 13:06	1
Sulfate	ND		2.0	mg/L			10/29/20 13:06	1

Lab Sample ID: LCS 550-224210/5

Matrix: Water

Analysis Batch: 224210

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	21.3		mg/L		106	90 - 110
Fluoride	4.00	4.07		mg/L		102	90 - 110
Sulfate	20.0	20.3		mg/L		102	90 - 110

Lab Sample ID: LCSD 550-224210/6

Matrix: Water

Analysis Batch: 224210

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	22.0		mg/L		110	90 - 110	3	20
Fluoride	4.00	4.19		mg/L		105	90 - 110	3	20
Sulfate	20.0	21.1		mg/L		106	90 - 110	4	20

Lab Sample ID: 550-151757-5 MS

Matrix: Water

Analysis Batch: 224210

Client Sample ID: CH-CCR-FD01-1020

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	570	D2	1000	1400	D2	mg/L		82	80 - 120

Lab Sample ID: 550-151757-5 MSD

Matrix: Water

Analysis Batch: 224210

Client Sample ID: CH-CCR-FD01-1020

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	ND		200	213	D1	mg/L		105	80 - 120	NC	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151757-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-151757-5 MSD

Matrix: Water

Analysis Batch: 224210

Client Sample ID: CH-CCR-FD01-1020

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	570	D2	1000	1450	D2	mg/L		87	80 - 120	4	20

Lab Sample ID: MB 550-224966/2

Matrix: Water

Analysis Batch: 224966

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0	mg/L			11/07/20 09:07	1
Fluoride	ND		0.40	mg/L			11/07/20 09:07	1
Sulfate	ND		2.0	mg/L			11/07/20 09:07	1

Lab Sample ID: LCS 550-224966/5

Matrix: Water

Analysis Batch: 224966

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	22.0		mg/L		110	90 - 110
Fluoride	4.00	4.21		mg/L		105	90 - 110
Sulfate	20.0	21.1		mg/L		106	90 - 110

Lab Sample ID: LCSD 550-224966/6

Matrix: Water

Analysis Batch: 224966

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	22.0		mg/L		110	90 - 110	0	20
Fluoride	4.00	4.21		mg/L		105	90 - 110	0	20
Sulfate	20.0	21.1		mg/L		106	90 - 110	0	20

Lab Sample ID: 550-152622-B-3 MS

Matrix: Water

Analysis Batch: 224966

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	250	E2 M3	20.0	251	E2 M3	mg/L		14	80 - 120
Fluoride	1.4		4.00	5.67		mg/L		106	80 - 120
Sulfate	320	E2 M3	20.0	320	E2 M3	mg/L		10	80 - 120

Lab Sample ID: 550-152622-B-3 MSD

Matrix: Water

Analysis Batch: 224966

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	250	E2 M3	20.0	252	E2 M3	mg/L		16	80 - 120	0	20
Fluoride	1.4		4.00	5.71		mg/L		107	80 - 120	1	20
Sulfate	320	E2 M3	20.0	319	E2 M3	mg/L		8	80 - 120	0	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151757-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-151757-5 DU

Matrix: Water

Analysis Batch: 224966

Client Sample ID: CH-CCR-FD01-1020

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Sulfate	340	D2	344	D2	mg/L		0.5	20

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 550-223994/1-A

Matrix: Water

Analysis Batch: 224361

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 223994

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.050	mg/L		10/28/20 10:24	10/30/20 20:52	1
Calcium	ND		2.0	mg/L		10/28/20 10:24	10/30/20 20:52	1

Lab Sample ID: LCS 550-223994/2-A

Matrix: Water

Analysis Batch: 224361

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 223994

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	0.971		mg/L		97	85 - 115
Calcium	21.0	20.3		mg/L		97	85 - 115

Lab Sample ID: LCSD 550-223994/3-A

Matrix: Water

Analysis Batch: 224361

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 223994

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Boron	1.00	0.959		mg/L		96	85 - 115	1	20
Calcium	21.0	20.0		mg/L		95	85 - 115	1	20

Lab Sample ID: 550-151757-5 MS

Matrix: Water

Analysis Batch: 224361

Client Sample ID: CH-CCR-FD01-1020

Prep Type: Total/NA

Prep Batch: 223994

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	0.48		1.00	1.50		mg/L		103	70 - 130
Calcium	83		21.0	106		mg/L		109	70 - 130

Lab Sample ID: 550-151757-5 MSD

Matrix: Water

Analysis Batch: 224361

Client Sample ID: CH-CCR-FD01-1020

Prep Type: Total/NA

Prep Batch: 223994

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Boron	0.48		1.00	1.48		mg/L		100	70 - 130	2	20
Calcium	83		21.0	105		mg/L		106	70 - 130	1	20

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151757-1

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 550-223835/1

Matrix: Water

Analysis Batch: 223835

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		20	mg/L			10/27/20 08:45	1

Lab Sample ID: LCS 550-223835/2

Matrix: Water

Analysis Batch: 223835

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	970		mg/L		97	90 - 110

Lab Sample ID: LCSD 550-223835/3

Matrix: Water

Analysis Batch: 223835

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	1000	954		mg/L		95	90 - 110	2	10

Lab Sample ID: 550-151757-5 DU

Matrix: Water

Analysis Batch: 223835

Client Sample ID: CH-CCR-FD01-1020

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	2900	D2	2670	D2	mg/L		8	10

Method: SM 4500 H+ B - pH

Lab Sample ID: LCSSRM 550-224312/1

Matrix: Water

Analysis Batch: 224312

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		99.9	98.5 - 101.5

Lab Sample ID: LCSSRM 550-224312/13

Matrix: Water

Analysis Batch: 224312

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		99.9	98.5 - 101.5

Lab Sample ID: 550-151757-1 DU

Matrix: Water

Analysis Batch: 224312

Client Sample ID: CH-CCR-M54-1020

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.3	H5	7.3	H5	SU		0.1	5
Temperature	10.6	H5	10.6	H5	Degrees C		0	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151757-1

HPLC/IC

Analysis Batch: 223927

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151757-5	CH-CCR-FD01-1020	Total/NA	Water	300.0	
550-151757-5	CH-CCR-FD01-1020	Total/NA	Water	300.0	
MB 550-223927/2	Method Blank	Total/NA	Water	300.0	
LCS 550-223927/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-223927/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-151757-5 MS	CH-CCR-FD01-1020	Total/NA	Water	300.0	
550-151757-5 MS	CH-CCR-FD01-1020	Total/NA	Water	300.0	
550-151757-5 MSD	CH-CCR-FD01-1020	Total/NA	Water	300.0	
550-151757-5 MSD	CH-CCR-FD01-1020	Total/NA	Water	300.0	
550-151757-5 DU	CH-CCR-FD01-1020	Total/NA	Water	300.0	
550-151757-5 DU	CH-CCR-FD01-1020	Total/NA	Water	300.0	

Analysis Batch: 224067

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151757-1	CH-CCR-M54-1020	Total/NA	Water	300.0	
550-151757-1	CH-CCR-M54-1020	Total/NA	Water	300.0	
550-151757-2	CH-CCR-M59-1020	Total/NA	Water	300.0	
550-151757-2	CH-CCR-M59-1020	Total/NA	Water	300.0	
550-151757-3	CH-CCR-M60-1020	Total/NA	Water	300.0	
550-151757-3	CH-CCR-M60-1020	Total/NA	Water	300.0	
550-151757-4	CH-CCR-M61-1020	Total/NA	Water	300.0	
550-151757-4	CH-CCR-M61-1020	Total/NA	Water	300.0	
MB 550-224067/2	Method Blank	Total/NA	Water	300.0	
LCS 550-224067/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-224067/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-151754-E-21 MS ^2	Matrix Spike	Total/NA	Water	300.0	
550-151754-E-21 MS ^200	Matrix Spike	Total/NA	Water	300.0	
550-151754-E-21 MSD ^2	Matrix Spike Duplicate	Total/NA	Water	300.0	
550-151754-E-21 MSD ^200	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 224210

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 550-224210/2	Method Blank	Total/NA	Water	300.0	
LCS 550-224210/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-224210/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-151757-5 MS	CH-CCR-FD01-1020	Total/NA	Water	300.0	
550-151757-5 MSD	CH-CCR-FD01-1020	Total/NA	Water	300.0	

Analysis Batch: 224966

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151757-5	CH-CCR-FD01-1020	Total/NA	Water	300.0	
MB 550-224966/2	Method Blank	Total/NA	Water	300.0	
LCS 550-224966/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-224966/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-152622-B-3 MS	Matrix Spike	Total/NA	Water	300.0	
550-152622-B-3 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
550-151757-5 DU	CH-CCR-FD01-1020	Total/NA	Water	300.0	

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151757-1

Metals

Prep Batch: 223994

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151757-1	CH-CCR-M54-1020	Total/NA	Water	200.7	
550-151757-2	CH-CCR-M59-1020	Total/NA	Water	200.7	
550-151757-3	CH-CCR-M60-1020	Total/NA	Water	200.7	
550-151757-4	CH-CCR-M61-1020	Total/NA	Water	200.7	
550-151757-5	CH-CCR-FD01-1020	Total/NA	Water	200.7	
MB 550-223994/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-223994/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-223994/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-151757-5 MS	CH-CCR-FD01-1020	Total/NA	Water	200.7	
550-151757-5 MSD	CH-CCR-FD01-1020	Total/NA	Water	200.7	

Analysis Batch: 224361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151757-1	CH-CCR-M54-1020	Total/NA	Water	200.7 Rev 4.4	223994
550-151757-2	CH-CCR-M59-1020	Total/NA	Water	200.7 Rev 4.4	223994
550-151757-3	CH-CCR-M60-1020	Total/NA	Water	200.7 Rev 4.4	223994
550-151757-4	CH-CCR-M61-1020	Total/NA	Water	200.7 Rev 4.4	223994
550-151757-5	CH-CCR-FD01-1020	Total/NA	Water	200.7 Rev 4.4	223994
MB 550-223994/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	223994
LCS 550-223994/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	223994
LCSD 550-223994/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	223994
550-151757-5 MS	CH-CCR-FD01-1020	Total/NA	Water	200.7 Rev 4.4	223994
550-151757-5 MSD	CH-CCR-FD01-1020	Total/NA	Water	200.7 Rev 4.4	223994

General Chemistry

Analysis Batch: 223835

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151757-1	CH-CCR-M54-1020	Total/NA	Water	SM 2540C	
550-151757-2	CH-CCR-M59-1020	Total/NA	Water	SM 2540C	
550-151757-3	CH-CCR-M60-1020	Total/NA	Water	SM 2540C	
550-151757-4	CH-CCR-M61-1020	Total/NA	Water	SM 2540C	
550-151757-5	CH-CCR-FD01-1020	Total/NA	Water	SM 2540C	
MB 550-223835/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-223835/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-223835/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-151757-5 DU	CH-CCR-FD01-1020	Total/NA	Water	SM 2540C	

Analysis Batch: 224312

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151757-1	CH-CCR-M54-1020	Total/NA	Water	SM 4500 H+ B	
550-151757-2	CH-CCR-M59-1020	Total/NA	Water	SM 4500 H+ B	
550-151757-3	CH-CCR-M60-1020	Total/NA	Water	SM 4500 H+ B	
550-151757-4	CH-CCR-M61-1020	Total/NA	Water	SM 4500 H+ B	
550-151757-5	CH-CCR-FD01-1020	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-224312/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-224312/13	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
550-151757-1 DU	CH-CCR-M54-1020	Total/NA	Water	SM 4500 H+ B	

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151757-1

Client Sample ID: CH-CCR-M54-1020

Lab Sample ID: 550-151757-1

Date Collected: 10/21/20 15:58

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	224067	10/28/20 19:21	RDC	TAL PHX
Total/NA	Analysis	300.0		100	224067	10/28/20 19:39	RDC	TAL PHX
Total/NA	Prep	200.7			223994	10/28/20 10:24	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224361	10/30/20 21:26	MGM	TAL PHX
Total/NA	Analysis	SM 2540C		1	223835	(Start) 10/27/20 08:45 (End) 10/28/20 09:30	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	224312	10/30/20 12:30	MRR	TAL PHX

Client Sample ID: CH-CCR-M59-1020

Lab Sample ID: 550-151757-2

Date Collected: 10/21/20 15:08

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	224067	10/28/20 19:58	RDC	TAL PHX
Total/NA	Analysis	300.0		100	224067	10/28/20 20:16	RDC	TAL PHX
Total/NA	Prep	200.7			223994	10/28/20 10:24	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224361	10/30/20 21:22	MGM	TAL PHX
Total/NA	Analysis	SM 2540C		1	223835	(Start) 10/27/20 08:45 (End) 10/28/20 09:30	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	224312	10/30/20 12:30	MRR	TAL PHX

Client Sample ID: CH-CCR-M60-1020

Lab Sample ID: 550-151757-3

Date Collected: 10/21/20 14:07

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	224067	10/28/20 21:11	RDC	TAL PHX
Total/NA	Analysis	300.0		100	224067	10/28/20 21:30	RDC	TAL PHX
Total/NA	Prep	200.7			223994	10/28/20 10:24	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224361	10/30/20 21:18	MGM	TAL PHX
Total/NA	Analysis	SM 2540C		1	223835	(Start) 10/27/20 08:45 (End) 10/28/20 09:30	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	224312	10/30/20 12:30	MRR	TAL PHX

Client Sample ID: CH-CCR-M61-1020

Lab Sample ID: 550-151757-4

Date Collected: 10/21/20 13:20

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	224067	10/28/20 21:48	RDC	TAL PHX
Total/NA	Analysis	300.0		100	224067	10/28/20 22:07	RDC	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151757-1

Client Sample ID: CH-CCR-M61-1020

Lab Sample ID: 550-151757-4

Date Collected: 10/21/20 13:20

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			223994	10/28/20 10:24	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224361	10/30/20 21:14	MGM	TAL PHX
Total/NA	Analysis	SM 2540C		1	223835	10/27/20 08:45 (Start) 10/28/20 09:30 (End)	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	224312	10/30/20 12:30	MRR	TAL PHX

Client Sample ID: CH-CCR-FD01-1020

Lab Sample ID: 550-151757-5

Date Collected: 10/21/20 14:07

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	223927	10/27/20 16:23	RDC	TAL PHX
Total/NA	Analysis	300.0		200	223927	10/27/20 17:18	RDC	TAL PHX
Total/NA	Analysis	300.0		50	224966	11/07/20 18:45	RDC	TAL PHX
Total/NA	Prep	200.7			223994	10/28/20 10:24	SXF	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224361	10/30/20 21:11	MGM	TAL PHX
Total/NA	Analysis	SM 2540C		1	223835	10/27/20 08:45 (Start) 10/28/20 09:30 (End)	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	224312	10/30/20 12:30	MRR	TAL PHX

Laboratory References:

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151757-1

Laboratory: Eurofins TestAmerica, Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-08-21

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
SM 4500 H+ B		Water	Temperature

Method Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151757-1

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PHX
200.7 Rev 4.4	Metals (ICP)	40CFR136A	TAL PHX
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PHX
SM 4500 H+ B	pH	SM	TAL PHX
200.7	Preparation, Total Metals	EPA	TAL PHX

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Login Sample Receipt Checklist

Client: Arizona Public Service Company

Job Number: 550-151757-1

Login Number: 151757

List Source: Eurofins TestAmerica, Phoenix

List Number: 1

Creator: Maycock, Lisa

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

ANALYTICAL REPORT

Eurofins TestAmerica, Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-151758-1

Laboratory SDG: APS Cholla Power Plant (BAP)
Client Project/Site: CCR Groundwater Monitoring

For:

Arizona Public Service Company
PO BOX 188, Ste. 4458
Joseph City, Arizona 86032

Attn: Natalie Chrisman



Authorized for release by:
12/8/2020 2:39:40 PM

Ken Baker, Project Manager II
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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	5
Sample Summary	7
Detection Summary	8
Client Sample Results	19
QC Sample Results	41
QC Association Summary	63
Lab Chronicle	76
Certification Summary	91
Method Summary	92
Chain of Custody	93
Receipt Checklists	98



Definitions/Glossary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
D5	Minimum Reporting Limit (MRL) adjusted due to sample dilution; analyte was non-detect in the sample.
M1	Matrix spike recovery was high, the associated blank spike recovery was acceptable.
M2	Matrix spike recovery was low, the associated blank spike recovery was acceptable.

Metals

Qualifier	Qualifier Description
B3	Target analyte detected in calibration blank at or above the method reporting limit.
D1	Sample required dilution due to matrix.
M2	Matrix spike recovery was low, the associated blank spike recovery was acceptable.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.

General Chemistry

Qualifier	Qualifier Description
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
H5	This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.
M2	Matrix spike recovery was low, the associated blank spike recovery was acceptable.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points

Definitions/Glossary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

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Case Narrative

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Job ID: 550-151758-1

Laboratory: Eurofins TestAmerica, Phoenix

Narrative

Job Narrative 550-151758-1

Comments

No additional comments.

Receipt

The samples were received on 10/26/2020 2:25 PM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 1.3° C, 2.0° C and 3.5° C.

Receipt Exceptions

CH-CCR-M52-1020 (550-151758-1), CH-CCR-M53-1020 (550-151758-3), CH-CCR-M55-1020 (550-151758-5), CH-CCR-M69-1020 (550-151758-7), CH-CCR-M70-1020 (550-151758-9), CH-CCR-W301-1020 (550-151758-11), CH-CCR-W302-1020 (550-151758-13), CH-CCR-W303-1020 (550-151758-15), CH-CCR-W304-1020 (550-151758-17), CH-CCR-FD03-1020 (550-151758-19), CH-CCR-W305-1020 (550-151758-21), CH-CCR-W306-1020 (550-151758-23), CH-CCR-W307-1020 (550-151758-25), CH-CCR-W308-1020 (550-151758-27), CH-CCR-W309-1020 (550-151758-29), CH-CCR-W314-1020 (550-151758-31) and CH-CCR-FD04-1020 (550-151758-34)

Containers received with about 75mL in containers.

CH-CCR-W317-1020 (550-151758-33)

About 125 ml provided in container I

HPLC/IC

Method 300.0: The following samples were diluted for Fluoride due to the nature of the samples matrix: CH-CCR-M55-1020 (550-151758-5), CH-CCR-W301-1020 (550-151758-11), CH-CCR-W303-1020 (550-151758-15) and CH-CCR-W304-1020 (550-151758-17). This analyte was not detected in the diluted samples. Elevated reporting limits (RLs) have been provided.

Method 300.0: The following sample were diluted for Fluoride due to the nature of the sample matrix: CH-CCR-W305-1020 (550-151758-21), CH-CCR-W307-1020 (550-151758-25), CH-CCR-W308-1020 (550-151758-27), CH-CCR-W317-1020 (550-151758-33), CH-CCR-FD04-1020 (550-151758-34) and (550-151757-A-5 ^50). This analyte was not detected in the diluted samples. As such, elevated reporting limits (RLs) have been provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method 200.8: insufficient sample volume

CH-CCR-M69-1020 (550-151758-7) and CH-CCR-W317-1020 (550-151758-33)

Method 200.8 LL: The continuing calibration blank (CCB) for analytical batch 550-225482 contained Selenium above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

Method 200.8 LL: The continuing calibration blank (CCB) for analytical batch 550-226262 contained Selenium above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

Method 200.7: A deviation from the Standard Operating Procedure (SOP) occurred. Details are as follows: Due to insufficient sample volume the samples were prepared at 25ml instead of the standard 50ml.

Method 200.7: A deviation from the Standard Operating Procedure (SOP) occurred. Details are as follows: Due to insufficient sample volume the samples were prepared at half volume.

Method 200.7: A deviation from the Standard Operating Procedure (SOP) occurred. Details are as follows: For method 200.7 we perform

Case Narrative

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Job ID: 550-151758-1 (Continued)

Laboratory: Eurofins TestAmerica, Phoenix (Continued)

an MS/MSD for every 10 prepared samples. Due to analyst error only 1 MS/MSD pair was performed for prep batch 516897. Due to limited remaining volume the samples were not re-prepared.

Method 200.7: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 280-517511. An LCS/LCSD was added to the prep.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Field Service / Mobile Lab

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
550-151758-1	CH-CCR-M52-1020	Water	10/22/20 15:14	10/26/20 14:25	
550-151758-2	CH-CCR-M52-1020	Water	10/22/20 15:14	10/26/20 14:25	
550-151758-3	CH-CCR-M53-1020	Water	10/22/20 11:33	10/26/20 14:25	
550-151758-4	CH-CCR-M53-1020	Water	10/22/20 11:33	10/26/20 14:25	
550-151758-5	CH-CCR-M55-1020	Water	10/24/20 09:02	10/26/20 14:25	
550-151758-6	CH-CCR-M55-1020	Water	10/24/20 09:02	10/26/20 14:25	
550-151758-7	CH-CCR-M69-1020	Water	10/23/20 09:47	10/26/20 14:25	
550-151758-8	CH-CCR-M69-1020	Water	10/23/20 09:47	10/26/20 14:25	
550-151758-9	CH-CCR-M70-1020	Water	10/23/20 07:57	10/26/20 14:25	
550-151758-10	CH-CCR-M70-1020	Water	10/23/20 07:57	10/26/20 14:25	
550-151758-11	CH-CCR-W301-1020	Water	10/22/20 09:05	10/26/20 14:25	
550-151758-12	CH-CCR-W301-1020	Water	10/22/20 09:05	10/26/20 14:25	
550-151758-13	CH-CCR-W302-1020	Water	10/23/20 12:50	10/26/20 14:25	
550-151758-14	CH-CCR-W302-1020	Water	10/23/20 12:50	10/26/20 14:25	
550-151758-15	CH-CCR-W303-1020	Water	10/22/20 10:16	10/26/20 14:25	
550-151758-16	CH-CCR-W303-1020	Water	10/22/20 10:16	10/26/20 14:25	
550-151758-17	CH-CCR-W304-1020	Water	10/23/20 14:05	10/26/20 14:25	
550-151758-18	CH-CCR-W304-1020	Water	10/23/20 14:05	10/26/20 14:25	
550-151758-19	CH-CCR-FD03-1020	Water	10/23/20 07:57	10/26/20 14:25	
550-151758-20	CH-CCR-FD03-1020	Water	10/23/20 07:57	10/26/20 14:25	
550-151758-21	CH-CCR-W305-1020	Water	10/22/20 12:47	10/26/20 14:25	
550-151758-22	CH-CCR-W305-1020	Water	10/22/20 12:47	10/26/20 14:25	
550-151758-23	CH-CCR-W306-1020	Water	10/22/20 13:55	10/26/20 14:25	
550-151758-24	CH-CCR-W306-1020	Water	10/22/20 13:55	10/26/20 14:25	
550-151758-25	CH-CCR-W307-1020	Water	10/23/20 15:20	10/26/20 14:25	
550-151758-26	CH-CCR-W307-1020	Water	10/23/20 15:20	10/26/20 14:25	
550-151758-27	CH-CCR-W308-1020	Water	10/24/20 08:04	10/26/20 14:25	
550-151758-28	CH-CCR-W308-1020	Water	10/24/20 08:04	10/26/20 14:25	
550-151758-29	CH-CCR-W309-1020	Water	10/24/20 10:10	10/26/20 14:25	
550-151758-30	CH-CCR-W309-1020	Water	10/24/20 10:10	10/26/20 14:25	
550-151758-31	CH-CCR-W314-1020	Water	10/23/20 11:17	10/26/20 14:25	
550-151758-32	CH-CCR-W314-1020	Water	10/23/20 11:17	10/26/20 14:25	
550-151758-33	CH-CCR-W317-1020	Water	10/21/20 11:27	10/26/20 14:25	
550-151758-34	CH-CCR-FD04-1020	Water	10/23/20 15:20	10/26/20 14:25	
550-151758-35	CH-CCR-FD04-1020	Water	10/23/20 15:20	10/26/20 14:25	

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-M52-1020

Lab Sample ID: 550-151758-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2500	D2	400	mg/L	200		300.0	Total/NA
Fluoride	1.5	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	3000	D2	400	mg/L	200		300.0	Total/NA
Lithium	0.20		0.020	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	2.9		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	660		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.41		0.10	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	1.6		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0012	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Barium	0.014	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Cadmium	0.0020		0.00020	mg/L	2		200.8 LL	Total/NA
Chromium	0.0087		0.0020	mg/L	2		200.8 LL	Total/NA
Cobalt	0.067		0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.086		0.0010	mg/L	2		200.8 LL	Total/NA
Selenium	0.0026		0.0010	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	7700	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	8.3	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Ammonia	0.54		0.50	mg/L	1		SM 4500 NH3 D	Total/NA
Total Organic Carbon	1.2		0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-M52-1020

Lab Sample ID: 550-151758-2

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Iron	0.21		0.10	mg/L	1		200.7 Rev 4.4	Dissolved
Manganese	1.6		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Cobalt	0.070	D1	0.0020	mg/L	4		200.8 LL	Dissolved
Dissolved Organic Carbon	1.3		0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	1.3		0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	1.3		0.50	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-M53-1020

Lab Sample ID: 550-151758-3

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2400	D2	400	mg/L	200		300.0	Total/NA
Fluoride	2.5	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	3000	D2	400	mg/L	200		300.0	Total/NA
Lithium	0.21		0.020	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	3.6		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	630		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	5.2		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0030	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Barium	0.0096	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Cadmium	0.0011		0.00020	mg/L	2		200.8 LL	Total/NA
Chromium	0.0021		0.0020	mg/L	2		200.8 LL	Total/NA
Cobalt	0.011		0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.036		0.0010	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	7500	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	8.6	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	0.99		0.50	mg/L	1		SM 5310B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-M53-1020

Lab Sample ID: 550-151758-4

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Manganese	4.7		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.0028	D1	0.0020	mg/L	4		200.8 LL	Dissolved
Cobalt	0.012	D1	0.0020	mg/L	4		200.8 LL	Dissolved
Dissolved Organic Carbon	1.1		0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	1.1		0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	1.1		0.50	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-M55-1020

Lab Sample ID: 550-151758-5

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4700	D2	400	mg/L	200		300.0	Total/NA
Nitrate Nitrite as N	0.48	D1	0.25	mg/L	5		300.0	Total/NA
Sulfate	3500	D2	400	mg/L	200		300.0	Total/NA
Lithium	0.43		0.020	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	0.39		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	730		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.17		0.10	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.017		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0070	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Barium	0.016	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Chromium	0.015		0.0020	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0043		0.0010	mg/L	2		200.8 LL	Total/NA
Selenium	0.11	B3	0.0010	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	11000	D2	200	mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	6.3	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	3.0		0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-M55-1020

Lab Sample ID: 550-151758-6

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.016		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.0052	D1	0.0020	mg/L	4		200.8 LL	Dissolved
Dissolved Organic Carbon	3.2		0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	3.2		0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	3.2		0.50	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-M69-1020

Lab Sample ID: 550-151758-7

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2500	D2	400	mg/L	200		300.0	Total/NA
Fluoride	1.5	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	3000	D2	400	mg/L	200		300.0	Total/NA
Lithium	0.19		0.020	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	3.1		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	660		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	2.3		0.10	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	8.2		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0099	D1	0.0050	mg/L	2		200.8 LL	Total/NA
Barium	0.024	D1	0.0050	mg/L	2		200.8 LL	Total/NA
Cobalt	0.025	D1	0.0050	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.047	D1	0.0050	mg/L	2		200.8 LL	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-M69-1020 (Continued)

Lab Sample ID: 550-151758-7

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Selenium	0.0089		0.0050	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	7800	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	7.2	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	1.5		0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-M69-1020

Lab Sample ID: 550-151758-8

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Iron	1.1		0.10	mg/L	1		200.7 Rev 4.4	Dissolved
Manganese	8.1		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.0047	D1	0.0020	mg/L	4		200.8 LL	Dissolved
Cobalt	0.027	D1	0.0020	mg/L	4		200.8 LL	Dissolved
Dissolved Organic Carbon	1.5		0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	1.5		0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	1.5		0.50	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-M70-1020

Lab Sample ID: 550-151758-9

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2200	D2	400	mg/L	200		300.0	Total/NA
Fluoride	1.1	D1	0.80	mg/L	2		300.0	Total/NA
Nitrate Nitrite as N	0.40	D1	0.25	mg/L	5		300.0	Total/NA
Sulfate	2600	D2	400	mg/L	200		300.0	Total/NA
Lithium	0.20		0.020	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	2.1		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	660		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	1.8		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0013	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Barium	0.013	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Cadmium	0.00038		0.00020	mg/L	2		200.8 LL	Total/NA
Cobalt	0.022		0.0010	mg/L	2		200.8 LL	Total/NA
Lead	0.0025		0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.031		0.0010	mg/L	2		200.8 LL	Total/NA
Selenium	0.0028	D1	0.0020	mg/L	4		200.8 LL	Total/NA
Total Dissolved Solids	6900	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	6.7	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	1.1		0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-M70-1020

Lab Sample ID: 550-151758-10

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Manganese	1.7		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.0032	D1	0.0020	mg/L	4		200.8 LL	Dissolved
Cobalt	0.023	D1	0.0020	mg/L	4		200.8 LL	Dissolved
Dissolved Organic Carbon	1.2		0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	1.2		0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	1.2		0.50	mg/L	1		SM 5310B	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W301-1020

Lab Sample ID: 550-151758-11

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6600	D2	400	mg/L	200		300.0	Total/NA
Nitrate Nitrite as N	20	D1	0.25	mg/L	5		300.0	Total/NA
Sulfate	3800	D2	400	mg/L	200		300.0	Total/NA
Lithium	0.57		0.020	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	0.58		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	780		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	1.6		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0032	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Barium	0.0083	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Cobalt	0.022		0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0057		0.0010	mg/L	2		200.8 LL	Total/NA
Selenium	0.0035		0.0010	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	13000	D2	200	mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	6.7	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	2.6		0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-W301-1020

Lab Sample ID: 550-151758-12

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Manganese	1.6		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Cobalt	0.022	D1	0.0020	mg/L	4		200.8 LL	Dissolved
Dissolved Organic Carbon	2.7		0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	2.7		0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	2.7		0.50	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-W302-1020

Lab Sample ID: 550-151758-13

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3200	D2	400	mg/L	200		300.0	Total/NA
Fluoride	0.82	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	2300	D2	400	mg/L	200		300.0	Total/NA
Lithium	0.37		0.020	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	0.57		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	640		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.19		0.10	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.057		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0013	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Barium	0.014	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Chromium	0.031		0.0020	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0052		0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0085		0.0010	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	7700	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	7.2	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	0.57		0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-W302-1020

Lab Sample ID: 550-151758-14

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Iron	0.12		0.10	mg/L	1		200.7 Rev 4.4	Dissolved
Manganese	0.048		0.010	mg/L	1		200.7 Rev 4.4	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W302-1020 (Continued)

Lab Sample ID: 550-151758-14

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.0056	D1	0.0020	mg/L	4		200.8 LL	Dissolved
Dissolved Organic Carbon	0.75		0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	0.75		0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	0.75		0.50	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-W303-1020

Lab Sample ID: 550-151758-15

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2800	D2	400	mg/L	200		300.0	Total/NA
Sulfate	3400	D2	400	mg/L	200		300.0	Total/NA
Lithium	0.32		0.020	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	3.2		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	660		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.14		0.10	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.10		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0014	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Barium	0.0046	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Chromium	0.025		0.0020	mg/L	2		200.8 LL	Total/NA
Cobalt	0.021		0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.019		0.0010	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	8600	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	6.9	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	1.1		0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-W303-1020

Lab Sample ID: 550-151758-16

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.11		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.0023	D1	0.0020	mg/L	4		200.8 LL	Dissolved
Cobalt	0.023	D1	0.0020	mg/L	4		200.8 LL	Dissolved
Dissolved Organic Carbon	1.2		0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	1.2		0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	1.2		0.50	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-W304-1020

Lab Sample ID: 550-151758-17

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3000	D2	400	mg/L	200		300.0	Total/NA
Sulfate	2900	D2	400	mg/L	200		300.0	Total/NA
Lithium	0.45		0.020	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	0.44		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	600		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.20		0.10	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	1.2		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0010	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Barium	0.0091	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0029		0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0028		0.0010	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	8500	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	7.8	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W304-1020 (Continued)

Lab Sample ID: 550-151758-17

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon	0.62		0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-W304-1020

Lab Sample ID: 550-151758-18

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Iron	0.18		0.10	mg/L	1		200.7 Rev 4.4	Dissolved
Manganese	1.1		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Cobalt	0.0034	D1	0.0020	mg/L	4		200.8 LL	Dissolved
Dissolved Organic Carbon	1.3		0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	1.3		0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	1.3		0.50	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-FD03-1020

Lab Sample ID: 550-151758-19

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2200	D2	400	mg/L	200		300.0	Total/NA
Fluoride	1.1	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	2600	D2	400	mg/L	200		300.0	Total/NA
Lithium	0.19		0.020	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	2.1		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	680		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	1.8		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0020	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Barium	0.013	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Cadmium	0.00042	D1	0.00020	mg/L	2		200.8 LL	Total/NA
Cobalt	0.022	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Lead	0.0022	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.030	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Selenium	0.0027		0.0010	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	6900	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	8.0	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	1.0		0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-FD03-1020

Lab Sample ID: 550-151758-20

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Manganese	1.6		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Cobalt	0.021	D1	0.0020	mg/L	4		200.8 LL	Dissolved
Dissolved Organic Carbon	1.1		0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	1.1		0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	1.1		0.50	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-W305-1020

Lab Sample ID: 550-151758-21

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2500		400	mg/L	200		300.0	Total/NA
Sulfate	2400		400	mg/L	200		300.0	Total/NA
Lithium	0.22		0.020	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	0.34		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	720		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.36		0.10	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	7.2		0.010	mg/L	1		200.7 Rev 4.4	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W305-1020 (Continued)

Lab Sample ID: 550-151758-21

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.013	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Chromium	0.0025	D1	0.0020	mg/L	2		200.8 LL	Total/NA
Cobalt	0.018	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Lead	0.0021	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.022	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Selenium	0.0036		0.0010	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	6900	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	8.2	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	1.5		0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-W305-1020

Lab Sample ID: 550-151758-22

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Iron	0.36		0.10	mg/L	1		200.7 Rev 4.4	Dissolved
Manganese	7.0		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Cobalt	0.018	D1	0.0010	mg/L	2		200.8 LL	Dissolved
Dissolved Organic Carbon	1.7	M2	0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	1.7	M2	0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	1.7	M2	0.50	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-W306-1020

Lab Sample ID: 550-151758-23

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2100		400	mg/L	200		300.0	Total/NA
Fluoride	1.1	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	13000		400	mg/L	200		300.0	Total/NA
Lithium	0.73		0.020	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	0.94		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	440		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.11		0.10	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.014	D1	0.0020	mg/L	4		200.8 LL	Total/NA
Barium	0.022	D1	0.0020	mg/L	4		200.8 LL	Total/NA
Cobalt	0.0030	D1	0.0020	mg/L	4		200.8 LL	Total/NA
Molybdenum	0.073	D1	0.0020	mg/L	4		200.8 LL	Total/NA
Selenium	0.0055	D1	0.0020	mg/L	4		200.8 LL	Total/NA
Total Dissolved Solids	18000	D2	200	mg/L	1		SM 2540C	Total/NA
pH	7.7	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	9.0	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	2.2		0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-W306-1020

Lab Sample ID: 550-151758-24

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Iron	0.10		0.10	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.0071	D1	0.0020	mg/L	4		200.8 LL	Dissolved
Dissolved Organic Carbon	2.2		0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	2.2		0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	2.2		0.50	mg/L	1		SM 5310B	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W307-1020

Lab Sample ID: 550-151758-25

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3100		400	mg/L	200		300.0	Total/NA
Sulfate	2800		400	mg/L	200		300.0	Total/NA
Lithium	0.26		0.020	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	2.5		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	810		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.17		0.10	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.042		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0014	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Barium	0.013	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Cadmium	0.00064	D1	0.00020	mg/L	2		200.8 LL	Total/NA
Chromium	0.013	D1	0.0020	mg/L	2		200.8 LL	Total/NA
Cobalt	0.069	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Lead	0.0011	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.018	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Selenium	0.0024		0.0010	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	8100	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.2	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	9.5	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	1.1		0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-W307-1020

Lab Sample ID: 550-151758-26

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Iron	0.16		0.10	mg/L	1		200.7 Rev 4.4	Dissolved
Manganese	0.041		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.0022	D1	0.0020	mg/L	4		200.8 LL	Dissolved
Cobalt	0.069	D1	0.0010	mg/L	2		200.8 LL	Dissolved
Dissolved Organic Carbon	1.3		0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	1.3		0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	1.3		0.50	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-W308-1020

Lab Sample ID: 550-151758-27

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3400		400	mg/L	200		300.0	Total/NA
Nitrate Nitrite as N	0.68	D1	0.25	mg/L	5		300.0	Total/NA
Sulfate	2800		400	mg/L	200		300.0	Total/NA
Lithium	0.42		0.020	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	0.41		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	820		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.12		0.10	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.34		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0024	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Barium	0.0084	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Chromium	0.028	D1	0.0020	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0027	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0031	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Selenium	0.012		0.0010	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	8700	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.0	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	9.9	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	0.93		0.50	mg/L	1		SM 5310B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W308-1020

Lab Sample ID: 550-151758-28

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.32		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Cobalt	0.080	D1	0.0020	mg/L	4		200.8 LL	Dissolved
Dissolved Organic Carbon	0.95		0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	0.94		0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	0.95		0.50	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-W309-1020

Lab Sample ID: 550-151758-29

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1700	D2	400	mg/L	200		300.0	Total/NA
Fluoride	1.1	D1	0.80	mg/L	2		300.0	Total/NA
Nitrate Nitrite as N	3.2	D1	0.25	mg/L	5		300.0	Total/NA
Sulfate	3400	D2	400	mg/L	200		300.0	Total/NA
Lithium	0.33		0.020	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	0.43		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	450		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.11		0.10	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.56		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0089	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Barium	0.0071	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Chromium	0.11	D1	0.0020	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.017	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Selenium	0.21	B3 D1	0.0010	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	7100	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.2	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	9.1	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: CH-CCR-W309-1020

Lab Sample ID: 550-151758-30

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.55		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.0093		0.0010	mg/L	2		200.8 LL	Dissolved
Dissolved Organic Carbon	0.54		0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	0.54		0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	0.54		0.50	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-W314-1020

Lab Sample ID: 550-151758-31

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2800	D2	400	mg/L	200		300.0	Total/NA
Fluoride	0.90	D1	0.80	mg/L	2		300.0	Total/NA
Nitrate Nitrite as N	4.5	D1	0.25	mg/L	5		300.0	Total/NA
Sulfate	2400	D2	400	mg/L	200		300.0	Total/NA
Lithium	0.31		0.020	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	1.2		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	790		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.082		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0019	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Barium	0.011	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Cadmium	0.00031	D1	0.00020	mg/L	2		200.8 LL	Total/NA
Chromium	0.0091	D1	0.0020	mg/L	2		200.8 LL	Total/NA
Cobalt	0.024	D1	0.0010	mg/L	2		200.8 LL	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W314-1020 (Continued)

Lab Sample ID: 550-151758-31

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Molybdenum	0.011	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Selenium	0.0020		0.0010	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	7200	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.2	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	8.6	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	0.95		0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-W314-1020

Lab Sample ID: 550-151758-32

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.082		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Cobalt	0.025	D1	0.0010	mg/L	2		200.8 LL	Dissolved
Dissolved Organic Carbon	0.98		0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	0.98		0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	0.98		0.50	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-W317-1020

Lab Sample ID: 550-151758-33

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1500	D2	400	mg/L	200		300.0	Total/NA
Sulfate	680	D2	400	mg/L	200		300.0	Total/NA
Lithium	0.064		0.020	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	0.20		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	350	M3	2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0046	D1	0.0020	mg/L	2		200.8 LL	Total/NA
Barium	0.036	D1	0.0020	mg/L	2		200.8 LL	Total/NA
Chromium	0.0079	D1	0.0040	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0041	D1	0.0020	mg/L	2		200.8 LL	Total/NA
Selenium	0.0028		0.0020	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	3500	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.6	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	9.6	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: CH-CCR-FD04-1020

Lab Sample ID: 550-151758-34

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3100		400	mg/L	200		300.0	Total/NA
Sulfate	2800		400	mg/L	200		300.0	Total/NA
Lithium	0.26		0.020	mg/L	1		200.7 Rev 4.4	Total/NA
Boron	2.5		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	790		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.18		0.10	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.042		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Arsenic	0.0014	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Barium	0.013	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Cadmium	0.00056	D1	0.00020	mg/L	2		200.8 LL	Total/NA
Chromium	0.013	D1	0.0020	mg/L	2		200.8 LL	Total/NA
Cobalt	0.070	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Lead	0.0011	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.017	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Selenium	0.0024		0.0010	mg/L	2		200.8 LL	Total/NA
Total Dissolved Solids	8000	D2	100	mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-FD04-1020 (Continued)

Lab Sample ID: 550-151758-34

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
pH	7.3	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	9.1	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	1.1	M2	0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-FD04-1020

Lab Sample ID: 550-151758-35

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Iron	0.17		0.10	mg/L	1		200.7 Rev 4.4	Dissolved
Manganese	0.041		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.0020	D1	0.0020	mg/L	4		200.8 LL	Dissolved
Cobalt	0.074	D1	0.0010	mg/L	2		200.8 LL	Dissolved
Dissolved Organic Carbon	1.2		0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	1.2		0.50	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Quad	1.2		0.50	mg/L	1		SM 5310B	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-M52-1020

Lab Sample ID: 550-151758-1

Date Collected: 10/22/20 15:14

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2500	D2	400	mg/L			10/28/20 22:44	200
Fluoride	1.5	D1	0.80	mg/L			10/28/20 22:25	2
Nitrate Nitrite as N	ND	D1 D5	0.25	mg/L			10/28/20 16:54	5
Sulfate	3000	D2	400	mg/L			10/28/20 22:44	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		10/29/20 11:02	11/06/20 03:05	1
Lithium	0.20		0.020	mg/L		11/17/20 15:45	11/18/20 17:43	1
Boron	2.9		0.050	mg/L		10/29/20 11:02	11/06/20 03:05	1
Calcium	660		2.0	mg/L		10/29/20 11:02	11/06/20 03:05	1
Iron	0.41		0.10	mg/L		10/29/20 11:02	11/06/20 03:05	1
Manganese	1.6		0.010	mg/L		10/29/20 11:02	11/06/20 03:05	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	mg/L		11/02/20 10:09	11/12/20 22:34	2
Arsenic	0.0012	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:14	2
Barium	0.014	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:14	2
Cadmium	0.0020		0.00020	mg/L		11/02/20 10:09	11/12/20 22:34	2
Chromium	0.0087		0.0020	mg/L		11/02/20 10:09	11/12/20 22:34	2
Cobalt	0.067		0.0010	mg/L		11/02/20 10:09	11/12/20 22:34	2
Lead	ND		0.0010	mg/L		11/02/20 10:09	11/12/20 22:34	2
Molybdenum	0.086		0.0010	mg/L		11/02/20 10:09	11/12/20 22:34	2
Selenium	0.0026		0.0010	mg/L		11/02/20 10:09	11/30/20 13:26	2
Thallium	ND		0.00020	mg/L		11/02/20 10:09	11/12/20 22:34	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020	mg/L		10/27/20 18:23	10/28/20 15:21	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	7700	D2	100	mg/L			10/27/20 08:45	1
pH	7.4	H5	1.7	SU			11/02/20 18:00	1
Temperature	8.3	H5	0.1	Degrees C			11/02/20 18:00	1
Ammonia	0.54		0.50	mg/L			11/07/20 13:33	1
Total Organic Carbon	1.2		0.50	mg/L			10/28/20 14:38	1

Client Sample ID: CH-CCR-M52-1020

Lab Sample ID: 550-151758-2

Date Collected: 10/22/20 15:14

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.21		0.10	mg/L		10/28/20 09:43	11/06/20 20:11	1
Manganese	1.6		0.010	mg/L		10/28/20 09:43	11/06/20 20:11	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0020	mg/L		10/27/20 06:29	11/20/20 10:26	4

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-M52-1020

Lab Sample ID: 550-151758-2

Date Collected: 10/22/20 15:14

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.8 LL - Metals (ICP/MS) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.070	D1	0.0020	mg/L		10/27/20 06:29	11/20/20 10:26	4

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.3		0.50	mg/L			10/27/20 13:51	1
Dissolved Organic Carbon - Duplicate	1.3		0.50	mg/L			10/27/20 13:51	1
Dissolved Organic Carbon - Quad	1.3		0.50	mg/L			10/27/20 13:51	1

Client Sample ID: CH-CCR-M53-1020

Lab Sample ID: 550-151758-3

Date Collected: 10/22/20 11:33

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2400	D2	400	mg/L			10/29/20 19:25	200
Fluoride	2.5	D1	0.80	mg/L			10/29/20 19:07	2
Nitrate Nitrite as N	ND	D1 D5	0.25	mg/L			10/28/20 18:43	5
Sulfate	3000	D2	400	mg/L			10/29/20 19:25	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		10/29/20 11:02	11/06/20 03:09	1
Lithium	0.21		0.020	mg/L		11/17/20 15:45	11/18/20 17:46	1
Boron	3.6		0.050	mg/L		10/29/20 11:02	11/06/20 03:09	1
Calcium	630		2.0	mg/L		10/29/20 11:02	11/06/20 03:09	1
Iron	ND		0.10	mg/L		10/29/20 11:02	11/06/20 03:09	1
Manganese	5.2		0.010	mg/L		10/29/20 11:02	11/06/20 03:09	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	mg/L		11/02/20 10:09	11/12/20 22:36	2
Arsenic	0.0030	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:16	2
Barium	0.0096	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:16	2
Cadmium	0.0011		0.00020	mg/L		11/02/20 10:09	11/12/20 22:36	2
Chromium	0.0021		0.0020	mg/L		11/02/20 10:09	11/12/20 22:36	2
Cobalt	0.011		0.0010	mg/L		11/02/20 10:09	11/12/20 22:36	2
Lead	ND		0.0010	mg/L		11/02/20 10:09	11/12/20 22:36	2
Molybdenum	0.036		0.0010	mg/L		11/02/20 10:09	11/12/20 22:36	2
Selenium	ND	B3	0.0010	mg/L		11/02/20 10:09	11/12/20 22:36	2
Thallium	ND		0.00020	mg/L		11/02/20 10:09	11/12/20 22:36	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020	mg/L		10/27/20 18:23	10/28/20 15:23	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	7500	D2	100	mg/L			10/27/20 08:45	1
pH	7.5	H5	1.7	SU			11/02/20 18:00	1
Temperature	8.6	H5	0.1	Degrees C			11/02/20 18:00	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-M53-1020

Lab Sample ID: 550-151758-3

Date Collected: 10/22/20 11:33

Matrix: Water

Date Received: 10/26/20 14:25

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.50	mg/L			11/07/20 13:42	1
Total Organic Carbon	0.99		0.50	mg/L			11/05/20 19:44	1

Client Sample ID: CH-CCR-M53-1020

Lab Sample ID: 550-151758-4

Date Collected: 10/22/20 11:33

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10	mg/L		10/28/20 09:43	11/06/20 20:15	1
Manganese	4.7		0.010	mg/L		10/28/20 09:43	11/06/20 20:15	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0028	D1	0.0020	mg/L		10/27/20 06:29	11/20/20 10:28	4
Cobalt	0.012	D1	0.0020	mg/L		10/27/20 06:29	11/20/20 10:28	4

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.1		0.50	mg/L			10/27/20 14:02	1
Dissolved Organic Carbon - Duplicate	1.1		0.50	mg/L			10/27/20 14:02	1
Dissolved Organic Carbon - Quad	1.1		0.50	mg/L			10/27/20 14:02	1

Client Sample ID: CH-CCR-M55-1020

Lab Sample ID: 550-151758-5

Date Collected: 10/24/20 09:02

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4700	D2	400	mg/L			10/28/20 23:20	200
Fluoride	ND	D1 D5	0.80	mg/L			10/28/20 23:02	2
Nitrate Nitrite as N	0.48	D1	0.25	mg/L			10/28/20 19:11	5
Sulfate	3500	D2	400	mg/L			10/28/20 23:20	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		10/29/20 11:02	11/06/20 03:13	1
Lithium	0.43		0.020	mg/L		11/17/20 15:45	11/18/20 17:50	1
Boron	0.39		0.050	mg/L		10/29/20 11:02	11/06/20 03:13	1
Calcium	730		2.0	mg/L		10/29/20 11:02	11/06/20 03:13	1
Iron	0.17		0.10	mg/L		10/29/20 11:02	11/06/20 03:13	1
Manganese	0.017		0.010	mg/L		10/29/20 11:02	11/06/20 03:13	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	mg/L		11/02/20 10:09	11/12/20 22:38	2
Arsenic	0.0070	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:18	2
Barium	0.016	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:18	2
Cadmium	ND		0.00020	mg/L		11/02/20 10:09	11/12/20 22:38	2
Chromium	0.015		0.0020	mg/L		11/02/20 10:09	11/12/20 22:38	2
Cobalt	ND		0.0010	mg/L		11/02/20 10:09	11/12/20 22:38	2

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-M55-1020

Lab Sample ID: 550-151758-5

Date Collected: 10/24/20 09:02

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0010	mg/L		11/02/20 10:09	11/12/20 22:38	2
Molybdenum	0.0043		0.0010	mg/L		11/02/20 10:09	11/12/20 22:38	2
Selenium	0.11	B3	0.0010	mg/L		11/02/20 10:09	11/12/20 22:38	2
Thallium	ND		0.00020	mg/L		11/02/20 10:09	11/12/20 22:38	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020	mg/L		10/28/20 18:28	10/29/20 17:39	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	11000	D2	200	mg/L			10/28/20 09:27	1
pH	7.4	H5	1.7	SU			11/04/20 16:10	1
Temperature	6.3	H5	0.1	Degrees C			11/04/20 16:10	1
Ammonia	ND		0.50	mg/L			11/07/20 13:50	1
Total Organic Carbon	3.0		0.50	mg/L			10/28/20 15:02	1

Client Sample ID: CH-CCR-M55-1020

Lab Sample ID: 550-151758-6

Date Collected: 10/24/20 09:02

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10	mg/L		10/28/20 09:43	11/06/20 20:18	1
Manganese	0.016		0.010	mg/L		10/28/20 09:43	11/06/20 20:18	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0052	D1	0.0020	mg/L		10/27/20 06:29	11/20/20 10:30	4
Cobalt	ND	D1	0.0020	mg/L		10/27/20 06:29	11/20/20 10:30	4

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	3.2		0.50	mg/L			10/27/20 14:15	1
Dissolved Organic Carbon - Duplicate	3.2		0.50	mg/L			10/27/20 14:15	1
Dissolved Organic Carbon - Quad	3.2		0.50	mg/L			10/27/20 14:15	1

Client Sample ID: CH-CCR-M69-1020

Lab Sample ID: 550-151758-7

Date Collected: 10/23/20 09:47

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2500	D2	400	mg/L			10/28/20 23:57	200
Fluoride	1.5	D1	0.80	mg/L			10/28/20 23:39	2
Nitrate Nitrite as N	ND	D1 D5	0.25	mg/L			10/28/20 19:38	5
Sulfate	3000	D2	400	mg/L			10/28/20 23:57	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		10/29/20 11:02	11/06/20 03:16	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-M69-1020

Lab Sample ID: 550-151758-7

Date Collected: 10/23/20 09:47

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.19		0.020	mg/L		11/17/20 15:45	11/18/20 17:53	1
Boron	3.1		0.050	mg/L		10/29/20 11:02	11/06/20 03:16	1
Calcium	660		2.0	mg/L		10/29/20 11:02	11/06/20 03:16	1
Iron	2.3		0.10	mg/L		10/29/20 11:02	11/06/20 03:16	1
Manganese	8.2		0.010	mg/L		10/29/20 11:02	11/06/20 03:16	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.010	mg/L		11/02/20 10:09	11/20/20 17:52	2
Arsenic	0.0099	D1	0.0050	mg/L		11/02/20 10:09	11/20/20 17:52	2
Barium	0.024	D1	0.0050	mg/L		11/02/20 10:09	11/20/20 17:52	2
Cadmium	ND	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:52	2
Chromium	ND	D1	0.010	mg/L		11/02/20 10:09	11/20/20 17:52	2
Cobalt	0.025	D1	0.0050	mg/L		11/02/20 10:09	11/20/20 17:52	2
Lead	ND	D1	0.0050	mg/L		11/02/20 10:09	11/20/20 17:52	2
Molybdenum	0.047	D1	0.0050	mg/L		11/02/20 10:09	11/20/20 17:52	2
Selenium	0.0089		0.0050	mg/L		11/02/20 10:09	11/30/20 13:09	2
Thallium	ND	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:52	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020	mg/L		10/28/20 18:28	10/29/20 17:41	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	7800	D2	100	mg/L			10/27/20 08:45	1
pH	7.5	H5	1.7	SU			11/04/20 16:10	1
Temperature	7.2	H5	0.1	Degrees C			11/04/20 16:10	1
Ammonia	ND		0.50	mg/L			11/07/20 14:00	1
Total Organic Carbon	1.5		0.50	mg/L			11/04/20 17:42	1

Client Sample ID: CH-CCR-M69-1020

Lab Sample ID: 550-151758-8

Date Collected: 10/23/20 09:47

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	1.1		0.10	mg/L		10/28/20 09:43	11/06/20 20:22	1
Manganese	8.1		0.010	mg/L		10/28/20 09:43	11/06/20 20:22	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0047	D1	0.0020	mg/L		10/27/20 06:29	11/20/20 10:34	4
Cobalt	0.027	D1	0.0020	mg/L		10/27/20 06:29	11/20/20 10:34	4

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.5		0.50	mg/L			10/27/20 14:25	1
Dissolved Organic Carbon - Duplicate	1.5		0.50	mg/L			10/27/20 14:25	1
Dissolved Organic Carbon - Quad	1.5		0.50	mg/L			10/27/20 14:25	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-M70-1020

Lab Sample ID: 550-151758-9

Date Collected: 10/23/20 07:57

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2200	D2	400	mg/L			10/29/20 01:11	200
Fluoride	1.1	D1	0.80	mg/L			10/29/20 00:52	2
Nitrate Nitrite as N	0.40	D1	0.25	mg/L			10/28/20 20:33	5
Sulfate	2600	D2	400	mg/L			10/29/20 01:11	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		10/29/20 11:02	11/06/20 03:20	1
Lithium	0.20		0.020	mg/L		11/17/20 15:45	11/18/20 17:56	1
Boron	2.1		0.050	mg/L		10/29/20 11:02	11/06/20 03:20	1
Calcium	660		2.0	mg/L		10/29/20 11:02	11/06/20 03:20	1
Iron	ND		0.10	mg/L		10/29/20 11:02	11/06/20 03:20	1
Manganese	1.8		0.010	mg/L		10/29/20 11:02	11/06/20 03:20	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	mg/L		11/02/20 10:09	11/12/20 22:40	2
Arsenic	0.0013	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:21	2
Barium	0.013	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:21	2
Cadmium	0.00038		0.00020	mg/L		11/02/20 10:09	11/12/20 22:40	2
Chromium	ND		0.0020	mg/L		11/02/20 10:09	11/12/20 22:40	2
Cobalt	0.022		0.0010	mg/L		11/02/20 10:09	11/12/20 22:40	2
Lead	0.0025		0.0010	mg/L		11/02/20 10:09	11/12/20 22:40	2
Molybdenum	0.031		0.0010	mg/L		11/02/20 10:09	11/12/20 22:40	2
Selenium	0.0028	D1	0.0020	mg/L		11/02/20 10:09	12/07/20 11:43	4
Thallium	ND		0.00020	mg/L		11/02/20 10:09	11/12/20 22:40	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020	mg/L		10/28/20 18:28	10/29/20 17:42	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	6900	D2	100	mg/L			10/27/20 08:45	1
pH	7.4	H5	1.7	SU			11/04/20 16:10	1
Temperature	6.7	H5	0.1	Degrees C			11/04/20 16:10	1
Ammonia	ND		0.50	mg/L			11/07/20 14:08	1
Total Organic Carbon	1.1		0.50	mg/L			10/28/20 15:25	1

Client Sample ID: CH-CCR-M70-1020

Lab Sample ID: 550-151758-10

Date Collected: 10/23/20 07:57

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10	mg/L		10/28/20 09:43	11/06/20 20:26	1
Manganese	1.7		0.010	mg/L		10/28/20 09:43	11/06/20 20:26	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0032	D1	0.0020	mg/L		10/27/20 06:29	11/20/20 10:32	4

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-M70-1020

Lab Sample ID: 550-151758-10

Date Collected: 10/23/20 07:57

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.8 LL - Metals (ICP/MS) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.023	D1	0.0020	mg/L		10/27/20 06:29	11/20/20 10:32	4

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.2		0.50	mg/L			10/27/20 14:37	1
Dissolved Organic Carbon - Duplicate	1.2		0.50	mg/L			10/27/20 14:37	1
Dissolved Organic Carbon - Quad	1.2		0.50	mg/L			10/27/20 14:37	1

Client Sample ID: CH-CCR-W301-1020

Lab Sample ID: 550-151758-11

Date Collected: 10/22/20 09:05

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6600	D2	400	mg/L			10/29/20 01:48	200
Fluoride	ND	D1 D5	0.80	mg/L			10/29/20 01:29	2
Nitrate Nitrite as N	20	D1	0.25	mg/L			10/28/20 21:00	5
Sulfate	3800	D2	400	mg/L			10/29/20 01:48	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		10/29/20 11:02	11/06/20 03:24	1
Lithium	0.57		0.020	mg/L		11/17/20 15:45	11/18/20 18:00	1
Boron	0.58		0.050	mg/L		10/29/20 11:02	11/06/20 03:24	1
Calcium	780		2.0	mg/L		10/29/20 11:02	11/06/20 03:24	1
Iron	ND		0.10	mg/L		10/29/20 11:02	11/06/20 03:24	1
Manganese	1.6		0.010	mg/L		10/29/20 11:02	11/06/20 03:24	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	mg/L		11/02/20 10:09	11/12/20 22:43	2
Arsenic	0.0032	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:23	2
Barium	0.0083	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:23	2
Cadmium	ND		0.00020	mg/L		11/02/20 10:09	11/12/20 22:43	2
Chromium	ND		0.0020	mg/L		11/02/20 10:09	11/12/20 22:43	2
Cobalt	0.022		0.0010	mg/L		11/02/20 10:09	11/12/20 22:43	2
Lead	ND		0.0010	mg/L		11/02/20 10:09	11/12/20 22:43	2
Molybdenum	0.0057		0.0010	mg/L		11/02/20 10:09	11/12/20 22:43	2
Selenium	0.0035		0.0010	mg/L		11/02/20 10:09	11/30/20 12:47	2
Thallium	ND		0.00020	mg/L		11/02/20 10:09	11/12/20 22:43	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020	mg/L		10/27/20 18:23	10/28/20 15:24	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	13000	D2	200	mg/L			10/27/20 08:45	1
pH	7.4	H5	1.7	SU			11/04/20 16:10	1
Temperature	6.7	H5	0.1	Degrees C			11/04/20 16:10	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W301-1020

Lab Sample ID: 550-151758-11

Date Collected: 10/22/20 09:05

Matrix: Water

Date Received: 10/26/20 14:25

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.50	mg/L			11/07/20 14:16	1
Total Organic Carbon	2.6		0.50	mg/L			10/28/20 15:37	1

Client Sample ID: CH-CCR-W301-1020

Lab Sample ID: 550-151758-12

Date Collected: 10/22/20 09:05

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10	mg/L		10/28/20 09:43	11/06/20 20:30	1
Manganese	1.6		0.010	mg/L		10/28/20 09:43	11/06/20 20:30	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0020	mg/L		10/27/20 06:29	11/20/20 10:36	4
Cobalt	0.022	D1	0.0020	mg/L		10/27/20 06:29	11/20/20 10:36	4

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	2.7		0.50	mg/L			10/28/20 11:38	1
Dissolved Organic Carbon - Duplicate	2.7		0.50	mg/L			10/28/20 11:38	1
Dissolved Organic Carbon - Quad	2.7		0.50	mg/L			10/28/20 11:38	1

Client Sample ID: CH-CCR-W302-1020

Lab Sample ID: 550-151758-13

Date Collected: 10/23/20 12:50

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3200	D2	400	mg/L			10/29/20 02:24	200
Fluoride	0.82	D1	0.80	mg/L			10/29/20 02:06	2
Nitrate Nitrite as N	ND	D1 D5	0.25	mg/L			10/28/20 22:23	5
Sulfate	2300	D2	400	mg/L			10/29/20 02:24	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		10/29/20 11:02	11/06/20 03:28	1
Lithium	0.37		0.020	mg/L		11/17/20 15:45	11/18/20 18:03	1
Boron	0.57		0.050	mg/L		10/29/20 11:02	11/06/20 03:28	1
Calcium	640		2.0	mg/L		10/29/20 11:02	11/06/20 03:28	1
Iron	0.19		0.10	mg/L		10/29/20 11:02	11/06/20 03:28	1
Manganese	0.057		0.010	mg/L		10/29/20 11:02	11/06/20 03:28	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	mg/L		11/02/20 10:09	11/12/20 22:45	2
Arsenic	0.0013	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:25	2
Barium	0.014	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:25	2
Cadmium	ND		0.00020	mg/L		11/02/20 10:09	11/12/20 22:45	2
Chromium	0.031		0.0020	mg/L		11/02/20 10:09	11/12/20 22:45	2
Cobalt	0.0052		0.0010	mg/L		11/02/20 10:09	11/12/20 22:45	2

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W302-1020

Lab Sample ID: 550-151758-13

Date Collected: 10/23/20 12:50

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0010	mg/L		11/02/20 10:09	11/12/20 22:45	2
Molybdenum	0.0085		0.0010	mg/L		11/02/20 10:09	11/12/20 22:45	2
Selenium	ND	B3	0.0010	mg/L		11/02/20 10:09	11/12/20 22:45	2
Thallium	ND		0.00020	mg/L		11/02/20 10:09	11/12/20 22:45	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020	mg/L		10/28/20 18:28	10/29/20 17:44	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	7700	D2	100	mg/L			10/27/20 08:45	1
pH	7.3	H5	1.7	SU			11/04/20 16:10	1
Temperature	7.2	H5	0.1	Degrees C			11/04/20 16:10	1
Ammonia	ND		0.50	mg/L			11/07/20 14:23	1
Total Organic Carbon	0.57		0.50	mg/L			10/28/20 16:09	1

Client Sample ID: CH-CCR-W302-1020

Lab Sample ID: 550-151758-14

Date Collected: 10/23/20 12:50

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.12		0.10	mg/L		10/28/20 09:43	11/06/20 20:34	1
Manganese	0.048		0.010	mg/L		10/28/20 09:43	11/06/20 20:34	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0020	mg/L		10/27/20 06:29	11/20/20 10:43	4
Cobalt	0.0056	D1	0.0020	mg/L		10/27/20 06:29	11/20/20 10:43	4

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	0.75		0.50	mg/L			10/27/20 15:02	1
Dissolved Organic Carbon - Duplicate	0.75		0.50	mg/L			10/27/20 15:02	1
Dissolved Organic Carbon - Quad	0.75		0.50	mg/L			10/27/20 15:02	1

Client Sample ID: CH-CCR-W303-1020

Lab Sample ID: 550-151758-15

Date Collected: 10/22/20 10:16

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2800	D2	400	mg/L			10/29/20 03:01	200
Fluoride	ND	D1 D5	0.80	mg/L			10/29/20 02:43	2
Nitrate Nitrite as N	ND	D1 D5	0.25	mg/L			10/28/20 22:50	5
Sulfate	3400	D2	400	mg/L			10/29/20 03:01	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		10/29/20 11:02	11/06/20 03:31	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W303-1020

Lab Sample ID: 550-151758-15

Date Collected: 10/22/20 10:16

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.32		0.020	mg/L		11/17/20 15:45	11/18/20 18:27	1
Boron	3.2		0.050	mg/L		10/29/20 11:02	11/06/20 03:31	1
Calcium	660		2.0	mg/L		10/29/20 11:02	11/06/20 03:31	1
Iron	0.14		0.10	mg/L		10/29/20 11:02	11/06/20 03:31	1
Manganese	0.10		0.010	mg/L		10/29/20 11:02	11/06/20 03:31	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	mg/L		11/02/20 10:09	11/12/20 22:47	2
Arsenic	0.0014	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:27	2
Barium	0.0046	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:27	2
Cadmium	ND		0.00020	mg/L		11/02/20 10:09	11/12/20 22:47	2
Chromium	0.025		0.0020	mg/L		11/02/20 10:09	11/12/20 22:47	2
Cobalt	0.021		0.0010	mg/L		11/02/20 10:09	11/12/20 22:47	2
Lead	ND		0.0010	mg/L		11/02/20 10:09	11/12/20 22:47	2
Molybdenum	0.019		0.0010	mg/L		11/02/20 10:09	11/12/20 22:47	2
Selenium	ND	B3	0.0010	mg/L		11/02/20 10:09	11/12/20 22:47	2
Thallium	ND		0.00020	mg/L		11/02/20 10:09	11/12/20 22:47	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020	mg/L		10/27/20 18:23	10/28/20 15:26	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	8600	D2	100	mg/L			10/27/20 08:45	1
pH	7.4	H5	1.7	SU			11/04/20 16:10	1
Temperature	6.9	H5	0.1	Degrees C			11/04/20 16:10	1
Ammonia	ND		0.50	mg/L			11/07/20 14:32	1
Total Organic Carbon	1.1		0.50	mg/L			11/04/20 17:53	1

Client Sample ID: CH-CCR-W303-1020

Lab Sample ID: 550-151758-16

Date Collected: 10/22/20 10:16

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10	mg/L		10/28/20 09:43	11/06/20 20:37	1
Manganese	0.11		0.010	mg/L		10/28/20 09:43	11/06/20 20:37	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0023	D1	0.0020	mg/L		10/27/20 06:29	11/20/20 10:45	4
Cobalt	0.023	D1	0.0020	mg/L		10/27/20 06:29	11/20/20 10:45	4

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.2		0.50	mg/L			10/27/20 15:15	1
Dissolved Organic Carbon - Duplicate	1.2		0.50	mg/L			10/27/20 15:15	1
Dissolved Organic Carbon - Quad	1.2		0.50	mg/L			10/27/20 15:15	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W304-1020

Lab Sample ID: 550-151758-17

Date Collected: 10/23/20 14:05

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3000	D2	400	mg/L			10/29/20 03:38	200
Fluoride	ND	D1 D5	0.80	mg/L			10/29/20 03:20	2
Nitrate Nitrite as N	ND	D1 D5	0.25	mg/L			10/28/20 23:17	5
Sulfate	2900	D2	400	mg/L			10/29/20 03:38	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		10/29/20 11:02	11/06/20 03:35	1
Lithium	0.45		0.020	mg/L		11/17/20 15:45	11/18/20 18:40	1
Boron	0.44		0.050	mg/L		10/29/20 11:02	11/06/20 03:35	1
Calcium	600		2.0	mg/L		10/29/20 11:02	11/06/20 03:35	1
Iron	0.20		0.10	mg/L		10/29/20 11:02	11/06/20 03:35	1
Manganese	1.2		0.010	mg/L		10/29/20 11:02	11/06/20 03:35	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0020	mg/L		11/02/20 10:09	11/12/20 22:49	2
Arsenic	0.0010	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:29	2
Barium	0.0091	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:29	2
Cadmium	ND		0.00020	mg/L		11/02/20 10:09	11/12/20 22:49	2
Chromium	ND		0.0020	mg/L		11/02/20 10:09	11/12/20 22:49	2
Cobalt	0.0029		0.0010	mg/L		11/02/20 10:09	11/12/20 22:49	2
Lead	ND		0.0010	mg/L		11/02/20 10:09	11/12/20 22:49	2
Molybdenum	0.0028		0.0010	mg/L		11/02/20 10:09	11/12/20 22:49	2
Selenium	ND	B3	0.0010	mg/L		11/02/20 10:09	11/12/20 22:49	2
Thallium	ND		0.00020	mg/L		11/02/20 10:09	11/12/20 22:49	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020	mg/L		10/28/20 18:28	10/29/20 17:45	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	8500	D2	100	mg/L			10/28/20 09:27	1
pH	7.4	H5	1.7	SU			11/04/20 16:10	1
Temperature	7.8	H5	0.1	Degrees C			11/04/20 16:10	1
Ammonia	ND		0.50	mg/L			11/07/20 14:38	1
Total Organic Carbon	0.62		0.50	mg/L			10/28/20 16:32	1

Client Sample ID: CH-CCR-W304-1020

Lab Sample ID: 550-151758-18

Date Collected: 10/23/20 14:05

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.18		0.10	mg/L		10/28/20 09:43	11/06/20 20:49	1
Manganese	1.1		0.010	mg/L		10/28/20 09:43	11/06/20 20:49	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0020	mg/L		10/27/20 06:29	11/20/20 10:47	4

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W304-1020

Lab Sample ID: 550-151758-18

Date Collected: 10/23/20 14:05

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.8 LL - Metals (ICP/MS) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.0034	D1	0.0020	mg/L		10/27/20 06:29	11/20/20 10:47	4

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.3		0.50	mg/L			10/27/20 15:28	1
Dissolved Organic Carbon - Duplicate	1.3		0.50	mg/L			10/27/20 15:28	1
Dissolved Organic Carbon - Quad	1.3		0.50	mg/L			10/27/20 15:28	1

Client Sample ID: CH-CCR-FD03-1020

Lab Sample ID: 550-151758-19

Date Collected: 10/23/20 07:57

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2200	D2	400	mg/L			10/29/20 20:02	200
Fluoride	1.1	D1	0.80	mg/L			10/29/20 19:44	2
Nitrate Nitrite as N	ND	D1 D5	0.25	mg/L			10/29/20 00:12	5
Sulfate	2600	D2	400	mg/L			10/29/20 20:02	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		10/29/20 11:02	11/06/20 03:47	1
Lithium	0.19		0.020	mg/L		11/17/20 15:45	11/18/20 18:44	1
Boron	2.1		0.050	mg/L		10/29/20 11:02	11/06/20 03:47	1
Calcium	680		2.0	mg/L		10/29/20 11:02	11/06/20 03:47	1
Iron	ND		0.10	mg/L		10/29/20 11:02	11/06/20 03:47	1
Manganese	1.8		0.010	mg/L		10/29/20 11:02	11/06/20 03:47	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0020	mg/L		11/02/20 10:09	11/20/20 17:35	2
Arsenic	0.0020	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:35	2
Barium	0.013	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:35	2
Cadmium	0.00042	D1	0.00020	mg/L		11/02/20 10:09	11/20/20 17:35	2
Chromium	ND	D1	0.0020	mg/L		11/02/20 10:09	11/20/20 17:35	2
Cobalt	0.022	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:35	2
Lead	0.0022	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:35	2
Molybdenum	0.030	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:35	2
Selenium	0.0027		0.0010	mg/L		11/02/20 10:09	11/30/20 12:49	2
Thallium	ND	D1	0.00020	mg/L		11/02/20 10:09	11/20/20 17:35	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020	mg/L		10/28/20 18:28	10/29/20 17:47	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	6900	D2	100	mg/L			10/28/20 09:27	1
pH	7.4	H5	1.7	SU			11/04/20 16:10	1
Temperature	8.0	H5	0.1	Degrees C			11/04/20 16:10	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-FD03-1020

Lab Sample ID: 550-151758-19

Date Collected: 10/23/20 07:57

Matrix: Water

Date Received: 10/26/20 14:25

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.50	mg/L			11/07/20 15:05	1
Total Organic Carbon	1.0		0.50	mg/L			11/04/20 18:04	1

Client Sample ID: CH-CCR-FD03-1020

Lab Sample ID: 550-151758-20

Date Collected: 10/23/20 07:57

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10	mg/L		10/28/20 09:43	11/06/20 20:52	1
Manganese	1.6		0.010	mg/L		10/28/20 09:43	11/06/20 20:52	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0020	mg/L		10/27/20 06:29	11/20/20 10:49	4
Cobalt	0.021	D1	0.0020	mg/L		10/27/20 06:29	11/20/20 10:49	4

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.1		0.50	mg/L			10/27/20 15:41	1
Dissolved Organic Carbon - Duplicate	1.1		0.50	mg/L			10/27/20 15:41	1
Dissolved Organic Carbon - Quad	1.1		0.50	mg/L			10/27/20 15:41	1

Client Sample ID: CH-CCR-W305-1020

Lab Sample ID: 550-151758-21

Date Collected: 10/22/20 12:47

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2500		400	mg/L			10/29/20 21:16	200
Fluoride	ND	D1 D5	0.80	mg/L			10/29/20 20:57	2
Nitrate Nitrite as N	ND	D1 D5	0.25	mg/L			10/29/20 00:40	5
Sulfate	2400		400	mg/L			10/29/20 21:16	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		10/29/20 11:02	11/06/20 03:50	1
Lithium	0.22		0.020	mg/L		11/17/20 15:45	11/18/20 19:00	1
Boron	0.34		0.050	mg/L		10/29/20 11:02	11/06/20 03:50	1
Calcium	720		2.0	mg/L		10/29/20 11:02	11/06/20 03:50	1
Iron	0.36		0.10	mg/L		10/29/20 11:02	11/06/20 03:50	1
Manganese	7.2		0.010	mg/L		10/29/20 11:02	11/06/20 03:50	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0020	mg/L		11/02/20 10:09	11/20/20 17:37	2
Arsenic	ND	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:37	2
Barium	0.013	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:37	2
Cadmium	ND	D1	0.00020	mg/L		11/02/20 10:09	11/20/20 17:37	2
Chromium	0.0025	D1	0.0020	mg/L		11/02/20 10:09	11/20/20 17:37	2
Cobalt	0.018	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:37	2

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W305-1020

Lab Sample ID: 550-151758-21

Date Collected: 10/22/20 12:47

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.0021	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:37	2
Molybdenum	0.022	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:37	2
Selenium	0.0036		0.0010	mg/L		11/02/20 10:09	11/30/20 12:51	2
Thallium	ND	D1	0.00020	mg/L		11/02/20 10:09	11/20/20 17:37	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020	mg/L		10/27/20 18:23	10/28/20 15:27	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	6900	D2	100	mg/L			10/27/20 08:45	1
pH	7.3	H5	1.7	SU			11/04/20 16:10	1
Temperature	8.2	H5	0.1	Degrees C			11/04/20 16:10	1
Ammonia	ND		0.50	mg/L			11/07/20 15:15	1
Total Organic Carbon	1.5		0.50	mg/L			10/28/20 16:56	1

Client Sample ID: CH-CCR-W305-1020

Lab Sample ID: 550-151758-22

Date Collected: 10/22/20 12:47

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.36		0.10	mg/L		10/28/20 09:43	11/06/20 20:56	1
Manganese	7.0		0.010	mg/L		10/28/20 09:43	11/06/20 20:56	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0020	mg/L		10/27/20 06:29	11/20/20 10:51	4
Cobalt	0.018	D1	0.0010	mg/L		10/27/20 06:29	11/09/20 20:29	2

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.7	M2	0.50	mg/L			10/27/20 16:57	1
Dissolved Organic Carbon - Duplicate	1.7	M2	0.50	mg/L			10/27/20 16:57	1
Dissolved Organic Carbon - Quad	1.7	M2	0.50	mg/L			10/27/20 16:57	1

Client Sample ID: CH-CCR-W306-1020

Lab Sample ID: 550-151758-23

Date Collected: 10/22/20 13:55

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2100		400	mg/L			10/29/20 21:52	200
Fluoride	1.1	D1	0.80	mg/L			10/29/20 21:34	2
Nitrate Nitrite as N	ND	D1 D5	0.25	mg/L			10/29/20 01:07	5
Sulfate	13000		400	mg/L			10/29/20 21:52	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		10/29/20 11:02	11/06/20 03:54	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W306-1020

Lab Sample ID: 550-151758-23

Date Collected: 10/22/20 13:55

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.73		0.020	mg/L		11/17/20 15:45	11/18/20 19:04	1
Boron	0.94		0.050	mg/L		10/29/20 11:02	11/06/20 03:54	1
Calcium	440		2.0	mg/L		10/29/20 11:02	11/06/20 03:54	1
Iron	0.11		0.10	mg/L		10/29/20 11:02	11/06/20 03:54	1
Manganese	ND		0.010	mg/L		10/29/20 11:02	11/06/20 03:54	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0040	mg/L		11/02/20 10:09	11/20/20 17:39	4
Arsenic	0.014	D1	0.0020	mg/L		11/02/20 10:09	11/20/20 17:39	4
Barium	0.022	D1	0.0020	mg/L		11/02/20 10:09	11/20/20 17:39	4
Cadmium	ND	D1	0.00040	mg/L		11/02/20 10:09	11/20/20 17:39	4
Chromium	ND	D1	0.0040	mg/L		11/02/20 10:09	11/20/20 17:39	4
Cobalt	0.0030	D1	0.0020	mg/L		11/02/20 10:09	11/20/20 17:39	4
Lead	ND	D1	0.0020	mg/L		11/02/20 10:09	11/20/20 17:39	4
Molybdenum	0.073	D1	0.0020	mg/L		11/02/20 10:09	11/20/20 17:39	4
Selenium	0.0055	D1	0.0020	mg/L		11/02/20 10:09	11/30/20 14:29	4
Thallium	ND	D1	0.00040	mg/L		11/02/20 10:09	11/20/20 17:39	4

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020	mg/L		10/27/20 18:23	10/28/20 15:32	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	18000	D2	200	mg/L			10/27/20 08:45	1
pH	7.7	H5	1.7	SU			11/04/20 16:10	1
Temperature	9.0	H5	0.1	Degrees C			11/04/20 16:10	1
Ammonia	ND		0.50	mg/L			11/07/20 15:24	1
Total Organic Carbon	2.2		0.50	mg/L			10/28/20 17:08	1

Client Sample ID: CH-CCR-W306-1020

Lab Sample ID: 550-151758-24

Date Collected: 10/22/20 13:55

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.10		0.10	mg/L		10/28/20 09:43	11/06/20 21:00	1
Manganese	ND		0.010	mg/L		10/28/20 09:43	11/06/20 21:00	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0071	D1	0.0020	mg/L		10/27/20 06:29	11/20/20 10:53	4
Cobalt	ND	D1	0.0020	mg/L		10/27/20 06:29	11/20/20 10:53	4

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	2.2		0.50	mg/L			10/27/20 17:33	1
Dissolved Organic Carbon - Duplicate	2.2		0.50	mg/L			10/27/20 17:33	1
Dissolved Organic Carbon - Quad	2.2		0.50	mg/L			10/27/20 17:33	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W307-1020

Lab Sample ID: 550-151758-25

Date Collected: 10/23/20 15:20

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3100		400	mg/L			10/29/20 23:06	200
Fluoride	ND	D1 D5	0.80	mg/L			10/29/20 22:48	2
Nitrate Nitrite as N	ND	D1 D5	0.25	mg/L			10/29/20 02:02	5
Sulfate	2800		400	mg/L			10/29/20 23:06	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		10/29/20 11:02	11/06/20 05:55	1
Lithium	0.26		0.020	mg/L		11/17/20 15:45	11/18/20 19:07	1
Boron	2.5		0.050	mg/L		10/29/20 11:02	11/06/20 05:55	1
Calcium	810		2.0	mg/L		10/29/20 11:02	11/06/20 05:55	1
Iron	0.17		0.10	mg/L		10/29/20 11:02	11/06/20 05:55	1
Manganese	0.042		0.010	mg/L		10/29/20 11:02	11/06/20 05:55	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0020	mg/L		11/02/20 10:09	11/20/20 17:42	2
Arsenic	0.0014	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:42	2
Barium	0.013	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:42	2
Cadmium	0.00064	D1	0.00020	mg/L		11/02/20 10:09	11/20/20 17:42	2
Chromium	0.013	D1	0.0020	mg/L		11/02/20 10:09	11/20/20 17:42	2
Cobalt	0.069	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:42	2
Lead	0.0011	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:42	2
Molybdenum	0.018	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:42	2
Selenium	0.0024		0.0010	mg/L		11/02/20 10:09	11/30/20 13:28	2
Thallium	ND	D1	0.00020	mg/L		11/02/20 10:09	11/20/20 17:42	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020	mg/L		10/28/20 18:28	10/29/20 17:51	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	8100	D2	100	mg/L			10/28/20 09:27	1
pH	7.2	H5	1.7	SU			11/04/20 16:10	1
Temperature	9.5	H5	0.1	Degrees C			11/04/20 16:10	1
Ammonia	ND		0.50	mg/L			11/07/20 15:31	1
Total Organic Carbon	1.1		0.50	mg/L			10/28/20 17:19	1

Client Sample ID: CH-CCR-W307-1020

Lab Sample ID: 550-151758-26

Date Collected: 10/23/20 15:20

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.16		0.10	mg/L		10/28/20 09:43	11/06/20 21:04	1
Manganese	0.041		0.010	mg/L		10/28/20 09:43	11/06/20 21:04	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0022	D1	0.0020	mg/L		10/27/20 06:29	11/20/20 10:55	4

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W307-1020

Lab Sample ID: 550-151758-26

Date Collected: 10/23/20 15:20

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.8 LL - Metals (ICP/MS) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.069	D1	0.0010	mg/L		10/27/20 06:29	11/09/20 20:33	2

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.3		0.50	mg/L			10/27/20 17:43	1
Dissolved Organic Carbon - Duplicate	1.3		0.50	mg/L			10/27/20 17:43	1
Dissolved Organic Carbon - Quad	1.3		0.50	mg/L			10/27/20 17:43	1

Client Sample ID: CH-CCR-W308-1020

Lab Sample ID: 550-151758-27

Date Collected: 10/24/20 08:04

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3400		400	mg/L			10/29/20 23:43	200
Fluoride	ND	D1 D5	0.80	mg/L			10/29/20 23:24	2
Nitrate Nitrite as N	0.68	D1	0.25	mg/L			10/29/20 02:29	5
Sulfate	2800		400	mg/L			10/29/20 23:43	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		10/29/20 11:02	11/06/20 05:58	1
Lithium	0.42		0.020	mg/L		11/17/20 15:45	11/18/20 19:11	1
Boron	0.41		0.050	mg/L		10/29/20 11:02	11/06/20 05:58	1
Calcium	820		2.0	mg/L		10/29/20 11:02	11/06/20 05:58	1
Iron	0.12		0.10	mg/L		10/29/20 11:02	11/06/20 05:58	1
Manganese	0.34		0.010	mg/L		10/29/20 11:02	11/06/20 05:58	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0020	mg/L		11/02/20 10:09	11/20/20 17:44	2
Arsenic	0.0024	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:44	2
Barium	0.0084	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:44	2
Cadmium	ND	D1	0.00020	mg/L		11/02/20 10:09	11/20/20 17:44	2
Chromium	0.028	D1	0.0020	mg/L		11/02/20 10:09	11/20/20 17:44	2
Cobalt	0.0027	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:44	2
Lead	ND	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:44	2
Molybdenum	0.0031	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:44	2
Selenium	0.012		0.0010	mg/L		11/02/20 10:09	11/30/20 13:03	2
Thallium	ND	D1	0.00020	mg/L		11/02/20 10:09	11/20/20 17:44	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020	mg/L		10/28/20 18:28	10/29/20 17:53	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	8700	D2	100	mg/L			10/28/20 09:27	1
pH	7.0	H5	1.7	SU			11/04/20 16:10	1
Temperature	9.9	H5	0.1	Degrees C			11/04/20 16:10	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W308-1020

Lab Sample ID: 550-151758-27

Date Collected: 10/24/20 08:04

Matrix: Water

Date Received: 10/26/20 14:25

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.50	mg/L			11/07/20 15:37	1
Total Organic Carbon	0.93		0.50	mg/L			10/28/20 17:32	1

Client Sample ID: CH-CCR-W308-1020

Lab Sample ID: 550-151758-28

Date Collected: 10/24/20 08:04

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10	mg/L		10/28/20 09:43	11/06/20 21:08	1
Manganese	0.32		0.010	mg/L		10/28/20 09:43	11/06/20 21:08	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0020	mg/L		10/27/20 06:29	11/20/20 10:57	4
Cobalt	0.080	D1	0.0020	mg/L		10/27/20 06:29	11/20/20 10:57	4

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	0.95		0.50	mg/L			10/27/20 17:54	1
Dissolved Organic Carbon - Duplicate	0.94		0.50	mg/L			10/27/20 17:54	1
Dissolved Organic Carbon - Quad	0.95		0.50	mg/L			10/27/20 17:54	1

Client Sample ID: CH-CCR-W309-1020

Lab Sample ID: 550-151758-29

Date Collected: 10/24/20 10:10

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1700	D2	400	mg/L			10/30/20 00:56	200
Fluoride	1.1	D1	0.80	mg/L			10/30/20 00:38	2
Nitrate Nitrite as N	3.2	D1	0.25	mg/L			10/29/20 14:54	5
Sulfate	3400	D2	400	mg/L			10/30/20 00:56	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		10/29/20 11:02	11/06/20 06:02	1
Lithium	0.33		0.020	mg/L		11/17/20 15:45	11/18/20 19:14	1
Boron	0.43		0.050	mg/L		10/29/20 11:02	11/06/20 06:02	1
Calcium	450		2.0	mg/L		10/29/20 11:02	11/06/20 06:02	1
Iron	0.11		0.10	mg/L		10/29/20 11:02	11/06/20 06:02	1
Manganese	0.56		0.010	mg/L		10/29/20 11:02	11/06/20 06:02	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0020	mg/L		11/02/20 10:09	11/20/20 17:46	2
Arsenic	0.0089	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:46	2
Barium	0.0071	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:46	2
Cadmium	ND	D1	0.00020	mg/L		11/02/20 10:09	11/20/20 17:46	2
Chromium	0.11	D1	0.0020	mg/L		11/02/20 10:09	11/20/20 17:46	2
Cobalt	ND	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:46	2

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W309-1020

Lab Sample ID: 550-151758-29

Date Collected: 10/24/20 10:10

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:46	2
Molybdenum	0.017	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:46	2
Selenium	0.21	B3 D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:46	2
Thallium	ND	D1	0.00020	mg/L		11/02/20 10:09	11/20/20 17:46	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020	mg/L		10/28/20 18:28	10/29/20 17:54	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	7100	D2	100	mg/L			10/28/20 09:27	1
pH	7.2	H5	1.7	SU			11/04/20 16:10	1
Temperature	9.1	H5	0.1	Degrees C			11/04/20 16:10	1
Ammonia	ND		0.50	mg/L			11/07/20 15:44	1
Total Organic Carbon	ND		0.50	mg/L			10/28/20 17:44	1

Client Sample ID: CH-CCR-W309-1020

Lab Sample ID: 550-151758-30

Date Collected: 10/24/20 10:10

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10	mg/L		10/28/20 09:43	11/06/20 21:11	1
Manganese	0.55		0.010	mg/L		10/28/20 09:43	11/06/20 21:11	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0093		0.0010	mg/L		11/02/20 10:09	11/20/20 17:12	2
Cobalt	ND		0.0010	mg/L		11/02/20 10:09	11/12/20 22:32	2

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	0.54		0.50	mg/L			10/27/20 18:07	1
Dissolved Organic Carbon - Duplicate	0.54		0.50	mg/L			10/27/20 18:07	1
Dissolved Organic Carbon - Quad	0.54		0.50	mg/L			10/27/20 18:07	1

Client Sample ID: CH-CCR-W314-1020

Lab Sample ID: 550-151758-31

Date Collected: 10/23/20 11:17

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2800	D2	400	mg/L			10/30/20 02:10	200
Fluoride	0.90	D1	0.80	mg/L			10/30/20 01:52	2
Nitrate Nitrite as N	4.5	D1	0.25	mg/L			10/29/20 16:44	5
Sulfate	2400	D2	400	mg/L			10/30/20 02:10	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		10/29/20 11:02	11/06/20 06:06	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W314-1020

Lab Sample ID: 550-151758-31

Date Collected: 10/23/20 11:17

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	0.31		0.020	mg/L		11/17/20 15:45	11/18/20 19:17	1
Boron	1.2		0.050	mg/L		10/29/20 11:02	11/06/20 06:06	1
Calcium	790		2.0	mg/L		10/29/20 11:02	11/06/20 06:06	1
Iron	ND		0.10	mg/L		10/29/20 11:02	11/06/20 06:06	1
Manganese	0.082		0.010	mg/L		10/29/20 11:02	11/06/20 06:06	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0020	mg/L		11/02/20 10:09	11/20/20 17:48	2
Arsenic	0.0019	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:48	2
Barium	0.011	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:48	2
Cadmium	0.00031	D1	0.00020	mg/L		11/02/20 10:09	11/20/20 17:48	2
Chromium	0.0091	D1	0.0020	mg/L		11/02/20 10:09	11/20/20 17:48	2
Cobalt	0.024	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:48	2
Lead	ND	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:48	2
Molybdenum	0.011	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:48	2
Selenium	0.0020		0.0010	mg/L		11/02/20 10:09	11/30/20 13:05	2
Thallium	ND	D1	0.00020	mg/L		11/02/20 10:09	11/20/20 17:48	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020	mg/L		10/28/20 18:28	10/29/20 17:56	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	7200	D2	100	mg/L			10/28/20 09:27	1
pH	7.2	H5	1.7	SU			11/04/20 16:10	1
Temperature	8.6	H5	0.1	Degrees C			11/04/20 16:10	1
Ammonia	ND		0.50	mg/L			11/07/20 15:50	1
Total Organic Carbon	0.95		0.50	mg/L			10/28/20 17:58	1

Client Sample ID: CH-CCR-W314-1020

Lab Sample ID: 550-151758-32

Date Collected: 10/23/20 11:17

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10	mg/L		10/28/20 09:43	11/06/20 21:15	1
Manganese	0.082		0.010	mg/L		10/28/20 09:43	11/06/20 21:15	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	0.0020	mg/L		10/27/20 06:29	11/20/20 10:59	4
Cobalt	0.025	D1	0.0010	mg/L		10/27/20 06:29	11/09/20 20:37	2

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	0.98		0.50	mg/L			10/28/20 12:02	1
Dissolved Organic Carbon - Duplicate	0.98		0.50	mg/L			10/28/20 12:02	1
Dissolved Organic Carbon - Quad	0.98		0.50	mg/L			10/28/20 12:02	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W317-1020

Lab Sample ID: 550-151758-33

Date Collected: 10/21/20 11:27

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1500	D2	400	mg/L			10/30/20 01:33	200
Fluoride	ND	D1 D5	0.80	mg/L			10/30/20 01:15	2
Sulfate	680	D2	400	mg/L			10/30/20 01:33	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		10/29/20 11:02	11/06/20 03:01	1
Lithium	0.064		0.020	mg/L		11/23/20 08:09	11/23/20 16:37	1
Boron	0.20		0.050	mg/L		10/29/20 11:02	11/06/20 03:01	1
Calcium	350	M3	2.0	mg/L		10/29/20 11:02	11/06/20 03:01	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0040	mg/L		11/02/20 10:09	11/20/20 17:54	2
Arsenic	0.0046	D1	0.0020	mg/L		11/02/20 10:09	11/20/20 17:54	2
Barium	0.036	D1	0.0020	mg/L		11/02/20 10:09	11/20/20 17:54	2
Cadmium	ND	D1	0.00040	mg/L		11/02/20 10:09	11/20/20 17:54	2
Chromium	0.0079	D1	0.0040	mg/L		11/02/20 10:09	11/20/20 17:54	2
Cobalt	ND	D1	0.0020	mg/L		11/02/20 10:09	11/20/20 17:54	2
Lead	ND	D1	0.0020	mg/L		11/02/20 10:09	11/20/20 17:54	2
Molybdenum	0.0041	D1	0.0020	mg/L		11/02/20 10:09	11/20/20 17:54	2
Selenium	0.0028		0.0020	mg/L		11/02/20 10:09	11/30/20 13:12	2
Thallium	ND	D1	0.00040	mg/L		11/02/20 10:09	11/20/20 17:54	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020	mg/L		10/27/20 18:23	10/28/20 15:33	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	3500	D2	100	mg/L			10/27/20 08:45	1
pH	7.6	H5	1.7	SU			11/04/20 16:10	1
Temperature	9.6	H5	0.1	Degrees C			11/04/20 16:10	1

Client Sample ID: CH-CCR-FD04-1020

Lab Sample ID: 550-151758-34

Date Collected: 10/23/20 15:20

Matrix: Water

Date Received: 10/26/20 14:25

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3100		400	mg/L			10/29/20 22:29	200
Fluoride	ND	D1 D5	0.80	mg/L			10/29/20 22:11	2
Nitrate Nitrite as N	ND	D1 D5	0.25	mg/L			10/29/20 17:12	5
Sulfate	2800		400	mg/L			10/29/20 22:29	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		10/29/20 11:02	11/06/20 06:10	1
Lithium	0.26		0.020	mg/L		11/17/20 15:45	11/18/20 19:21	1
Boron	2.5		0.050	mg/L		10/29/20 11:02	11/06/20 06:10	1
Calcium	790		2.0	mg/L		10/29/20 11:02	11/06/20 06:10	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-FD04-1020

Lab Sample ID: 550-151758-34

Date Collected: 10/23/20 15:20

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.18		0.10	mg/L		10/29/20 11:02	11/06/20 06:10	1
Manganese	0.042		0.010	mg/L		10/29/20 11:02	11/06/20 06:10	1

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND	D1	0.0020	mg/L		11/02/20 10:09	11/20/20 17:50	2
Arsenic	0.0014	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:50	2
Barium	0.013	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:50	2
Cadmium	0.00056	D1	0.00020	mg/L		11/02/20 10:09	11/20/20 17:50	2
Chromium	0.013	D1	0.0020	mg/L		11/02/20 10:09	11/20/20 17:50	2
Cobalt	0.070	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:50	2
Lead	0.0011	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:50	2
Molybdenum	0.017	D1	0.0010	mg/L		11/02/20 10:09	11/20/20 17:50	2
Selenium	0.0024		0.0010	mg/L		11/02/20 10:09	11/30/20 13:07	2
Thallium	ND	D1	0.00020	mg/L		11/02/20 10:09	11/20/20 17:50	2

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020	mg/L		10/28/20 18:28	10/29/20 17:57	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	8000	D2	100	mg/L			10/28/20 09:27	1
pH	7.3	H5	1.7	SU			11/04/20 16:10	1
Temperature	9.1	H5	0.1	Degrees C			11/04/20 16:10	1
Ammonia	ND		0.50	mg/L			11/07/20 15:57	1
Total Organic Carbon	1.1	M2	0.50	mg/L			10/28/20 19:12	1

Client Sample ID: CH-CCR-FD04-1020

Lab Sample ID: 550-151758-35

Date Collected: 10/23/20 15:20

Matrix: Water

Date Received: 10/26/20 14:25

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.17		0.10	mg/L		10/28/20 09:43	11/06/20 20:07	1
Manganese	0.041		0.010	mg/L		10/28/20 09:43	11/06/20 20:07	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0020	D1	0.0020	mg/L		10/27/20 06:29	11/20/20 11:01	4
Cobalt	0.074	D1	0.0010	mg/L		10/27/20 06:29	11/09/20 20:39	2

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.2		0.50	mg/L			10/27/20 18:30	1
Dissolved Organic Carbon - Duplicate	1.2		0.50	mg/L			10/27/20 18:30	1
Dissolved Organic Carbon - Quad	1.2		0.50	mg/L			10/27/20 18:30	1

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-224067/2

Matrix: Water

Analysis Batch: 224067

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0	mg/L			10/28/20 14:45	1
Fluoride	ND		0.40	mg/L			10/28/20 14:45	1
Sulfate	ND		2.0	mg/L			10/28/20 14:45	1

Lab Sample ID: LCS 550-224067/5

Matrix: Water

Analysis Batch: 224067

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	21.4		mg/L		107	90 - 110
Fluoride	4.00	4.08		mg/L		102	90 - 110
Sulfate	20.0	20.6		mg/L		103	90 - 110

Lab Sample ID: LCSD 550-224067/6

Matrix: Water

Analysis Batch: 224067

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	21.5		mg/L		107	90 - 110	0	20
Fluoride	4.00	4.07		mg/L		102	90 - 110	0	20
Sulfate	20.0	20.6		mg/L		103	90 - 110	0	20

Lab Sample ID: 550-151754-E-21 MS ^2

Matrix: Water

Analysis Batch: 224067

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	6.0	D1	8.00	14.2	D1	mg/L		103	80 - 120

Lab Sample ID: 550-151754-E-21 MS ^200

Matrix: Water

Analysis Batch: 224067

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	4900	M1 D2	4000	9730	D2	mg/L		120	80 - 120
Sulfate	2800	D2	4000	7310	D2	mg/L		114	80 - 120

Lab Sample ID: 550-151754-E-21 MSD ^2

Matrix: Water

Analysis Batch: 224067

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	6.0	D1	8.00	14.2	D1	mg/L		103	80 - 120	0	20

Lab Sample ID: 550-151754-E-21 MSD ^200

Matrix: Water

Analysis Batch: 224067

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	4900	M1 D2	4000	9820	D2 M1	mg/L		122	80 - 120	1	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-151754-E-21 MSD ^200

Matrix: Water

Analysis Batch: 224067

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	2800	D2	4000	7360	D2	mg/L		115	80 - 120	1	20

Lab Sample ID: MB 550-224068/2

Matrix: Water

Analysis Batch: 224068

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	ND		0.050	mg/L			10/28/20 14:18	1

Lab Sample ID: LCS 550-224068/5

Matrix: Water

Analysis Batch: 224068

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	8.00	8.42		mg/L		105	90 - 110

Lab Sample ID: LCSD 550-224068/6

Matrix: Water

Analysis Batch: 224068

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate Nitrite as N	8.00	8.44		mg/L		106	90 - 110	0	20

Lab Sample ID: 550-151758-1 MS

Matrix: Water

Analysis Batch: 224068

Client Sample ID: CH-CCR-M52-1020

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	ND	D1 D5	40.0	37.8	D1	mg/L		95	80 - 120

Lab Sample ID: 550-151758-1 MSD

Matrix: Water

Analysis Batch: 224068

Client Sample ID: CH-CCR-M52-1020

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate Nitrite as N	ND	D1 D5	40.0	38.8	D1	mg/L		97	80 - 120	3	20

Lab Sample ID: MB 550-224208/2

Matrix: Water

Analysis Batch: 224208

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	ND		0.050	mg/L			10/29/20 12:37	1

Lab Sample ID: LCS 550-224208/5

Matrix: Water

Analysis Batch: 224208

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	8.00	8.75		mg/L		109	90 - 110

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 550-224208/6

Matrix: Water

Analysis Batch: 224208

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate Nitrite as N	8.00	8.77		mg/L		110	90 - 110	0	20

Lab Sample ID: 550-151758-29 MS

Matrix: Water

Analysis Batch: 224208

Client Sample ID: CH-CCR-W309-1020

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate Nitrite as N	3.2	D1	40.0	44.4	D1	mg/L		103	80 - 120		

Lab Sample ID: 550-151758-29 MSD

Matrix: Water

Analysis Batch: 224208

Client Sample ID: CH-CCR-W309-1020

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate Nitrite as N	3.2	D1	40.0	48.2	D1	mg/L		113	80 - 120	8	20

Lab Sample ID: MB 550-224210/2

Matrix: Water

Analysis Batch: 224210

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0	mg/L			10/29/20 13:06	1
Fluoride	ND		0.40	mg/L			10/29/20 13:06	1
Sulfate	ND		2.0	mg/L			10/29/20 13:06	1

Lab Sample ID: LCS 550-224210/5

Matrix: Water

Analysis Batch: 224210

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	21.3		mg/L		106	90 - 110		
Fluoride	4.00	4.07		mg/L		102	90 - 110		
Sulfate	20.0	20.3		mg/L		102	90 - 110		

Lab Sample ID: LCSD 550-224210/6

Matrix: Water

Analysis Batch: 224210

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	22.0		mg/L		110	90 - 110	3	20
Fluoride	4.00	4.19		mg/L		105	90 - 110	3	20
Sulfate	20.0	21.1		mg/L		106	90 - 110	4	20

Lab Sample ID: 550-151757-A-5 MS ^50

Matrix: Water

Analysis Batch: 224210

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	2300	M2 D2	1000	2500	D2 M2	mg/L		18	80 - 120		
Fluoride	ND	D1 D5	200	204	D1	mg/L		100	80 - 120		

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-151757-A-5 MS ^50

Matrix: Water

Analysis Batch: 224210

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	570	D2	1000	1400	D2	mg/L		82	80 - 120

Lab Sample ID: 550-151757-A-5 MSD ^50

Matrix: Water

Analysis Batch: 224210

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	2300	M2 D2	1000	2560	D2 M2	mg/L		24	80 - 120	2	20
Fluoride	ND	D1 D5	200	213	D1	mg/L		105	80 - 120	4	20
Sulfate	570	D2	1000	1450	D2	mg/L		87	80 - 120	4	20

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 550-223989/1-A

Matrix: Water

Analysis Batch: 224991

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 223989

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10	mg/L		10/28/20 09:43	11/06/20 19:48	1
Manganese	ND		0.010	mg/L		10/28/20 09:43	11/06/20 19:48	1

Lab Sample ID: LCS 550-223989/2-A

Matrix: Water

Analysis Batch: 224991

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 223989

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	1.00	0.998		mg/L		100	85 - 115
Manganese	1.00	1.01		mg/L		101	85 - 115

Lab Sample ID: LCSD 550-223989/3-A

Matrix: Water

Analysis Batch: 224991

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 223989

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	1.00	1.01		mg/L		101	85 - 115	1	20
Manganese	1.00	1.01		mg/L		101	85 - 115	0	20

Lab Sample ID: MB 550-224142/1-A

Matrix: Water

Analysis Batch: 224878

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 224142

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		10/29/20 11:02	11/06/20 02:42	1
Boron	ND		0.050	mg/L		10/29/20 11:02	11/06/20 02:42	1
Calcium	ND		2.0	mg/L		10/29/20 11:02	11/06/20 02:42	1
Iron	ND		0.10	mg/L		10/29/20 11:02	11/06/20 02:42	1
Manganese	ND		0.010	mg/L		10/29/20 11:02	11/06/20 02:42	1

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: MB 550-224142/1-A

Matrix: Water

Analysis Batch: 225520

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 224142

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.050	mg/L		10/29/20 11:02	11/12/20 20:32	1
Calcium	ND		2.0	mg/L		10/29/20 11:02	11/12/20 20:32	1

Lab Sample ID: LCS 550-224142/2-A

Matrix: Water

Analysis Batch: 224878

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 224142

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	1.00	0.983		mg/L		98	85 - 115
Boron	1.00	1.01		mg/L		101	85 - 115
Calcium	21.0	20.7		mg/L		98	85 - 115
Iron	1.00	0.949		mg/L		95	85 - 115
Manganese	1.00	1.06		mg/L		106	85 - 115

Lab Sample ID: LCS 550-224142/2-A

Matrix: Water

Analysis Batch: 225520

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 224142

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	1.07		mg/L		107	85 - 115
Calcium	21.0	23.4		mg/L		112	85 - 115

Lab Sample ID: LCSD 550-224142/3-A

Matrix: Water

Analysis Batch: 224878

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 224142

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Beryllium	1.00	0.996		mg/L		100	85 - 115	1	20
Boron	1.00	1.01		mg/L		101	85 - 115	0	20
Calcium	21.0	20.9		mg/L		100	85 - 115	1	20
Iron	1.00	0.968		mg/L		97	85 - 115	2	20
Manganese	1.00	1.06		mg/L		106	85 - 115	0	20

Lab Sample ID: LCSD 550-224142/3-A

Matrix: Water

Analysis Batch: 225520

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 224142

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Boron	1.00	1.07		mg/L		107	85 - 115	0	20
Calcium	21.0	23.3		mg/L		111	85 - 115	1	20

Lab Sample ID: 550-151758-33 MS

Matrix: Water

Analysis Batch: 224878

Client Sample ID: CH-CCR-W317-1020

Prep Type: Total/NA

Prep Batch: 224142

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	ND		1.00	1.05		mg/L		105	70 - 130
Boron	0.20		1.00	1.24		mg/L		104	70 - 130
Calcium	350	M3	21.0	356	M3	mg/L		44	70 - 130
Iron	4.7		1.00	5.59	M3	mg/L		86	70 - 130

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 550-151758-33 MS

Matrix: Water

Analysis Batch: 224878

Client Sample ID: CH-CCR-W317-1020

Prep Type: Total/NA

Prep Batch: 224142

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Manganese	2.6		1.00	3.51		mg/L		93	70 - 130

Lab Sample ID: 550-151758-33 MS

Matrix: Water

Analysis Batch: 225520

Client Sample ID: CH-CCR-W317-1020

Prep Type: Total/NA

Prep Batch: 224142

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	0.21		1.00	1.33		mg/L		112	70 - 130
Calcium	380	M3	21.0	398	M3	mg/L		63	70 - 130

Lab Sample ID: 550-151758-33 MSD

Matrix: Water

Analysis Batch: 224878

Client Sample ID: CH-CCR-W317-1020

Prep Type: Total/NA

Prep Batch: 224142

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Beryllium	ND		1.00	1.07		mg/L		107	70 - 130	2	20
Boron	0.20		1.00	1.23		mg/L		103	70 - 130	1	20
Calcium	350	M3	21.0	360	M3	mg/L		64	70 - 130	1	20
Iron	4.7		1.00	5.66	M3	mg/L		93	70 - 130	1	20
Manganese	2.6		1.00	3.48		mg/L		90	70 - 130	1	20

Lab Sample ID: 550-151758-33 MSD

Matrix: Water

Analysis Batch: 225520

Client Sample ID: CH-CCR-W317-1020

Prep Type: Total/NA

Prep Batch: 224142

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Boron	0.21		1.00	1.32		mg/L		110	70 - 130	1	20
Calcium	380	M3	21.0	399	M3	mg/L		68	70 - 130	0	20

Lab Sample ID: MB 280-516897/1-A

Matrix: Water

Analysis Batch: 517283

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 516897

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.020	mg/L		11/17/20 15:45	11/18/20 16:15	1

Lab Sample ID: LCS 280-516897/2-A

Matrix: Water

Analysis Batch: 517283

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 516897

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	0.995		mg/L		99	90 - 112

Lab Sample ID: 550-151948-D-21-B MS

Matrix: Water

Analysis Batch: 517283

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 516897

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	ND		1.00	1.00		mg/L		99	70 - 130

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 550-151948-D-21-C MSD
Matrix: Water
Analysis Batch: 517283

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 516897

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	ND		1.00	0.997		mg/L		98	70 - 130	1	20

Lab Sample ID: MB 280-516898/1-A
Matrix: Water
Analysis Batch: 517283

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 516898

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.020	mg/L		11/17/20 15:45	11/18/20 18:20	1

Lab Sample ID: LCS 280-516898/2-A
Matrix: Water
Analysis Batch: 517283

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 516898

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	1.03		mg/L		103	90 - 112

Lab Sample ID: 550-151758-15 MS
Matrix: Water
Analysis Batch: 517283

Client Sample ID: CH-CCR-W303-1020
Prep Type: Total/NA
Prep Batch: 516898

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	0.32		1.00	1.41		mg/L		109	70 - 130

Lab Sample ID: 550-151758-15 MSD
Matrix: Water
Analysis Batch: 517283

Client Sample ID: CH-CCR-W303-1020
Prep Type: Total/NA
Prep Batch: 516898

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	0.32		1.00	1.39		mg/L		108	70 - 130	1	20

Lab Sample ID: MB 280-517511/1-A
Matrix: Water
Analysis Batch: 517950

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 517511

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.020	mg/L		11/23/20 08:09	11/23/20 16:27	1

Lab Sample ID: LCS 280-517511/2-A
Matrix: Water
Analysis Batch: 517950

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 517511

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	1.01		mg/L		101	90 - 112

Lab Sample ID: LCSD 280-517511/3-A
Matrix: Water
Analysis Batch: 517950

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 517511

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	1.00	1.00		mg/L		100	90 - 112	0	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: 550-151758-35 MS

Matrix: Water

Analysis Batch: 224991

Client Sample ID: CH-CCR-FD04-1020

Prep Type: Dissolved

Prep Batch: 223989

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.17		1.00	1.24		mg/L		107	70 - 130
Manganese	0.041		1.00	1.03		mg/L		99	70 - 130

Lab Sample ID: 550-151758-35 MSD

Matrix: Water

Analysis Batch: 224991

Client Sample ID: CH-CCR-FD04-1020

Prep Type: Dissolved

Prep Batch: 223989

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	0.17		1.00	1.26		mg/L		109	70 - 130	2	20
Manganese	0.041		1.00	1.04		mg/L		100	70 - 130	1	20

Method: 200.8 LL - Metals (ICP/MS)

Lab Sample ID: MB 550-223800/1-A

Matrix: Water

Analysis Batch: 226148

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 223800

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.00050	mg/L		10/27/20 06:29	11/20/20 10:11	1
Cobalt	ND		0.00050	mg/L		10/27/20 06:29	11/20/20 10:11	1

Lab Sample ID: LCS 550-223800/2-A

Matrix: Water

Analysis Batch: 226148

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 223800

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.0989		mg/L		99	85 - 115
Cobalt	0.100	0.0993		mg/L		99	85 - 115

Lab Sample ID: LCSD 550-223800/3-A

Matrix: Water

Analysis Batch: 226148

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 223800

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.100	0.102		mg/L		102	85 - 115	3	20
Cobalt	0.100	0.102		mg/L		102	85 - 115	2	20

Lab Sample ID: MB 550-224433/1-A

Matrix: Water

Analysis Batch: 225482

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 224433

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0010	mg/L		11/02/20 10:09	11/12/20 22:22	1
Cadmium	ND		0.00010	mg/L		11/02/20 10:09	11/12/20 22:22	1
Chromium	ND		0.0010	mg/L		11/02/20 10:09	11/12/20 22:22	1
Cobalt	ND		0.00050	mg/L		11/02/20 10:09	11/12/20 22:22	1
Lead	ND		0.00050	mg/L		11/02/20 10:09	11/12/20 22:22	1
Molybdenum	ND		0.00050	mg/L		11/02/20 10:09	11/12/20 22:22	1
Selenium	ND		0.00050	mg/L		11/02/20 10:09	11/12/20 22:22	1
Thallium	ND		0.00010	mg/L		11/02/20 10:09	11/12/20 22:22	1

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Method: 200.8 LL - Metals (ICP/MS)

Lab Sample ID: MB 550-224433/1-A
Matrix: Water
Analysis Batch: 226262

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 224433

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.00050	mg/L		11/02/20 10:09	11/20/20 17:02	1
Barium	ND		0.00050	mg/L		11/02/20 10:09	11/20/20 17:02	1

Lab Sample ID: LCS 550-224433/2-A
Matrix: Water
Analysis Batch: 225482

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 224433

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.100	0.0963		mg/L		96	85 - 115
Cadmium	0.100	0.0972		mg/L		97	85 - 115
Chromium	0.100	0.0970		mg/L		97	85 - 115
Cobalt	0.100	0.0981		mg/L		98	85 - 115
Lead	0.100	0.102		mg/L		102	85 - 115
Molybdenum	0.100	0.0960		mg/L		96	85 - 115
Selenium	0.100	0.104		mg/L		104	85 - 115
Thallium	0.100	0.101		mg/L		101	85 - 115

Lab Sample ID: LCS 550-224433/2-A
Matrix: Water
Analysis Batch: 226262

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 224433

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.100		mg/L		100	85 - 115
Barium	0.100	0.113		mg/L		113	85 - 115

Lab Sample ID: LCSD 550-224433/3-A
Matrix: Water
Analysis Batch: 225482

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 224433

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Antimony	0.100	0.0966		mg/L		97	85 - 115	0	20
Cadmium	0.100	0.0976		mg/L		98	85 - 115	0	20
Chromium	0.100	0.0967		mg/L		97	85 - 115	0	20
Cobalt	0.100	0.0994		mg/L		99	85 - 115	1	20
Lead	0.100	0.101		mg/L		101	85 - 115	1	20
Molybdenum	0.100	0.0969		mg/L		97	85 - 115	1	20
Selenium	0.100	0.106		mg/L		106	85 - 115	2	20
Thallium	0.100	0.101		mg/L		101	85 - 115	1	20

Lab Sample ID: LCSD 550-224433/3-A
Matrix: Water
Analysis Batch: 226262

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 224433

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Arsenic	0.100	0.101		mg/L		101	85 - 115	1	20
Barium	0.100	0.113		mg/L		113	85 - 115	1	20

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: 550-151758-2 MS

Matrix: Water

Analysis Batch: 226148

Client Sample ID: CH-CCR-M52-1020

Prep Type: Dissolved

Prep Batch: 223800

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Arsenic	ND	D1	0.100	0.112		mg/L		110	70 - 130		
Cobalt	0.070	D1	0.100	0.177		mg/L		107	70 - 130		

Lab Sample ID: 550-151758-2 MSD

Matrix: Water

Analysis Batch: 226148

Client Sample ID: CH-CCR-M52-1020

Prep Type: Dissolved

Prep Batch: 223800

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Arsenic	ND	D1	0.100	0.113		mg/L		111	70 - 130	1	20
Cobalt	0.070	D1	0.100	0.176		mg/L		106	70 - 130	0	20

Lab Sample ID: 550-151758-30 MS

Matrix: Water

Analysis Batch: 225482

Client Sample ID: CH-CCR-W309-1020

Prep Type: Dissolved

Prep Batch: 224433

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Antimony	ND	M2	0.100	0.0981	M2	mg/L		-118	70 - 130		
Cadmium	ND	M2	0.100	0.0927	M2	mg/L		-49	70 - 130		
Chromium	5.9	M3	0.100	0.105	M3	mg/L		-5821	70 - 130		
Cobalt	ND		0.100	0.0980		mg/L		98	70 - 130		
Lead	ND		0.100	0.0978		mg/L		98	70 - 130		
Molybdenum	7.9	M3	0.100	0.107	M3	mg/L		-7771	70 - 130		
Selenium	200	M3 B3	0.100	0.309	M3	mg/L		-2015	70 - 130		
Thallium	0.23	M2	0.100	0.0963	M2	mg/L		-132	70 - 130		

Lab Sample ID: 550-151758-30 MS

Matrix: Water

Analysis Batch: 226262

Client Sample ID: CH-CCR-W309-1020

Prep Type: Dissolved

Prep Batch: 224433

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Arsenic	0.0093		0.100	0.123		mg/L		114	70 - 130		
Barium	7.6	M3	0.100	0.134	M3	mg/L		-7492	70 - 130		

Lab Sample ID: 550-151758-30 MSD

Matrix: Water

Analysis Batch: 225482

Client Sample ID: CH-CCR-W309-1020

Prep Type: Dissolved

Prep Batch: 224433

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Antimony	ND	M2	0.100	0.101	M2	mg/L		-115	70 - 130	3	20
Cadmium	ND	M2	0.100	0.0922	M2	mg/L		-50	70 - 130	1	20
Chromium	5.9	M3	0.100	0.0956	M3	mg/L		-5830	70 - 130	9	20
Cobalt	ND		0.100	0.0905		mg/L		90	70 - 130	8	20
Lead	ND		0.100	0.0964		mg/L		96	70 - 130	1	20
Molybdenum	7.9	M3	0.100	0.108	M3	mg/L		-7770	70 - 130	1	20
Selenium	200	M3 B3	0.100	0.287	M3	mg/L		-2015	70 - 130	7	20
Thallium	0.23	M2	0.100	0.0948	M2	mg/L		-133	70 - 130	2	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: 550-151758-30 MSD

Matrix: Water

Analysis Batch: 226262

Client Sample ID: CH-CCR-W309-1020

Prep Type: Dissolved

Prep Batch: 224433

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.0093		0.100	0.120		mg/L		111	70 - 130	3	20
Barium	7.6	M3	0.100	0.131	M3	mg/L		-7495	70 - 130	2	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 550-223922/1-A

Matrix: Water

Analysis Batch: 224045

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 223922

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020	mg/L		10/27/20 18:23	10/28/20 15:06	1

Lab Sample ID: LCS 550-223922/2-A

Matrix: Water

Analysis Batch: 224045

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 223922

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Hg	0.00500	0.00475		mg/L		95	85 - 115

Lab Sample ID: LCSD 550-223922/3-A

Matrix: Water

Analysis Batch: 224045

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 223922

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hg	0.00500	0.00501		mg/L		100	85 - 115	5	20

Lab Sample ID: 550-151756-B-1-B MS

Matrix: Water

Analysis Batch: 224045

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 223922

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Hg	ND		0.00500	0.00508		mg/L		102	70 - 130

Lab Sample ID: 550-151756-B-1-C MSD

Matrix: Water

Analysis Batch: 224045

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 223922

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hg	ND		0.00500	0.00496		mg/L		99	70 - 130	2	20

Lab Sample ID: MB 550-224052/1-A

Matrix: Water

Analysis Batch: 224200

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 224052

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020	mg/L		10/28/20 18:28	10/29/20 17:26	1

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Method: 245.1 - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 550-224052/2-A
Matrix: Water
Analysis Batch: 224200

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 224052

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Hg	0.00500	0.00498		mg/L		100	85 - 115

Lab Sample ID: LCSD 550-224052/3-A
Matrix: Water
Analysis Batch: 224200

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 224052

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hg	0.00500	0.00508		mg/L		102	85 - 115	2	20

Lab Sample ID: 550-151754-G-8-C MS
Matrix: Water
Analysis Batch: 224200

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 224052

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Hg	ND		0.00500	0.00486		mg/L		97	70 - 130

Lab Sample ID: 550-151754-G-8-D MSD
Matrix: Water
Analysis Batch: 224200

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 224052

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hg	ND		0.00500	0.00487		mg/L		97	70 - 130	0	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 550-223835/1
Matrix: Water
Analysis Batch: 223835

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		20	mg/L			10/27/20 08:45	1

Lab Sample ID: LCS 550-223835/2
Matrix: Water
Analysis Batch: 223835

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	970		mg/L		97	90 - 110

Lab Sample ID: LCSD 550-223835/3
Matrix: Water
Analysis Batch: 223835

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	1000	954		mg/L		95	90 - 110	2	10

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: 550-151758-33 DU

Matrix: Water

Analysis Batch: 223835

Client Sample ID: CH-CCR-W317-1020

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	3500	D2	3420	D2	mg/L		2	10

Lab Sample ID: MB 550-223980/1

Matrix: Water

Analysis Batch: 223980

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		20	mg/L			10/28/20 09:27	1

Lab Sample ID: LCS 550-223980/2

Matrix: Water

Analysis Batch: 223980

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	960		mg/L		96	90 - 110

Lab Sample ID: LCSD 550-223980/3

Matrix: Water

Analysis Batch: 223980

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	1000	954		mg/L		95	90 - 110	1	10

Lab Sample ID: 550-151758-5 DU

Matrix: Water

Analysis Batch: 223980

Client Sample ID: CH-CCR-M55-1020

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	11000	D2	10700	D2	mg/L		0.2	10

Lab Sample ID: 550-151796-A-1 DU

Matrix: Water

Analysis Batch: 223980

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	1300		1250		mg/L		2	10

Method: SM 4500 H+ B - pH

Lab Sample ID: LCSSRM 550-224480/1

Matrix: Water

Analysis Batch: 224480

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100.3	98.5 - 101.5

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Method: SM 4500 H+ B - pH (Continued)

Lab Sample ID: LCSSRM 550-224480/13

Matrix: Water

Analysis Batch: 224480

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.1		SU		101.3	98.5 - 101.5

Lab Sample ID: 550-151754-A-18 DU

Matrix: Water

Analysis Batch: 224480

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.5	H5	7.5	H5	SU		0.3	5
Temperature	7.9	H5	7.3	H5	Degrees C		8	

Lab Sample ID: LCSSRM 550-224675/1

Matrix: Water

Analysis Batch: 224675

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100.3	98.5 - 101.5

Lab Sample ID: LCSSRM 550-224675/13

Matrix: Water

Analysis Batch: 224675

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		99.7	98.5 - 101.5

Lab Sample ID: LCSSRM 550-224675/25

Matrix: Water

Analysis Batch: 224675

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100.3	98.5 - 101.5

Lab Sample ID: 550-151758-5 DU

Matrix: Water

Analysis Batch: 224675

Client Sample ID: CH-CCR-M55-1020

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.4	H5	7.4	H5	SU		0	5
Temperature	6.3	H5	6.5	H5	Degrees C		3	

Lab Sample ID: 550-151758-25 DU

Matrix: Water

Analysis Batch: 224675

Client Sample ID: CH-CCR-W307-1020

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.2	H5	7.1	H5	SU		0.4	5
Temperature	9.5	H5	9.3	H5	Degrees C		2	

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Method: SM 4500 NH3 D - Ammonia

Lab Sample ID: MB 550-224972/4
Matrix: Water
Analysis Batch: 224972

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.50	mg/L			11/07/20 12:37	1

Lab Sample ID: LCS 550-224972/5
Matrix: Water
Analysis Batch: 224972

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	25.0	22.3		mg/L		89	80 - 120

Lab Sample ID: LCSD 550-224972/6
Matrix: Water
Analysis Batch: 224972

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	25.0	24.6		mg/L		99	80 - 120	10	20

Lab Sample ID: 550-151843-C-1 MS
Matrix: Water
Analysis Batch: 224972

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.6		25.0	23.5		mg/L		88	80 - 120

Lab Sample ID: 550-151843-C-1 MSD
Matrix: Water
Analysis Batch: 224972

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	1.6		25.0	24.0		mg/L		89	80 - 120	2	20

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 550-224082/17
Matrix: Water
Analysis Batch: 224082

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	mg/L			10/28/20 12:39	1

Lab Sample ID: MB 550-224082/47
Matrix: Water
Analysis Batch: 224082

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	mg/L			10/28/20 18:38	1

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Method: SM 5310B - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCS 550-224082/18

Matrix: Water

Analysis Batch: 224082

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	20.0	18.4		mg/L		92	90 - 110
Total Organic Carbon - Duplicates	20.0	18.4		mg/L		92	90 - 110
Total Organic Carbon - Quad	20.0	18.4		mg/L		92	90 - 110

Lab Sample ID: LCS 550-224082/48

Matrix: Water

Analysis Batch: 224082

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	20.0	18.2		mg/L		91	90 - 110
Total Organic Carbon - Duplicates	20.0	18.2		mg/L		91	90 - 110
Total Organic Carbon - Quad	20.0	18.2		mg/L		91	90 - 110

Lab Sample ID: LCSD 550-224082/19

Matrix: Water

Analysis Batch: 224082

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	20.0	19.4		mg/L		97	90 - 110	5	20
Total Organic Carbon - Duplicates	20.0	19.4		mg/L		97	90 - 110	5	20
Total Organic Carbon - Quad	20.0	19.4		mg/L		97	90 - 110	5	20

Lab Sample ID: LCSD 550-224082/49

Matrix: Water

Analysis Batch: 224082

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	20.0	19.2		mg/L		96	90 - 110	5	20
Total Organic Carbon - Duplicates	20.0	19.2		mg/L		96	90 - 110	5	20
Total Organic Carbon - Quad	20.0	19.2		mg/L		96	90 - 110	5	20

Lab Sample ID: 550-151758-34 MS

Matrix: Water

Analysis Batch: 224082

Client Sample ID: CH-CCR-FD04-1020

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	1.1	M2	20.0	18.6	M2	mg/L		88	90 - 110
Total Organic Carbon - Duplicates	1.1	M2	20.0	18.6	M2	mg/L		88	90 - 110
Total Organic Carbon - Quad	1.1	M2	20.0	18.6	M2	mg/L		88	90 - 110

Lab Sample ID: 550-151758-34 MSD

Matrix: Water

Analysis Batch: 224082

Client Sample ID: CH-CCR-FD04-1020

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	1.1	M2	20.0	18.6	M2	mg/L		88	90 - 110	0	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Method: SM 5310B - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: 550-151758-34 MSD

Matrix: Water

Analysis Batch: 224082

Client Sample ID: CH-CCR-FD04-1020

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	1.1	M2	20.0	18.6	M2	mg/L		88	90 - 110	0	20
Total Organic Carbon - Quad	1.1	M2	20.0	18.6	M2	mg/L		88	90 - 110	0	20

Lab Sample ID: 550-151831-A-1 MS ^10

Matrix: Water

Analysis Batch: 224082

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	6.9		200	200		mg/L		96	90 - 110		
Total Organic Carbon - Duplicates	6.9		200	200		mg/L		96	90 - 110		
Total Organic Carbon - Quad	6.9		200	200		mg/L		96	90 - 110		

Lab Sample ID: 550-151831-A-1 MSD ^10

Matrix: Water

Analysis Batch: 224082

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	6.9		200	201		mg/L		97	90 - 110	1	20
Total Organic Carbon - Duplicates	6.9		200	201		mg/L		97	90 - 110	1	20
Total Organic Carbon - Quad	6.9		200	201		mg/L		97	90 - 110	1	20

Lab Sample ID: MB 550-224773/5

Matrix: Water

Analysis Batch: 224773

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	mg/L			11/04/20 15:33	1

Lab Sample ID: LCS 550-224773/6

Matrix: Water

Analysis Batch: 224773

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	20.0	19.6		mg/L		98	90 - 110		
Total Organic Carbon - Duplicates	20.0	19.6		mg/L		98	90 - 110		
Total Organic Carbon - Quad	20.0	19.6		mg/L		98	90 - 110		

Lab Sample ID: LCSD 550-224773/7

Matrix: Water

Analysis Batch: 224773

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	20.0	19.0		mg/L		95	90 - 110	3	20
Total Organic Carbon - Duplicates	20.0	19.0		mg/L		95	90 - 110	3	20
Total Organic Carbon - Quad	20.0	19.0		mg/L		95	90 - 110	3	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Method: SM 5310B - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: 550-151831-C-1 MS ^5

Matrix: Water

Analysis Batch: 224773

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	6.1	D1	100	103	D1	mg/L		97	90 - 110
Total Organic Carbon - Duplicates	6.1	D1	100	103	D1	mg/L		97	90 - 110
Total Organic Carbon - Quad	6.1	D1	100	103	D1	mg/L		97	90 - 110

Lab Sample ID: 550-151831-C-1 MSD ^5

Matrix: Water

Analysis Batch: 224773

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	6.1	D1	100	105	D1	mg/L		99	90 - 110	2	20
Total Organic Carbon - Duplicates	6.1	D1	100	105	D1	mg/L		99	90 - 110	2	20
Total Organic Carbon - Quad	6.1	D1	100	105	D1	mg/L		99	90 - 110	2	20

Lab Sample ID: MB 550-224894/5

Matrix: Water

Analysis Batch: 224894

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	mg/L			11/05/20 17:50	1

Lab Sample ID: LCS 550-224894/6

Matrix: Water

Analysis Batch: 224894

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	20.0	20.1		mg/L		100	90 - 110
Total Organic Carbon - Duplicates	20.0	20.1		mg/L		100	90 - 110
Total Organic Carbon - Quad	20.0	20.1		mg/L		100	90 - 110

Lab Sample ID: LCSD 550-224894/7

Matrix: Water

Analysis Batch: 224894

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	20.0	20.2		mg/L		101	90 - 110	1	20
Total Organic Carbon - Duplicates	20.0	20.2		mg/L		101	90 - 110	1	20
Total Organic Carbon - Quad	20.0	20.2		mg/L		101	90 - 110	1	20

Lab Sample ID: 550-152348-A-1 MS ^5

Matrix: Water

Analysis Batch: 224894

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	5.9	D1	100	107	D1	mg/L		101	90 - 110
Total Organic Carbon - Duplicates	5.9	D1	100	107	D1	mg/L		101	90 - 110
Total Organic Carbon - Quad	5.9	D1	100	107	D1	mg/L		101	90 - 110

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: 550-152348-A-1 MSD ^5

Matrix: Water

Analysis Batch: 224894

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	5.9	D1	100	106	D1	mg/L		100	90 - 110	1	20
Total Organic Carbon - Duplicates	5.9	D1	100	106	D1	mg/L		100	90 - 110	1	20
Total Organic Carbon - Quad	5.9	D1	100	106	D1	mg/L		100	90 - 110	1	20

Method: SM 5310B - Organic Carbon, Dissolved (DOC)

Lab Sample ID: MB 550-223938/34

Matrix: Water

Analysis Batch: 223938

Client Sample ID: Method Blank

Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	ND		0.50	mg/L			10/27/20 16:18	1
Dissolved Organic Carbon - Duplicate	ND		0.50	mg/L			10/27/20 16:18	1
Dissolved Organic Carbon - Quad	ND		0.50	mg/L			10/27/20 16:18	1

Lab Sample ID: MB 550-223938/5

Matrix: Water

Analysis Batch: 223938

Client Sample ID: Method Blank

Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	ND		0.50	mg/L			10/27/20 10:30	1
Dissolved Organic Carbon - Duplicate	ND		0.50	mg/L			10/27/20 10:30	1
Dissolved Organic Carbon - Quad	ND		0.50	mg/L			10/27/20 10:30	1

Lab Sample ID: LCS 550-223938/35

Matrix: Water

Analysis Batch: 223938

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	20.0	18.0		mg/L		90	90 - 110
Dissolved Organic Carbon - Duplicate	20.0	18.0		mg/L		90	90 - 110
Dissolved Organic Carbon - Quad	20.0	18.0		mg/L		90	90 - 110

Lab Sample ID: LCS 550-223938/6

Matrix: Water

Analysis Batch: 223938

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	20.0	21.1		mg/L		105	90 - 110
Dissolved Organic Carbon - Duplicate	20.0	21.1		mg/L		105	90 - 110
Dissolved Organic Carbon - Quad	20.0	21.1		mg/L		105	90 - 110

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Method: SM 5310B - Organic Carbon, Dissolved (DOC) (Continued)

Lab Sample ID: LCSD 550-223938/36

Matrix: Water

Analysis Batch: 223938

Client Sample ID: Lab Control Sample Dup

Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	20.0	19.4		mg/L		97	90 - 110	7	20
Dissolved Organic Carbon - Duplicate	20.0	19.4		mg/L		97	90 - 110	7	20
Dissolved Organic Carbon - Quad	20.0	19.4		mg/L		97	90 - 110	7	20

Lab Sample ID: LCSD 550-223938/7

Matrix: Water

Analysis Batch: 223938

Client Sample ID: Lab Control Sample Dup

Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	20.0	18.7		mg/L		93	90 - 110	12	20
Dissolved Organic Carbon - Duplicate	20.0	18.7		mg/L		93	90 - 110	12	20
Dissolved Organic Carbon - Quad	20.0	18.7		mg/L		93	90 - 110	12	20

Lab Sample ID: 550-151754-B-3 MS

Matrix: Water

Analysis Batch: 223938

Client Sample ID: Matrix Spike

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	3.1	M2	20.0	17.2	M2	mg/L		70	90 - 110		
Dissolved Organic Carbon - Duplicate	3.1	M2	20.0	17.2	M2	mg/L		70	90 - 110		
Dissolved Organic Carbon - Quad	3.1	M2	20.0	17.2	M2	mg/L		70	90 - 110		

Lab Sample ID: 550-151754-C-3 MSD

Matrix: Water

Analysis Batch: 223938

Client Sample ID: Matrix Spike Duplicate

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	3.1	M2	20.0	20.2	M2	mg/L		85	90 - 110	16	20
Dissolved Organic Carbon - Duplicate	3.1	M2	20.0	20.2	M2	mg/L		85	90 - 110	16	20
Dissolved Organic Carbon - Quad	3.1	M2	20.0	20.2	M2	mg/L		85	90 - 110	16	20

Lab Sample ID: 550-151758-22 MS

Matrix: Water

Analysis Batch: 223938

Client Sample ID: CH-CCR-W305-1020

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	1.7	M2	20.0	19.8		mg/L		91	90 - 110		
Dissolved Organic Carbon - Duplicate	1.7	M2	20.0	19.8		mg/L		91	90 - 110		
Dissolved Organic Carbon - Quad	1.7	M2	20.0	19.8		mg/L		91	90 - 110		

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Method: SM 5310B - Organic Carbon, Dissolved (DOC) (Continued)

Lab Sample ID: 550-151758-22 MSD

Matrix: Water

Analysis Batch: 223938

Client Sample ID: CH-CCR-W305-1020

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	1.7	M2	20.0	18.8	M2	mg/L		85	90 - 110	6	20
Dissolved Organic Carbon - Duplicate	1.7	M2	20.0	18.8	M2	mg/L		85	90 - 110	6	20
Dissolved Organic Carbon - Quad	1.7	M2	20.0	18.8	M2	mg/L		85	90 - 110	6	20

Lab Sample ID: MB 550-224081/5

Matrix: Water

Analysis Batch: 224081

Client Sample ID: Method Blank

Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	ND		0.50	mg/L			10/28/20 10:14	1
Dissolved Organic Carbon - Duplicate	ND		0.50	mg/L			10/28/20 10:14	1
Dissolved Organic Carbon - Quad	ND		0.50	mg/L			10/28/20 10:14	1

Lab Sample ID: LCS 550-224081/6

Matrix: Water

Analysis Batch: 224081

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	20.0	18.2		mg/L		91	90 - 110
Dissolved Organic Carbon - Duplicate	20.0	18.2		mg/L		91	90 - 110
Dissolved Organic Carbon - Quad	20.0	18.2		mg/L		91	90 - 110

Lab Sample ID: LCSD 550-224081/7

Matrix: Water

Analysis Batch: 224081

Client Sample ID: Lab Control Sample Dup

Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	20.0	19.0		mg/L		95	90 - 110	4	20
Dissolved Organic Carbon - Duplicate	20.0	19.0		mg/L		95	90 - 110	4	20
Dissolved Organic Carbon - Quad	20.0	19.0		mg/L		95	90 - 110	4	20

Lab Sample ID: 550-151754-C-7 MS

Matrix: Water

Analysis Batch: 224081

Client Sample ID: Matrix Spike

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	1.7		20.0	17.5	M2	mg/L		79	90 - 110
Dissolved Organic Carbon - Duplicate	1.7		20.0	17.5	M2	mg/L		79	90 - 110
Dissolved Organic Carbon - Quad	1.7		20.0	17.5	M2	mg/L		79	90 - 110

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Method: SM 5310B - Organic Carbon, Dissolved (DOC) (Continued)

Lab Sample ID: 550-151754-D-7 MSD

Matrix: Water

Analysis Batch: 224081

Client Sample ID: Matrix Spike Duplicate

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	1.7		20.0	18.0	M2	mg/L		82	90 - 110	3	20
Dissolved Organic Carbon - Duplicate	1.7		20.0	18.0	M2	mg/L		81	90 - 110	3	20
Dissolved Organic Carbon - Quad	1.7		20.0	18.0	M2	mg/L		82	90 - 110	3	20

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

HPLC/IC

Analysis Batch: 224067

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-1	CH-CCR-M52-1020	Total/NA	Water	300.0	
550-151758-1	CH-CCR-M52-1020	Total/NA	Water	300.0	
550-151758-5	CH-CCR-M55-1020	Total/NA	Water	300.0	
550-151758-5	CH-CCR-M55-1020	Total/NA	Water	300.0	
550-151758-7	CH-CCR-M69-1020	Total/NA	Water	300.0	
550-151758-7	CH-CCR-M69-1020	Total/NA	Water	300.0	
550-151758-9	CH-CCR-M70-1020	Total/NA	Water	300.0	
550-151758-9	CH-CCR-M70-1020	Total/NA	Water	300.0	
550-151758-11	CH-CCR-W301-1020	Total/NA	Water	300.0	
550-151758-11	CH-CCR-W301-1020	Total/NA	Water	300.0	
550-151758-13	CH-CCR-W302-1020	Total/NA	Water	300.0	
550-151758-13	CH-CCR-W302-1020	Total/NA	Water	300.0	
550-151758-15	CH-CCR-W303-1020	Total/NA	Water	300.0	
550-151758-15	CH-CCR-W303-1020	Total/NA	Water	300.0	
550-151758-17	CH-CCR-W304-1020	Total/NA	Water	300.0	
550-151758-17	CH-CCR-W304-1020	Total/NA	Water	300.0	
MB 550-224067/2	Method Blank	Total/NA	Water	300.0	
LCS 550-224067/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-224067/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-151754-E-21 MS ^2	Matrix Spike	Total/NA	Water	300.0	
550-151754-E-21 MS ^200	Matrix Spike	Total/NA	Water	300.0	
550-151754-E-21 MSD ^2	Matrix Spike Duplicate	Total/NA	Water	300.0	
550-151754-E-21 MSD ^200	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 224068

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-1	CH-CCR-M52-1020	Total/NA	Water	300.0	
550-151758-3	CH-CCR-M53-1020	Total/NA	Water	300.0	
550-151758-5	CH-CCR-M55-1020	Total/NA	Water	300.0	
550-151758-7	CH-CCR-M69-1020	Total/NA	Water	300.0	
550-151758-9	CH-CCR-M70-1020	Total/NA	Water	300.0	
550-151758-11	CH-CCR-W301-1020	Total/NA	Water	300.0	
550-151758-13	CH-CCR-W302-1020	Total/NA	Water	300.0	
550-151758-15	CH-CCR-W303-1020	Total/NA	Water	300.0	
550-151758-17	CH-CCR-W304-1020	Total/NA	Water	300.0	
550-151758-19	CH-CCR-FD03-1020	Total/NA	Water	300.0	
550-151758-21	CH-CCR-W305-1020	Total/NA	Water	300.0	
550-151758-23	CH-CCR-W306-1020	Total/NA	Water	300.0	
550-151758-25	CH-CCR-W307-1020	Total/NA	Water	300.0	
550-151758-27	CH-CCR-W308-1020	Total/NA	Water	300.0	
MB 550-224068/2	Method Blank	Total/NA	Water	300.0	
LCS 550-224068/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-224068/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-151758-1 MS	CH-CCR-M52-1020	Total/NA	Water	300.0	
550-151758-1 MSD	CH-CCR-M52-1020	Total/NA	Water	300.0	

Analysis Batch: 224208

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-29	CH-CCR-W309-1020	Total/NA	Water	300.0	
550-151758-31	CH-CCR-W314-1020	Total/NA	Water	300.0	
550-151758-34	CH-CCR-FD04-1020	Total/NA	Water	300.0	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

HPLC/IC (Continued)

Analysis Batch: 224208 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 550-224208/2	Method Blank	Total/NA	Water	300.0	
LCS 550-224208/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-224208/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-151758-29 MS	CH-CCR-W309-1020	Total/NA	Water	300.0	
550-151758-29 MSD	CH-CCR-W309-1020	Total/NA	Water	300.0	

Analysis Batch: 224210

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-3	CH-CCR-M53-1020	Total/NA	Water	300.0	
550-151758-3	CH-CCR-M53-1020	Total/NA	Water	300.0	
550-151758-19	CH-CCR-FD03-1020	Total/NA	Water	300.0	
550-151758-19	CH-CCR-FD03-1020	Total/NA	Water	300.0	
550-151758-21	CH-CCR-W305-1020	Total/NA	Water	300.0	
550-151758-21	CH-CCR-W305-1020	Total/NA	Water	300.0	
550-151758-23	CH-CCR-W306-1020	Total/NA	Water	300.0	
550-151758-23	CH-CCR-W306-1020	Total/NA	Water	300.0	
550-151758-25	CH-CCR-W307-1020	Total/NA	Water	300.0	
550-151758-25	CH-CCR-W307-1020	Total/NA	Water	300.0	
550-151758-27	CH-CCR-W308-1020	Total/NA	Water	300.0	
550-151758-27	CH-CCR-W308-1020	Total/NA	Water	300.0	
550-151758-29	CH-CCR-W309-1020	Total/NA	Water	300.0	
550-151758-29	CH-CCR-W309-1020	Total/NA	Water	300.0	
550-151758-31	CH-CCR-W314-1020	Total/NA	Water	300.0	
550-151758-31	CH-CCR-W314-1020	Total/NA	Water	300.0	
550-151758-33	CH-CCR-W317-1020	Total/NA	Water	300.0	
550-151758-33	CH-CCR-W317-1020	Total/NA	Water	300.0	
550-151758-34	CH-CCR-FD04-1020	Total/NA	Water	300.0	
550-151758-34	CH-CCR-FD04-1020	Total/NA	Water	300.0	
MB 550-224210/2	Method Blank	Total/NA	Water	300.0	
LCS 550-224210/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-224210/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-151757-A-5 MS ^50	Matrix Spike	Total/NA	Water	300.0	
550-151757-A-5 MSD ^50	Matrix Spike Duplicate	Total/NA	Water	300.0	

Metals

Prep Batch: 223800

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-2	CH-CCR-M52-1020	Dissolved	Water	200.8	
550-151758-4	CH-CCR-M53-1020	Dissolved	Water	200.8	
550-151758-6	CH-CCR-M55-1020	Dissolved	Water	200.8	
550-151758-8	CH-CCR-M69-1020	Dissolved	Water	200.8	
550-151758-10	CH-CCR-M70-1020	Dissolved	Water	200.8	
550-151758-12	CH-CCR-W301-1020	Dissolved	Water	200.8	
550-151758-14	CH-CCR-W302-1020	Dissolved	Water	200.8	
550-151758-16	CH-CCR-W303-1020	Dissolved	Water	200.8	
550-151758-18	CH-CCR-W304-1020	Dissolved	Water	200.8	
550-151758-20	CH-CCR-FD03-1020	Dissolved	Water	200.8	
550-151758-22	CH-CCR-W305-1020	Dissolved	Water	200.8	
550-151758-24	CH-CCR-W306-1020	Dissolved	Water	200.8	
550-151758-26	CH-CCR-W307-1020	Dissolved	Water	200.8	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Metals (Continued)

Prep Batch: 223800 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-28	CH-CCR-W308-1020	Dissolved	Water	200.8	
550-151758-32	CH-CCR-W314-1020	Dissolved	Water	200.8	
550-151758-35	CH-CCR-FD04-1020	Dissolved	Water	200.8	
MB 550-223800/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-223800/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-223800/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-151758-2 MS	CH-CCR-M52-1020	Dissolved	Water	200.8	
550-151758-2 MSD	CH-CCR-M52-1020	Dissolved	Water	200.8	

Prep Batch: 223922

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-1	CH-CCR-M52-1020	Total/NA	Water	245.1	
550-151758-3	CH-CCR-M53-1020	Total/NA	Water	245.1	
550-151758-11	CH-CCR-W301-1020	Total/NA	Water	245.1	
550-151758-15	CH-CCR-W303-1020	Total/NA	Water	245.1	
550-151758-21	CH-CCR-W305-1020	Total/NA	Water	245.1	
550-151758-23	CH-CCR-W306-1020	Total/NA	Water	245.1	
550-151758-33	CH-CCR-W317-1020	Total/NA	Water	245.1	
MB 550-223922/1-A	Method Blank	Total/NA	Water	245.1	
LCS 550-223922/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 550-223922/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	
550-151756-B-1-B MS	Matrix Spike	Total/NA	Water	245.1	
550-151756-B-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	

Prep Batch: 223989

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-2	CH-CCR-M52-1020	Dissolved	Water	200.7	
550-151758-4	CH-CCR-M53-1020	Dissolved	Water	200.7	
550-151758-6	CH-CCR-M55-1020	Dissolved	Water	200.7	
550-151758-8	CH-CCR-M69-1020	Dissolved	Water	200.7	
550-151758-10	CH-CCR-M70-1020	Dissolved	Water	200.7	
550-151758-12	CH-CCR-W301-1020	Dissolved	Water	200.7	
550-151758-14	CH-CCR-W302-1020	Dissolved	Water	200.7	
550-151758-16	CH-CCR-W303-1020	Dissolved	Water	200.7	
550-151758-18	CH-CCR-W304-1020	Dissolved	Water	200.7	
550-151758-20	CH-CCR-FD03-1020	Dissolved	Water	200.7	
550-151758-22	CH-CCR-W305-1020	Dissolved	Water	200.7	
550-151758-24	CH-CCR-W306-1020	Dissolved	Water	200.7	
550-151758-26	CH-CCR-W307-1020	Dissolved	Water	200.7	
550-151758-28	CH-CCR-W308-1020	Dissolved	Water	200.7	
550-151758-30	CH-CCR-W309-1020	Dissolved	Water	200.7	
550-151758-32	CH-CCR-W314-1020	Dissolved	Water	200.7	
550-151758-35	CH-CCR-FD04-1020	Dissolved	Water	200.7	
MB 550-223989/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-223989/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-223989/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-151758-35 MS	CH-CCR-FD04-1020	Dissolved	Water	200.7	
550-151758-35 MSD	CH-CCR-FD04-1020	Dissolved	Water	200.7	

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Metals

Analysis Batch: 224045

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-1	CH-CCR-M52-1020	Total/NA	Water	245.1	223922
550-151758-3	CH-CCR-M53-1020	Total/NA	Water	245.1	223922
550-151758-11	CH-CCR-W301-1020	Total/NA	Water	245.1	223922
550-151758-15	CH-CCR-W303-1020	Total/NA	Water	245.1	223922
550-151758-21	CH-CCR-W305-1020	Total/NA	Water	245.1	223922
550-151758-23	CH-CCR-W306-1020	Total/NA	Water	245.1	223922
550-151758-33	CH-CCR-W317-1020	Total/NA	Water	245.1	223922
MB 550-223922/1-A	Method Blank	Total/NA	Water	245.1	223922
LCS 550-223922/2-A	Lab Control Sample	Total/NA	Water	245.1	223922
LCSD 550-223922/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	223922
550-151756-B-1-B MS	Matrix Spike	Total/NA	Water	245.1	223922
550-151756-B-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	223922

Prep Batch: 224052

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-5	CH-CCR-M55-1020	Total/NA	Water	245.1	
550-151758-7	CH-CCR-M69-1020	Total/NA	Water	245.1	
550-151758-9	CH-CCR-M70-1020	Total/NA	Water	245.1	
550-151758-13	CH-CCR-W302-1020	Total/NA	Water	245.1	
550-151758-17	CH-CCR-W304-1020	Total/NA	Water	245.1	
550-151758-19	CH-CCR-FD03-1020	Total/NA	Water	245.1	
550-151758-25	CH-CCR-W307-1020	Total/NA	Water	245.1	
550-151758-27	CH-CCR-W308-1020	Total/NA	Water	245.1	
550-151758-29	CH-CCR-W309-1020	Total/NA	Water	245.1	
550-151758-31	CH-CCR-W314-1020	Total/NA	Water	245.1	
550-151758-34	CH-CCR-FD04-1020	Total/NA	Water	245.1	
MB 550-224052/1-A	Method Blank	Total/NA	Water	245.1	
LCS 550-224052/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 550-224052/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	
550-151754-G-8-C MS	Matrix Spike	Total/NA	Water	245.1	
550-151754-G-8-D MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	

Prep Batch: 224142

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-1	CH-CCR-M52-1020	Total/NA	Water	200.7	
550-151758-3	CH-CCR-M53-1020	Total/NA	Water	200.7	
550-151758-5	CH-CCR-M55-1020	Total/NA	Water	200.7	
550-151758-7	CH-CCR-M69-1020	Total/NA	Water	200.7	
550-151758-9	CH-CCR-M70-1020	Total/NA	Water	200.7	
550-151758-11	CH-CCR-W301-1020	Total/NA	Water	200.7	
550-151758-13	CH-CCR-W302-1020	Total/NA	Water	200.7	
550-151758-15	CH-CCR-W303-1020	Total/NA	Water	200.7	
550-151758-17	CH-CCR-W304-1020	Total/NA	Water	200.7	
550-151758-19	CH-CCR-FD03-1020	Total/NA	Water	200.7	
550-151758-21	CH-CCR-W305-1020	Total/NA	Water	200.7	
550-151758-23	CH-CCR-W306-1020	Total/NA	Water	200.7	
550-151758-25	CH-CCR-W307-1020	Total/NA	Water	200.7	
550-151758-27	CH-CCR-W308-1020	Total/NA	Water	200.7	
550-151758-29	CH-CCR-W309-1020	Total/NA	Water	200.7	
550-151758-31	CH-CCR-W314-1020	Total/NA	Water	200.7	
550-151758-33	CH-CCR-W317-1020	Total/NA	Water	200.7	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Metals (Continued)

Prep Batch: 224142 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-34	CH-CCR-FD04-1020	Total/NA	Water	200.7	
MB 550-224142/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-224142/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-224142/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-151758-33 MS	CH-CCR-W317-1020	Total/NA	Water	200.7	
550-151758-33 MSD	CH-CCR-W317-1020	Total/NA	Water	200.7	

Analysis Batch: 224200

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-5	CH-CCR-M55-1020	Total/NA	Water	245.1	224052
550-151758-7	CH-CCR-M69-1020	Total/NA	Water	245.1	224052
550-151758-9	CH-CCR-M70-1020	Total/NA	Water	245.1	224052
550-151758-13	CH-CCR-W302-1020	Total/NA	Water	245.1	224052
550-151758-17	CH-CCR-W304-1020	Total/NA	Water	245.1	224052
550-151758-19	CH-CCR-FD03-1020	Total/NA	Water	245.1	224052
550-151758-25	CH-CCR-W307-1020	Total/NA	Water	245.1	224052
550-151758-27	CH-CCR-W308-1020	Total/NA	Water	245.1	224052
550-151758-29	CH-CCR-W309-1020	Total/NA	Water	245.1	224052
550-151758-31	CH-CCR-W314-1020	Total/NA	Water	245.1	224052
550-151758-34	CH-CCR-FD04-1020	Total/NA	Water	245.1	224052
MB 550-224052/1-A	Method Blank	Total/NA	Water	245.1	224052
LCS 550-224052/2-A	Lab Control Sample	Total/NA	Water	245.1	224052
LCSD 550-224052/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	224052
550-151754-G-8-C MS	Matrix Spike	Total/NA	Water	245.1	224052
550-151754-G-8-D MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	224052

Prep Batch: 224433

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-1	CH-CCR-M52-1020	Total/NA	Water	200.8	
550-151758-3	CH-CCR-M53-1020	Total/NA	Water	200.8	
550-151758-5	CH-CCR-M55-1020	Total/NA	Water	200.8	
550-151758-7	CH-CCR-M69-1020	Total/NA	Water	200.8	
550-151758-9	CH-CCR-M70-1020	Total/NA	Water	200.8	
550-151758-11	CH-CCR-W301-1020	Total/NA	Water	200.8	
550-151758-13	CH-CCR-W302-1020	Total/NA	Water	200.8	
550-151758-15	CH-CCR-W303-1020	Total/NA	Water	200.8	
550-151758-17	CH-CCR-W304-1020	Total/NA	Water	200.8	
550-151758-19	CH-CCR-FD03-1020	Total/NA	Water	200.8	
550-151758-21	CH-CCR-W305-1020	Total/NA	Water	200.8	
550-151758-23	CH-CCR-W306-1020	Total/NA	Water	200.8	
550-151758-25	CH-CCR-W307-1020	Total/NA	Water	200.8	
550-151758-27	CH-CCR-W308-1020	Total/NA	Water	200.8	
550-151758-29	CH-CCR-W309-1020	Total/NA	Water	200.8	
550-151758-30	CH-CCR-W309-1020	Dissolved	Water	200.8	
550-151758-31	CH-CCR-W314-1020	Total/NA	Water	200.8	
550-151758-33	CH-CCR-W317-1020	Total/NA	Water	200.8	
550-151758-34	CH-CCR-FD04-1020	Total/NA	Water	200.8	
MB 550-224433/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-224433/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-224433/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-151758-30 MS	CH-CCR-W309-1020	Dissolved	Water	200.8	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Metals (Continued)

Prep Batch: 224433 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-30 MSD	CH-CCR-W309-1020	Dissolved	Water	200.8	

Analysis Batch: 224878

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-1	CH-CCR-M52-1020	Total/NA	Water	200.7 Rev 4.4	224142
550-151758-3	CH-CCR-M53-1020	Total/NA	Water	200.7 Rev 4.4	224142
550-151758-5	CH-CCR-M55-1020	Total/NA	Water	200.7 Rev 4.4	224142
550-151758-7	CH-CCR-M69-1020	Total/NA	Water	200.7 Rev 4.4	224142
550-151758-9	CH-CCR-M70-1020	Total/NA	Water	200.7 Rev 4.4	224142
550-151758-11	CH-CCR-W301-1020	Total/NA	Water	200.7 Rev 4.4	224142
550-151758-13	CH-CCR-W302-1020	Total/NA	Water	200.7 Rev 4.4	224142
550-151758-15	CH-CCR-W303-1020	Total/NA	Water	200.7 Rev 4.4	224142
550-151758-17	CH-CCR-W304-1020	Total/NA	Water	200.7 Rev 4.4	224142
550-151758-19	CH-CCR-FD03-1020	Total/NA	Water	200.7 Rev 4.4	224142
550-151758-21	CH-CCR-W305-1020	Total/NA	Water	200.7 Rev 4.4	224142
550-151758-23	CH-CCR-W306-1020	Total/NA	Water	200.7 Rev 4.4	224142
550-151758-25	CH-CCR-W307-1020	Total/NA	Water	200.7 Rev 4.4	224142
550-151758-27	CH-CCR-W308-1020	Total/NA	Water	200.7 Rev 4.4	224142
550-151758-29	CH-CCR-W309-1020	Total/NA	Water	200.7 Rev 4.4	224142
550-151758-31	CH-CCR-W314-1020	Total/NA	Water	200.7 Rev 4.4	224142
550-151758-33	CH-CCR-W317-1020	Total/NA	Water	200.7 Rev 4.4	224142
550-151758-34	CH-CCR-FD04-1020	Total/NA	Water	200.7 Rev 4.4	224142
MB 550-224142/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	224142
LCS 550-224142/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	224142
LCSD 550-224142/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	224142
550-151758-33 MS	CH-CCR-W317-1020	Total/NA	Water	200.7 Rev 4.4	224142
550-151758-33 MSD	CH-CCR-W317-1020	Total/NA	Water	200.7 Rev 4.4	224142

Analysis Batch: 224991

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-2	CH-CCR-M52-1020	Dissolved	Water	200.7 Rev 4.4	223989
550-151758-4	CH-CCR-M53-1020	Dissolved	Water	200.7 Rev 4.4	223989
550-151758-6	CH-CCR-M55-1020	Dissolved	Water	200.7 Rev 4.4	223989
550-151758-8	CH-CCR-M69-1020	Dissolved	Water	200.7 Rev 4.4	223989
550-151758-10	CH-CCR-M70-1020	Dissolved	Water	200.7 Rev 4.4	223989
550-151758-12	CH-CCR-W301-1020	Dissolved	Water	200.7 Rev 4.4	223989
550-151758-14	CH-CCR-W302-1020	Dissolved	Water	200.7 Rev 4.4	223989
550-151758-16	CH-CCR-W303-1020	Dissolved	Water	200.7 Rev 4.4	223989
550-151758-18	CH-CCR-W304-1020	Dissolved	Water	200.7 Rev 4.4	223989
550-151758-20	CH-CCR-FD03-1020	Dissolved	Water	200.7 Rev 4.4	223989
550-151758-22	CH-CCR-W305-1020	Dissolved	Water	200.7 Rev 4.4	223989
550-151758-24	CH-CCR-W306-1020	Dissolved	Water	200.7 Rev 4.4	223989
550-151758-26	CH-CCR-W307-1020	Dissolved	Water	200.7 Rev 4.4	223989
550-151758-28	CH-CCR-W308-1020	Dissolved	Water	200.7 Rev 4.4	223989
550-151758-30	CH-CCR-W309-1020	Dissolved	Water	200.7 Rev 4.4	223989
550-151758-32	CH-CCR-W314-1020	Dissolved	Water	200.7 Rev 4.4	223989
550-151758-35	CH-CCR-FD04-1020	Dissolved	Water	200.7 Rev 4.4	223989
MB 550-223989/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	223989
LCS 550-223989/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	223989
LCSD 550-223989/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	223989
550-151758-35 MS	CH-CCR-FD04-1020	Dissolved	Water	200.7 Rev 4.4	223989

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Metals (Continued)

Analysis Batch: 224991 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-35 MSD	CH-CCR-FD04-1020	Dissolved	Water	200.7 Rev 4.4	223989

Analysis Batch: 225097

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-22	CH-CCR-W305-1020	Dissolved	Water	200.8 LL	223800
550-151758-26	CH-CCR-W307-1020	Dissolved	Water	200.8 LL	223800
550-151758-32	CH-CCR-W314-1020	Dissolved	Water	200.8 LL	223800
550-151758-35	CH-CCR-FD04-1020	Dissolved	Water	200.8 LL	223800

Analysis Batch: 225482

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-1	CH-CCR-M52-1020	Total/NA	Water	200.8 LL	224433
550-151758-3	CH-CCR-M53-1020	Total/NA	Water	200.8 LL	224433
550-151758-5	CH-CCR-M55-1020	Total/NA	Water	200.8 LL	224433
550-151758-9	CH-CCR-M70-1020	Total/NA	Water	200.8 LL	224433
550-151758-11	CH-CCR-W301-1020	Total/NA	Water	200.8 LL	224433
550-151758-13	CH-CCR-W302-1020	Total/NA	Water	200.8 LL	224433
550-151758-15	CH-CCR-W303-1020	Total/NA	Water	200.8 LL	224433
550-151758-17	CH-CCR-W304-1020	Total/NA	Water	200.8 LL	224433
550-151758-30	CH-CCR-W309-1020	Dissolved	Water	200.8 LL	224433
MB 550-224433/1-A	Method Blank	Total/NA	Water	200.8 LL	224433
LCS 550-224433/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	224433
LCSD 550-224433/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	224433
550-151758-30 MS	CH-CCR-W309-1020	Dissolved	Water	200.8 LL	224433
550-151758-30 MSD	CH-CCR-W309-1020	Dissolved	Water	200.8 LL	224433

Analysis Batch: 225520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 550-224142/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	224142
LCS 550-224142/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	224142
LCSD 550-224142/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	224142
550-151758-33 MS	CH-CCR-W317-1020	Total/NA	Water	200.7 Rev 4.4	224142
550-151758-33 MSD	CH-CCR-W317-1020	Total/NA	Water	200.7 Rev 4.4	224142

Analysis Batch: 226148

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-2	CH-CCR-M52-1020	Dissolved	Water	200.8 LL	223800
550-151758-4	CH-CCR-M53-1020	Dissolved	Water	200.8 LL	223800
550-151758-6	CH-CCR-M55-1020	Dissolved	Water	200.8 LL	223800
550-151758-8	CH-CCR-M69-1020	Dissolved	Water	200.8 LL	223800
550-151758-10	CH-CCR-M70-1020	Dissolved	Water	200.8 LL	223800
550-151758-12	CH-CCR-W301-1020	Dissolved	Water	200.8 LL	223800
550-151758-14	CH-CCR-W302-1020	Dissolved	Water	200.8 LL	223800
550-151758-16	CH-CCR-W303-1020	Dissolved	Water	200.8 LL	223800
550-151758-18	CH-CCR-W304-1020	Dissolved	Water	200.8 LL	223800
550-151758-20	CH-CCR-FD03-1020	Dissolved	Water	200.8 LL	223800
550-151758-22	CH-CCR-W305-1020	Dissolved	Water	200.8 LL	223800
550-151758-24	CH-CCR-W306-1020	Dissolved	Water	200.8 LL	223800
550-151758-26	CH-CCR-W307-1020	Dissolved	Water	200.8 LL	223800
550-151758-28	CH-CCR-W308-1020	Dissolved	Water	200.8 LL	223800
550-151758-32	CH-CCR-W314-1020	Dissolved	Water	200.8 LL	223800

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Metals (Continued)

Analysis Batch: 226148 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-35	CH-CCR-FD04-1020	Dissolved	Water	200.8 LL	223800
MB 550-223800/1-A	Method Blank	Total/NA	Water	200.8 LL	223800
LCS 550-223800/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	223800
LCSD 550-223800/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	223800
550-151758-2 MS	CH-CCR-M52-1020	Dissolved	Water	200.8 LL	223800
550-151758-2 MSD	CH-CCR-M52-1020	Dissolved	Water	200.8 LL	223800

Analysis Batch: 226262

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-1	CH-CCR-M52-1020	Total/NA	Water	200.8 LL	224433
550-151758-3	CH-CCR-M53-1020	Total/NA	Water	200.8 LL	224433
550-151758-5	CH-CCR-M55-1020	Total/NA	Water	200.8 LL	224433
550-151758-7	CH-CCR-M69-1020	Total/NA	Water	200.8 LL	224433
550-151758-9	CH-CCR-M70-1020	Total/NA	Water	200.8 LL	224433
550-151758-11	CH-CCR-W301-1020	Total/NA	Water	200.8 LL	224433
550-151758-13	CH-CCR-W302-1020	Total/NA	Water	200.8 LL	224433
550-151758-15	CH-CCR-W303-1020	Total/NA	Water	200.8 LL	224433
550-151758-17	CH-CCR-W304-1020	Total/NA	Water	200.8 LL	224433
550-151758-19	CH-CCR-FD03-1020	Total/NA	Water	200.8 LL	224433
550-151758-21	CH-CCR-W305-1020	Total/NA	Water	200.8 LL	224433
550-151758-23	CH-CCR-W306-1020	Total/NA	Water	200.8 LL	224433
550-151758-25	CH-CCR-W307-1020	Total/NA	Water	200.8 LL	224433
550-151758-27	CH-CCR-W308-1020	Total/NA	Water	200.8 LL	224433
550-151758-29	CH-CCR-W309-1020	Total/NA	Water	200.8 LL	224433
550-151758-30	CH-CCR-W309-1020	Dissolved	Water	200.8 LL	224433
550-151758-31	CH-CCR-W314-1020	Total/NA	Water	200.8 LL	224433
550-151758-33	CH-CCR-W317-1020	Total/NA	Water	200.8 LL	224433
550-151758-34	CH-CCR-FD04-1020	Total/NA	Water	200.8 LL	224433
MB 550-224433/1-A	Method Blank	Total/NA	Water	200.8 LL	224433
LCS 550-224433/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	224433
LCSD 550-224433/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	224433
550-151758-30 MS	CH-CCR-W309-1020	Dissolved	Water	200.8 LL	224433
550-151758-30 MSD	CH-CCR-W309-1020	Dissolved	Water	200.8 LL	224433

Analysis Batch: 226816

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-1	CH-CCR-M52-1020	Total/NA	Water	200.8 LL	224433
550-151758-7	CH-CCR-M69-1020	Total/NA	Water	200.8 LL	224433
550-151758-11	CH-CCR-W301-1020	Total/NA	Water	200.8 LL	224433
550-151758-19	CH-CCR-FD03-1020	Total/NA	Water	200.8 LL	224433
550-151758-21	CH-CCR-W305-1020	Total/NA	Water	200.8 LL	224433
550-151758-25	CH-CCR-W307-1020	Total/NA	Water	200.8 LL	224433
550-151758-27	CH-CCR-W308-1020	Total/NA	Water	200.8 LL	224433
550-151758-31	CH-CCR-W314-1020	Total/NA	Water	200.8 LL	224433
550-151758-33	CH-CCR-W317-1020	Total/NA	Water	200.8 LL	224433
550-151758-34	CH-CCR-FD04-1020	Total/NA	Water	200.8 LL	224433

Analysis Batch: 226828

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-23	CH-CCR-W306-1020	Total/NA	Water	200.8 LL	224433

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Metals

Analysis Batch: 227373

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-9	CH-CCR-M70-1020	Total/NA	Water	200.8 LL	224433

Prep Batch: 516897

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-1	CH-CCR-M52-1020	Total/NA	Water	200.7	
550-151758-3	CH-CCR-M53-1020	Total/NA	Water	200.7	
550-151758-5	CH-CCR-M55-1020	Total/NA	Water	200.7	
550-151758-7	CH-CCR-M69-1020	Total/NA	Water	200.7	
550-151758-9	CH-CCR-M70-1020	Total/NA	Water	200.7	
550-151758-11	CH-CCR-W301-1020	Total/NA	Water	200.7	
550-151758-13	CH-CCR-W302-1020	Total/NA	Water	200.7	
MB 280-516897/1-A	Method Blank	Total/NA	Water	200.7	
LCS 280-516897/2-A	Lab Control Sample	Total/NA	Water	200.7	
550-151948-D-21-B MS	Matrix Spike	Total/NA	Water	200.7	
550-151948-D-21-C MSD	Matrix Spike Duplicate	Total/NA	Water	200.7	

Prep Batch: 516898

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-15	CH-CCR-W303-1020	Total/NA	Water	200.7	
550-151758-17	CH-CCR-W304-1020	Total/NA	Water	200.7	
550-151758-19	CH-CCR-FD03-1020	Total/NA	Water	200.7	
550-151758-21	CH-CCR-W305-1020	Total/NA	Water	200.7	
550-151758-23	CH-CCR-W306-1020	Total/NA	Water	200.7	
550-151758-25	CH-CCR-W307-1020	Total/NA	Water	200.7	
550-151758-27	CH-CCR-W308-1020	Total/NA	Water	200.7	
550-151758-29	CH-CCR-W309-1020	Total/NA	Water	200.7	
550-151758-31	CH-CCR-W314-1020	Total/NA	Water	200.7	
550-151758-34	CH-CCR-FD04-1020	Total/NA	Water	200.7	
MB 280-516898/1-A	Method Blank	Total/NA	Water	200.7	
LCS 280-516898/2-A	Lab Control Sample	Total/NA	Water	200.7	
550-151758-15 MS	CH-CCR-W303-1020	Total/NA	Water	200.7	
550-151758-15 MSD	CH-CCR-W303-1020	Total/NA	Water	200.7	

Analysis Batch: 517283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-1	CH-CCR-M52-1020	Total/NA	Water	200.7 Rev 4.4	516897
550-151758-3	CH-CCR-M53-1020	Total/NA	Water	200.7 Rev 4.4	516897
550-151758-5	CH-CCR-M55-1020	Total/NA	Water	200.7 Rev 4.4	516897
550-151758-7	CH-CCR-M69-1020	Total/NA	Water	200.7 Rev 4.4	516897
550-151758-9	CH-CCR-M70-1020	Total/NA	Water	200.7 Rev 4.4	516897
550-151758-11	CH-CCR-W301-1020	Total/NA	Water	200.7 Rev 4.4	516897
550-151758-13	CH-CCR-W302-1020	Total/NA	Water	200.7 Rev 4.4	516897
550-151758-15	CH-CCR-W303-1020	Total/NA	Water	200.7 Rev 4.4	516898
550-151758-17	CH-CCR-W304-1020	Total/NA	Water	200.7 Rev 4.4	516898
550-151758-19	CH-CCR-FD03-1020	Total/NA	Water	200.7 Rev 4.4	516898
550-151758-21	CH-CCR-W305-1020	Total/NA	Water	200.7 Rev 4.4	516898
550-151758-23	CH-CCR-W306-1020	Total/NA	Water	200.7 Rev 4.4	516898
550-151758-25	CH-CCR-W307-1020	Total/NA	Water	200.7 Rev 4.4	516898
550-151758-27	CH-CCR-W308-1020	Total/NA	Water	200.7 Rev 4.4	516898
550-151758-29	CH-CCR-W309-1020	Total/NA	Water	200.7 Rev 4.4	516898
550-151758-31	CH-CCR-W314-1020	Total/NA	Water	200.7 Rev 4.4	516898

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Metals (Continued)

Analysis Batch: 517283 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-34	CH-CCR-FD04-1020	Total/NA	Water	200.7 Rev 4.4	516898
MB 280-516897/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	516897
MB 280-516898/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	516898
LCS 280-516897/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	516897
LCS 280-516898/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	516898
550-151758-15 MS	CH-CCR-W303-1020	Total/NA	Water	200.7 Rev 4.4	516898
550-151758-15 MSD	CH-CCR-W303-1020	Total/NA	Water	200.7 Rev 4.4	516898
550-151948-D-21-B MS	Matrix Spike	Total/NA	Water	200.7 Rev 4.4	516897
550-151948-D-21-C MSD	Matrix Spike Duplicate	Total/NA	Water	200.7 Rev 4.4	516897

Prep Batch: 517511

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-33	CH-CCR-W317-1020	Total/NA	Water	200.7	
MB 280-517511/1-A	Method Blank	Total/NA	Water	200.7	
LCS 280-517511/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 280-517511/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	

Analysis Batch: 517950

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-33	CH-CCR-W317-1020	Total/NA	Water	200.7 Rev 4.4	517511
MB 280-517511/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	517511
LCS 280-517511/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	517511
LCSD 280-517511/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	517511

General Chemistry

Analysis Batch: 223835

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-1	CH-CCR-M52-1020	Total/NA	Water	SM 2540C	
550-151758-3	CH-CCR-M53-1020	Total/NA	Water	SM 2540C	
550-151758-7	CH-CCR-M69-1020	Total/NA	Water	SM 2540C	
550-151758-9	CH-CCR-M70-1020	Total/NA	Water	SM 2540C	
550-151758-11	CH-CCR-W301-1020	Total/NA	Water	SM 2540C	
550-151758-13	CH-CCR-W302-1020	Total/NA	Water	SM 2540C	
550-151758-15	CH-CCR-W303-1020	Total/NA	Water	SM 2540C	
550-151758-21	CH-CCR-W305-1020	Total/NA	Water	SM 2540C	
550-151758-23	CH-CCR-W306-1020	Total/NA	Water	SM 2540C	
550-151758-33	CH-CCR-W317-1020	Total/NA	Water	SM 2540C	
MB 550-223835/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-223835/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-223835/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-151758-33 DU	CH-CCR-W317-1020	Total/NA	Water	SM 2540C	

Analysis Batch: 223938

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-2	CH-CCR-M52-1020	Dissolved	Water	SM 5310B	
550-151758-4	CH-CCR-M53-1020	Dissolved	Water	SM 5310B	
550-151758-6	CH-CCR-M55-1020	Dissolved	Water	SM 5310B	
550-151758-8	CH-CCR-M69-1020	Dissolved	Water	SM 5310B	
550-151758-10	CH-CCR-M70-1020	Dissolved	Water	SM 5310B	
550-151758-14	CH-CCR-W302-1020	Dissolved	Water	SM 5310B	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

General Chemistry (Continued)

Analysis Batch: 223938 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-16	CH-CCR-W303-1020	Dissolved	Water	SM 5310B	
550-151758-18	CH-CCR-W304-1020	Dissolved	Water	SM 5310B	
550-151758-20	CH-CCR-FD03-1020	Dissolved	Water	SM 5310B	
550-151758-22	CH-CCR-W305-1020	Dissolved	Water	SM 5310B	
550-151758-24	CH-CCR-W306-1020	Dissolved	Water	SM 5310B	
550-151758-26	CH-CCR-W307-1020	Dissolved	Water	SM 5310B	
550-151758-28	CH-CCR-W308-1020	Dissolved	Water	SM 5310B	
550-151758-30	CH-CCR-W309-1020	Dissolved	Water	SM 5310B	
550-151758-35	CH-CCR-FD04-1020	Dissolved	Water	SM 5310B	
MB 550-223938/34	Method Blank	Dissolved	Water	SM 5310B	
MB 550-223938/5	Method Blank	Dissolved	Water	SM 5310B	
LCS 550-223938/35	Lab Control Sample	Dissolved	Water	SM 5310B	
LCS 550-223938/6	Lab Control Sample	Dissolved	Water	SM 5310B	
LCSD 550-223938/36	Lab Control Sample Dup	Dissolved	Water	SM 5310B	
LCSD 550-223938/7	Lab Control Sample Dup	Dissolved	Water	SM 5310B	
550-151754-B-3 MS	Matrix Spike	Dissolved	Water	SM 5310B	
550-151754-C-3 MSD	Matrix Spike Duplicate	Dissolved	Water	SM 5310B	
550-151758-22 MS	CH-CCR-W305-1020	Dissolved	Water	SM 5310B	
550-151758-22 MSD	CH-CCR-W305-1020	Dissolved	Water	SM 5310B	

Analysis Batch: 223980

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-5	CH-CCR-M55-1020	Total/NA	Water	SM 2540C	
550-151758-17	CH-CCR-W304-1020	Total/NA	Water	SM 2540C	
550-151758-19	CH-CCR-FD03-1020	Total/NA	Water	SM 2540C	
550-151758-25	CH-CCR-W307-1020	Total/NA	Water	SM 2540C	
550-151758-27	CH-CCR-W308-1020	Total/NA	Water	SM 2540C	
550-151758-29	CH-CCR-W309-1020	Total/NA	Water	SM 2540C	
550-151758-31	CH-CCR-W314-1020	Total/NA	Water	SM 2540C	
550-151758-34	CH-CCR-FD04-1020	Total/NA	Water	SM 2540C	
MB 550-223980/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-223980/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-223980/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-151758-5 DU	CH-CCR-M55-1020	Total/NA	Water	SM 2540C	
550-151796-A-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 224081

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-12	CH-CCR-W301-1020	Dissolved	Water	SM 5310B	
550-151758-32	CH-CCR-W314-1020	Dissolved	Water	SM 5310B	
MB 550-224081/5	Method Blank	Dissolved	Water	SM 5310B	
LCS 550-224081/6	Lab Control Sample	Dissolved	Water	SM 5310B	
LCSD 550-224081/7	Lab Control Sample Dup	Dissolved	Water	SM 5310B	
550-151754-C-7 MS	Matrix Spike	Dissolved	Water	SM 5310B	
550-151754-D-7 MSD	Matrix Spike Duplicate	Dissolved	Water	SM 5310B	

Analysis Batch: 224082

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-1	CH-CCR-M52-1020	Total/NA	Water	SM 5310B	
550-151758-5	CH-CCR-M55-1020	Total/NA	Water	SM 5310B	
550-151758-9	CH-CCR-M70-1020	Total/NA	Water	SM 5310B	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

General Chemistry (Continued)

Analysis Batch: 224082 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-11	CH-CCR-W301-1020	Total/NA	Water	SM 5310B	
550-151758-13	CH-CCR-W302-1020	Total/NA	Water	SM 5310B	
550-151758-17	CH-CCR-W304-1020	Total/NA	Water	SM 5310B	
550-151758-21	CH-CCR-W305-1020	Total/NA	Water	SM 5310B	
550-151758-23	CH-CCR-W306-1020	Total/NA	Water	SM 5310B	
550-151758-25	CH-CCR-W307-1020	Total/NA	Water	SM 5310B	
550-151758-27	CH-CCR-W308-1020	Total/NA	Water	SM 5310B	
550-151758-29	CH-CCR-W309-1020	Total/NA	Water	SM 5310B	
550-151758-31	CH-CCR-W314-1020	Total/NA	Water	SM 5310B	
550-151758-34	CH-CCR-FD04-1020	Total/NA	Water	SM 5310B	
MB 550-224082/17	Method Blank	Total/NA	Water	SM 5310B	
MB 550-224082/47	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-224082/18	Lab Control Sample	Total/NA	Water	SM 5310B	
LCS 550-224082/48	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-224082/19	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
LCSD 550-224082/49	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-151758-34 MS	CH-CCR-FD04-1020	Total/NA	Water	SM 5310B	
550-151758-34 MSD	CH-CCR-FD04-1020	Total/NA	Water	SM 5310B	
550-151831-A-1 MS ^10	Matrix Spike	Total/NA	Water	SM 5310B	
550-151831-A-1 MSD ^10	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	

Analysis Batch: 224480

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-1	CH-CCR-M52-1020	Total/NA	Water	SM 4500 H+ B	
550-151758-3	CH-CCR-M53-1020	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-224480/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-224480/13	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
550-151754-A-18 DU	Duplicate	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 224675

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-5	CH-CCR-M55-1020	Total/NA	Water	SM 4500 H+ B	
550-151758-7	CH-CCR-M69-1020	Total/NA	Water	SM 4500 H+ B	
550-151758-9	CH-CCR-M70-1020	Total/NA	Water	SM 4500 H+ B	
550-151758-11	CH-CCR-W301-1020	Total/NA	Water	SM 4500 H+ B	
550-151758-13	CH-CCR-W302-1020	Total/NA	Water	SM 4500 H+ B	
550-151758-15	CH-CCR-W303-1020	Total/NA	Water	SM 4500 H+ B	
550-151758-17	CH-CCR-W304-1020	Total/NA	Water	SM 4500 H+ B	
550-151758-19	CH-CCR-FD03-1020	Total/NA	Water	SM 4500 H+ B	
550-151758-21	CH-CCR-W305-1020	Total/NA	Water	SM 4500 H+ B	
550-151758-23	CH-CCR-W306-1020	Total/NA	Water	SM 4500 H+ B	
550-151758-25	CH-CCR-W307-1020	Total/NA	Water	SM 4500 H+ B	
550-151758-27	CH-CCR-W308-1020	Total/NA	Water	SM 4500 H+ B	
550-151758-29	CH-CCR-W309-1020	Total/NA	Water	SM 4500 H+ B	
550-151758-31	CH-CCR-W314-1020	Total/NA	Water	SM 4500 H+ B	
550-151758-33	CH-CCR-W317-1020	Total/NA	Water	SM 4500 H+ B	
550-151758-34	CH-CCR-FD04-1020	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-224675/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-224675/13	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-224675/25	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
550-151758-5 DU	CH-CCR-M55-1020	Total/NA	Water	SM 4500 H+ B	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

General Chemistry (Continued)

Analysis Batch: 224675 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-25 DU	CH-CCR-W307-1020	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 224773

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-7	CH-CCR-M69-1020	Total/NA	Water	SM 5310B	
550-151758-15	CH-CCR-W303-1020	Total/NA	Water	SM 5310B	
550-151758-19	CH-CCR-FD03-1020	Total/NA	Water	SM 5310B	
MB 550-224773/5	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-224773/6	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-224773/7	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-151831-C-1 MS ^5	Matrix Spike	Total/NA	Water	SM 5310B	
550-151831-C-1 MSD ^5	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	

Analysis Batch: 224894

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-3	CH-CCR-M53-1020	Total/NA	Water	SM 5310B	
MB 550-224894/5	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-224894/6	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-224894/7	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-152348-A-1 MS ^5	Matrix Spike	Total/NA	Water	SM 5310B	
550-152348-A-1 MSD ^5	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	

Analysis Batch: 224972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-151758-1	CH-CCR-M52-1020	Total/NA	Water	SM 4500 NH3 D	
550-151758-3	CH-CCR-M53-1020	Total/NA	Water	SM 4500 NH3 D	
550-151758-5	CH-CCR-M55-1020	Total/NA	Water	SM 4500 NH3 D	
550-151758-7	CH-CCR-M69-1020	Total/NA	Water	SM 4500 NH3 D	
550-151758-9	CH-CCR-M70-1020	Total/NA	Water	SM 4500 NH3 D	
550-151758-11	CH-CCR-W301-1020	Total/NA	Water	SM 4500 NH3 D	
550-151758-13	CH-CCR-W302-1020	Total/NA	Water	SM 4500 NH3 D	
550-151758-15	CH-CCR-W303-1020	Total/NA	Water	SM 4500 NH3 D	
550-151758-17	CH-CCR-W304-1020	Total/NA	Water	SM 4500 NH3 D	
550-151758-19	CH-CCR-FD03-1020	Total/NA	Water	SM 4500 NH3 D	
550-151758-21	CH-CCR-W305-1020	Total/NA	Water	SM 4500 NH3 D	
550-151758-23	CH-CCR-W306-1020	Total/NA	Water	SM 4500 NH3 D	
550-151758-25	CH-CCR-W307-1020	Total/NA	Water	SM 4500 NH3 D	
550-151758-27	CH-CCR-W308-1020	Total/NA	Water	SM 4500 NH3 D	
550-151758-29	CH-CCR-W309-1020	Total/NA	Water	SM 4500 NH3 D	
550-151758-31	CH-CCR-W314-1020	Total/NA	Water	SM 4500 NH3 D	
550-151758-34	CH-CCR-FD04-1020	Total/NA	Water	SM 4500 NH3 D	
MB 550-224972/4	Method Blank	Total/NA	Water	SM 4500 NH3 D	
LCS 550-224972/5	Lab Control Sample	Total/NA	Water	SM 4500 NH3 D	
LCSD 550-224972/6	Lab Control Sample Dup	Total/NA	Water	SM 4500 NH3 D	
550-151843-C-1 MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 D	
550-151843-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 D	

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-M52-1020

Lab Sample ID: 550-151758-1

Date Collected: 10/22/20 15:14

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	224067	10/28/20 22:25	RDC	TAL PHX
Total/NA	Analysis	300.0		200	224067	10/28/20 22:44	RDC	TAL PHX
Total/NA	Analysis	300.0		5	224068	10/28/20 16:54	RDC	TAL PHX
Total/NA	Prep	200.7			224142	10/29/20 11:02	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224878	11/06/20 03:05	MGM	TAL PHX
Total/NA	Prep	200.7			516897	11/17/20 15:45	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517283	11/18/20 17:43	LMT	TAL DEN
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	225482	11/12/20 22:34	ARE	TAL PHX
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226262	11/20/20 17:14	ARE	TAL PHX
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226816	11/30/20 13:26	ARE	TAL PHX
Total/NA	Prep	245.1			223922	10/27/20 18:23	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224045	10/28/20 15:21	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	223835		YET	TAL PHX
					(Start)	10/27/20 08:45		
					(End)	10/28/20 09:30		
Total/NA	Analysis	SM 4500 H+ B		1	224480	11/02/20 18:00	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	224972	11/07/20 13:33	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	224082	10/28/20 14:38	MEG	TAL PHX

Client Sample ID: CH-CCR-M52-1020

Lab Sample ID: 550-151758-2

Date Collected: 10/22/20 15:14

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			223989	10/28/20 09:43	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224991	11/06/20 20:11	MGM	TAL PHX
Dissolved	Prep	200.8			223800	10/27/20 06:29	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		4	226148	11/20/20 10:26	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	223938	10/27/20 13:51	MEG	TAL PHX

Client Sample ID: CH-CCR-M53-1020

Lab Sample ID: 550-151758-3

Date Collected: 10/22/20 11:33

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	224210	10/29/20 19:07	RDC	TAL PHX
Total/NA	Analysis	300.0		200	224210	10/29/20 19:25	RDC	TAL PHX
Total/NA	Analysis	300.0		5	224068	10/28/20 18:43	RDC	TAL PHX
Total/NA	Prep	200.7			224142	10/29/20 11:02	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224878	11/06/20 03:09	MGM	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-M53-1020

Lab Sample ID: 550-151758-3

Date Collected: 10/22/20 11:33

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			516897	11/17/20 15:45	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517283	11/18/20 17:46	LMT	TAL DEN
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	225482	11/12/20 22:36	ARE	TAL PHX
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226262	11/20/20 17:16	ARE	TAL PHX
Total/NA	Prep	245.1			223922	10/27/20 18:23	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224045	10/28/20 15:23	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	223835	(Start) 10/27/20 08:45 (End) 10/28/20 09:30	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	224480	11/02/20 18:00	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	224972	11/07/20 13:42	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	224894	11/05/20 19:44	MEG	TAL PHX

Client Sample ID: CH-CCR-M53-1020

Lab Sample ID: 550-151758-4

Date Collected: 10/22/20 11:33

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			223989	10/28/20 09:43	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224991	11/06/20 20:15	MGM	TAL PHX
Dissolved	Prep	200.8			223800	10/27/20 06:29	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		4	226148	11/20/20 10:28	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	223938	10/27/20 14:02	MEG	TAL PHX

Client Sample ID: CH-CCR-M55-1020

Lab Sample ID: 550-151758-5

Date Collected: 10/24/20 09:02

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	224067	10/28/20 23:02	RDC	TAL PHX
Total/NA	Analysis	300.0		200	224067	10/28/20 23:20	RDC	TAL PHX
Total/NA	Analysis	300.0		5	224068	10/28/20 19:11	RDC	TAL PHX
Total/NA	Prep	200.7			224142	10/29/20 11:02	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224878	11/06/20 03:13	MGM	TAL PHX
Total/NA	Prep	200.7			516897	11/17/20 15:45	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517283	11/18/20 17:50	LMT	TAL DEN
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	225482	11/12/20 22:38	ARE	TAL PHX
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226262	11/20/20 17:18	ARE	TAL PHX
Total/NA	Prep	245.1			224052	10/28/20 18:28	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224200	10/29/20 17:39	SRR	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-M55-1020

Lab Sample ID: 550-151758-5

Date Collected: 10/24/20 09:02

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	223980		YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	224675	11/04/20 16:10	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	224972	11/07/20 13:50	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	224082	10/28/20 15:02	MEG	TAL PHX

Client Sample ID: CH-CCR-M55-1020

Lab Sample ID: 550-151758-6

Date Collected: 10/24/20 09:02

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			223989	10/28/20 09:43	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224991	11/06/20 20:18	MGM	TAL PHX
Dissolved	Prep	200.8			223800	10/27/20 06:29	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		4	226148	11/20/20 10:30	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	223938	10/27/20 14:15	MEG	TAL PHX

Client Sample ID: CH-CCR-M69-1020

Lab Sample ID: 550-151758-7

Date Collected: 10/23/20 09:47

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	224067	10/28/20 23:39	RDC	TAL PHX
Total/NA	Analysis	300.0		200	224067	10/28/20 23:57	RDC	TAL PHX
Total/NA	Analysis	300.0		5	224068	10/28/20 19:38	RDC	TAL PHX
Total/NA	Prep	200.7			224142	10/29/20 11:02	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224878	11/06/20 03:16	MGM	TAL PHX
Total/NA	Prep	200.7			516897	11/17/20 15:45	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517283	11/18/20 17:53	LMT	TAL DEN
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226262	11/20/20 17:52	ARE	TAL PHX
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226816	11/30/20 13:09	ARE	TAL PHX
Total/NA	Prep	245.1			224052	10/28/20 18:28	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224200	10/29/20 17:41	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	223835		YET	TAL PHX
					(Start)	10/27/20 08:45		
					(End)	10/28/20 09:30		
Total/NA	Analysis	SM 4500 H+ B		1	224675	11/04/20 16:10	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	224972	11/07/20 14:00	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	224773	11/04/20 17:42	MEG	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-M69-1020

Lab Sample ID: 550-151758-8

Date Collected: 10/23/20 09:47

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			223989	10/28/20 09:43	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224991	11/06/20 20:22	MGM	TAL PHX
Dissolved	Prep	200.8			223800	10/27/20 06:29	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		4	226148	11/20/20 10:34	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	223938	10/27/20 14:25	MEG	TAL PHX

Client Sample ID: CH-CCR-M70-1020

Lab Sample ID: 550-151758-9

Date Collected: 10/23/20 07:57

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	224067	10/29/20 00:52	RDC	TAL PHX
Total/NA	Analysis	300.0		200	224067	10/29/20 01:11	RDC	TAL PHX
Total/NA	Analysis	300.0		5	224068	10/28/20 20:33	RDC	TAL PHX
Total/NA	Prep	200.7			224142	10/29/20 11:02	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224878	11/06/20 03:20	MGM	TAL PHX
Total/NA	Prep	200.7			516897	11/17/20 15:45	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517283	11/18/20 17:56	LMT	TAL DEN
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	225482	11/12/20 22:40	ARE	TAL PHX
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226262	11/20/20 17:21	ARE	TAL PHX
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	227373	12/07/20 11:43	ARE	TAL PHX
Total/NA	Prep	245.1			224052	10/28/20 18:28	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224200	10/29/20 17:42	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	223835		YET	TAL PHX
					(Start)	10/27/20 08:45		
					(End)	10/28/20 09:30		
Total/NA	Analysis	SM 4500 H+ B		1	224675	11/04/20 16:10	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	224972	11/07/20 14:08	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	224082	10/28/20 15:25	MEG	TAL PHX

Client Sample ID: CH-CCR-M70-1020

Lab Sample ID: 550-151758-10

Date Collected: 10/23/20 07:57

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			223989	10/28/20 09:43	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224991	11/06/20 20:26	MGM	TAL PHX
Dissolved	Prep	200.8			223800	10/27/20 06:29	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		4	226148	11/20/20 10:32	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	223938	10/27/20 14:37	MEG	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W301-1020

Lab Sample ID: 550-151758-11

Date Collected: 10/22/20 09:05

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	224067	10/29/20 01:29	RDC	TAL PHX
Total/NA	Analysis	300.0		200	224067	10/29/20 01:48	RDC	TAL PHX
Total/NA	Analysis	300.0		5	224068	10/28/20 21:00	RDC	TAL PHX
Total/NA	Prep	200.7			224142	10/29/20 11:02	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224878	11/06/20 03:24	MGM	TAL PHX
Total/NA	Prep	200.7			516897	11/17/20 15:45	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517283	11/18/20 18:00	LMT	TAL DEN
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	225482	11/12/20 22:43	ARE	TAL PHX
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226262	11/20/20 17:23	ARE	TAL PHX
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226816	11/30/20 12:47	ARE	TAL PHX
Total/NA	Prep	245.1			223922	10/27/20 18:23	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224045	10/28/20 15:24	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	223835		YET	TAL PHX
					(Start)	10/27/20 08:45		
					(End)	10/28/20 09:30		
Total/NA	Analysis	SM 4500 H+ B		1	224675	11/04/20 16:10	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	224972	11/07/20 14:16	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	224082	10/28/20 15:37	MEG	TAL PHX

Client Sample ID: CH-CCR-W301-1020

Lab Sample ID: 550-151758-12

Date Collected: 10/22/20 09:05

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			223989	10/28/20 09:43	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224991	11/06/20 20:30	MGM	TAL PHX
Dissolved	Prep	200.8			223800	10/27/20 06:29	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		4	226148	11/20/20 10:36	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	224081	10/28/20 11:38	MEG	TAL PHX

Client Sample ID: CH-CCR-W302-1020

Lab Sample ID: 550-151758-13

Date Collected: 10/23/20 12:50

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	224067	10/29/20 02:06	RDC	TAL PHX
Total/NA	Analysis	300.0		200	224067	10/29/20 02:24	RDC	TAL PHX
Total/NA	Analysis	300.0		5	224068	10/28/20 22:23	RDC	TAL PHX
Total/NA	Prep	200.7			224142	10/29/20 11:02	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224878	11/06/20 03:28	MGM	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W302-1020

Lab Sample ID: 550-151758-13

Date Collected: 10/23/20 12:50

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			516897	11/17/20 15:45	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517283	11/18/20 18:03	LMT	TAL DEN
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	225482	11/12/20 22:45	ARE	TAL PHX
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226262	11/20/20 17:25	ARE	TAL PHX
Total/NA	Prep	245.1			224052	10/28/20 18:28	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224200	10/29/20 17:44	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	223835	(Start) 10/27/20 08:45 (End) 10/28/20 09:30	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	224675	11/04/20 16:10	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	224972	11/07/20 14:23	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	224082	10/28/20 16:09	MEG	TAL PHX

Client Sample ID: CH-CCR-W302-1020

Lab Sample ID: 550-151758-14

Date Collected: 10/23/20 12:50

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			223989	10/28/20 09:43	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224991	11/06/20 20:34	MGM	TAL PHX
Dissolved	Prep	200.8			223800	10/27/20 06:29	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		4	226148	11/20/20 10:43	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	223938	10/27/20 15:02	MEG	TAL PHX

Client Sample ID: CH-CCR-W303-1020

Lab Sample ID: 550-151758-15

Date Collected: 10/22/20 10:16

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	224067	10/29/20 02:43	RDC	TAL PHX
Total/NA	Analysis	300.0		200	224067	10/29/20 03:01	RDC	TAL PHX
Total/NA	Analysis	300.0		5	224068	10/28/20 22:50	RDC	TAL PHX
Total/NA	Prep	200.7			224142	10/29/20 11:02	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224878	11/06/20 03:31	MGM	TAL PHX
Total/NA	Prep	200.7			516898	11/17/20 15:45	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517283	11/18/20 18:27	LMT	TAL DEN
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	225482	11/12/20 22:47	ARE	TAL PHX
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226262	11/20/20 17:27	ARE	TAL PHX
Total/NA	Prep	245.1			223922	10/27/20 18:23	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224045	10/28/20 15:26	SRR	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W303-1020

Lab Sample ID: 550-151758-15

Date Collected: 10/22/20 10:16

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	223835		YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	224675	11/04/20 16:10	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	224972	11/07/20 14:32	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	224773	11/04/20 17:53	MEG	TAL PHX

Client Sample ID: CH-CCR-W303-1020

Lab Sample ID: 550-151758-16

Date Collected: 10/22/20 10:16

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			223989	10/28/20 09:43	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224991	11/06/20 20:37	MGM	TAL PHX
Dissolved	Prep	200.8			223800	10/27/20 06:29	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		4	226148	11/20/20 10:45	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	223938	10/27/20 15:15	MEG	TAL PHX

Client Sample ID: CH-CCR-W304-1020

Lab Sample ID: 550-151758-17

Date Collected: 10/23/20 14:05

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	224067	10/29/20 03:20	RDC	TAL PHX
Total/NA	Analysis	300.0		200	224067	10/29/20 03:38	RDC	TAL PHX
Total/NA	Analysis	300.0		5	224068	10/28/20 23:17	RDC	TAL PHX
Total/NA	Prep	200.7			224142	10/29/20 11:02	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224878	11/06/20 03:35	MGM	TAL PHX
Total/NA	Prep	200.7			516898	11/17/20 15:45	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517283	11/18/20 18:40	LMT	TAL DEN
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	225482	11/12/20 22:49	ARE	TAL PHX
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226262	11/20/20 17:29	ARE	TAL PHX
Total/NA	Prep	245.1			224052	10/28/20 18:28	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224200	10/29/20 17:45	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	223980		YET	TAL PHX
					(Start)	10/28/20 09:27		
					(End)	10/29/20 10:55		
Total/NA	Analysis	SM 4500 H+ B		1	224675	11/04/20 16:10	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	224972	11/07/20 14:38	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	224082	10/28/20 16:32	MEG	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W304-1020

Lab Sample ID: 550-151758-18

Date Collected: 10/23/20 14:05

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			223989	10/28/20 09:43	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224991	11/06/20 20:49	MGM	TAL PHX
Dissolved	Prep	200.8			223800	10/27/20 06:29	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		4	226148	11/20/20 10:47	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	223938	10/27/20 15:28	MEG	TAL PHX

Client Sample ID: CH-CCR-FD03-1020

Lab Sample ID: 550-151758-19

Date Collected: 10/23/20 07:57

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	224210	10/29/20 19:44	RDC	TAL PHX
Total/NA	Analysis	300.0		200	224210	10/29/20 20:02	RDC	TAL PHX
Total/NA	Analysis	300.0		5	224068	10/29/20 00:12	RDC	TAL PHX
Total/NA	Prep	200.7			224142	10/29/20 11:02	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224878	11/06/20 03:47	MGM	TAL PHX
Total/NA	Prep	200.7			516898	11/17/20 15:45	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517283	11/18/20 18:44	LMT	TAL DEN
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226262	11/20/20 17:35	ARE	TAL PHX
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226816	11/30/20 12:49	ARE	TAL PHX
Total/NA	Prep	245.1			224052	10/28/20 18:28	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224200	10/29/20 17:47	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	223980		YET	TAL PHX
					(Start)	10/28/20 09:27		
					(End)	10/29/20 10:55		
Total/NA	Analysis	SM 4500 H+ B		1	224675	11/04/20 16:10	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	224972	11/07/20 15:05	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	224773	11/04/20 18:04	MEG	TAL PHX

Client Sample ID: CH-CCR-FD03-1020

Lab Sample ID: 550-151758-20

Date Collected: 10/23/20 07:57

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			223989	10/28/20 09:43	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224991	11/06/20 20:52	MGM	TAL PHX
Dissolved	Prep	200.8			223800	10/27/20 06:29	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		4	226148	11/20/20 10:49	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	223938	10/27/20 15:41	MEG	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W305-1020

Lab Sample ID: 550-151758-21

Date Collected: 10/22/20 12:47

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	224210	10/29/20 20:57	RDC	TAL PHX
Total/NA	Analysis	300.0		200	224210	10/29/20 21:16	RDC	TAL PHX
Total/NA	Analysis	300.0		5	224068	10/29/20 00:40	RDC	TAL PHX
Total/NA	Prep	200.7			224142	10/29/20 11:02	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224878	11/06/20 03:50	MGM	TAL PHX
Total/NA	Prep	200.7			516898	11/17/20 15:45	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517283	11/18/20 19:00	LMT	TAL DEN
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226262	11/20/20 17:37	ARE	TAL PHX
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226816	11/30/20 12:51	ARE	TAL PHX
Total/NA	Prep	245.1			223922	10/27/20 18:23	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224045	10/28/20 15:27	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	223835	(Start) 10/27/20 08:45 (End) 10/28/20 09:30	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	224675	11/04/20 16:10	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	224972	11/07/20 15:15	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	224082	10/28/20 16:56	MEG	TAL PHX

Client Sample ID: CH-CCR-W305-1020

Lab Sample ID: 550-151758-22

Date Collected: 10/22/20 12:47

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			223989	10/28/20 09:43	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224991	11/06/20 20:56	MGM	TAL PHX
Dissolved	Prep	200.8			223800	10/27/20 06:29	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		2	225097	11/09/20 20:29	ARE	TAL PHX
Dissolved	Prep	200.8			223800	10/27/20 06:29	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		4	226148	11/20/20 10:51	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	223938	10/27/20 16:57	MEG	TAL PHX

Client Sample ID: CH-CCR-W306-1020

Lab Sample ID: 550-151758-23

Date Collected: 10/22/20 13:55

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	224210	10/29/20 21:34	RDC	TAL PHX
Total/NA	Analysis	300.0		200	224210	10/29/20 21:52	RDC	TAL PHX
Total/NA	Analysis	300.0		5	224068	10/29/20 01:07	RDC	TAL PHX
Total/NA	Prep	200.7			224142	10/29/20 11:02	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224878	11/06/20 03:54	MGM	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W306-1020

Lab Sample ID: 550-151758-23

Date Collected: 10/22/20 13:55

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			516898	11/17/20 15:45	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517283	11/18/20 19:04	LMT	TAL DEN
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	226262	11/20/20 17:39	ARE	TAL PHX
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		4	226828	11/30/20 14:29	ARE	TAL PHX
Total/NA	Prep	245.1			223922	10/27/20 18:23	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224045	10/28/20 15:32	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	223835	(Start) 10/27/20 08:45 (End) 10/28/20 09:30	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	224675	11/04/20 16:10	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	224972	11/07/20 15:24	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	224082	10/28/20 17:08	MEG	TAL PHX

Client Sample ID: CH-CCR-W306-1020

Lab Sample ID: 550-151758-24

Date Collected: 10/22/20 13:55

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			223989	10/28/20 09:43	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224991	11/06/20 21:00	MGM	TAL PHX
Dissolved	Prep	200.8			223800	10/27/20 06:29	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		4	226148	11/20/20 10:53	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	223938	10/27/20 17:33	MEG	TAL PHX

Client Sample ID: CH-CCR-W307-1020

Lab Sample ID: 550-151758-25

Date Collected: 10/23/20 15:20

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	224210	10/29/20 22:48	RDC	TAL PHX
Total/NA	Analysis	300.0		200	224210	10/29/20 23:06	RDC	TAL PHX
Total/NA	Analysis	300.0		5	224068	10/29/20 02:02	RDC	TAL PHX
Total/NA	Prep	200.7			224142	10/29/20 11:02	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224878	11/06/20 05:55	MGM	TAL PHX
Total/NA	Prep	200.7			516898	11/17/20 15:45	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517283	11/18/20 19:07	LMT	TAL DEN
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226262	11/20/20 17:42	ARE	TAL PHX
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226816	11/30/20 13:28	ARE	TAL PHX
Total/NA	Prep	245.1			224052	10/28/20 18:28	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224200	10/29/20 17:51	SRR	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W307-1020

Lab Sample ID: 550-151758-25

Date Collected: 10/23/20 15:20

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	223980		YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	224675	11/04/20 16:10	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	224972	11/07/20 15:31	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	224082	10/28/20 17:19	MEG	TAL PHX

Client Sample ID: CH-CCR-W307-1020

Lab Sample ID: 550-151758-26

Date Collected: 10/23/20 15:20

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			223989	10/28/20 09:43	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224991	11/06/20 21:04	MGM	TAL PHX
Dissolved	Prep	200.8			223800	10/27/20 06:29	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		2	225097	11/09/20 20:33	ARE	TAL PHX
Dissolved	Prep	200.8			223800	10/27/20 06:29	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		4	226148	11/20/20 10:55	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	223938	10/27/20 17:43	MEG	TAL PHX

Client Sample ID: CH-CCR-W308-1020

Lab Sample ID: 550-151758-27

Date Collected: 10/24/20 08:04

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	224210	10/29/20 23:24	RDC	TAL PHX
Total/NA	Analysis	300.0		200	224210	10/29/20 23:43	RDC	TAL PHX
Total/NA	Analysis	300.0		5	224068	10/29/20 02:29	RDC	TAL PHX
Total/NA	Prep	200.7			224142	10/29/20 11:02	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224878	11/06/20 05:58	MGM	TAL PHX
Total/NA	Prep	200.7			516898	11/17/20 15:45	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517283	11/18/20 19:11	LMT	TAL DEN
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226262	11/20/20 17:44	ARE	TAL PHX
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226816	11/30/20 13:03	ARE	TAL PHX
Total/NA	Prep	245.1			224052	10/28/20 18:28	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224200	10/29/20 17:53	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	223980		YET	TAL PHX
					(Start)	10/28/20 09:27		
					(End)	10/29/20 10:55		
Total/NA	Analysis	SM 4500 H+ B		1	224675	11/04/20 16:10	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	224972	11/07/20 15:37	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	224082	10/28/20 17:32	MEG	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W308-1020

Lab Sample ID: 550-151758-28

Date Collected: 10/24/20 08:04

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			223989	10/28/20 09:43	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224991	11/06/20 21:08	MGM	TAL PHX
Dissolved	Prep	200.8			223800	10/27/20 06:29	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		4	226148	11/20/20 10:57	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	223938	10/27/20 17:54	MEG	TAL PHX

Client Sample ID: CH-CCR-W309-1020

Lab Sample ID: 550-151758-29

Date Collected: 10/24/20 10:10

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	224210	10/30/20 00:38	RDC	TAL PHX
Total/NA	Analysis	300.0		200	224210	10/30/20 00:56	RDC	TAL PHX
Total/NA	Analysis	300.0		5	224208	10/29/20 14:54	RDC	TAL PHX
Total/NA	Prep	200.7			224142	10/29/20 11:02	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224878	11/06/20 06:02	MGM	TAL PHX
Total/NA	Prep	200.7			516898	11/17/20 15:45	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517283	11/18/20 19:14	LMT	TAL DEN
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226262	11/20/20 17:46	ARE	TAL PHX
Total/NA	Prep	245.1			224052	10/28/20 18:28	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224200	10/29/20 17:54	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	223980		YET	TAL PHX
					(Start)	10/28/20 09:27		
					(End)	10/29/20 10:55		
Total/NA	Analysis	SM 4500 H+ B		1	224675	11/04/20 16:10	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	224972	11/07/20 15:44	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	224082	10/28/20 17:44	MEG	TAL PHX

Client Sample ID: CH-CCR-W309-1020

Lab Sample ID: 550-151758-30

Date Collected: 10/24/20 10:10

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			223989	10/28/20 09:43	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224991	11/06/20 21:11	MGM	TAL PHX
Dissolved	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		2	225482	11/12/20 22:32	ARE	TAL PHX
Dissolved	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		2	226262	11/20/20 17:12	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	223938	10/27/20 18:07	MEG	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W314-1020

Lab Sample ID: 550-151758-31

Date Collected: 10/23/20 11:17

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	224210	10/30/20 01:52	RDC	TAL PHX
Total/NA	Analysis	300.0		200	224210	10/30/20 02:10	RDC	TAL PHX
Total/NA	Analysis	300.0		5	224208	10/29/20 16:44	RDC	TAL PHX
Total/NA	Prep	200.7			224142	10/29/20 11:02	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224878	11/06/20 06:06	MGM	TAL PHX
Total/NA	Prep	200.7			516898	11/17/20 15:45	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517283	11/18/20 19:17	LMT	TAL DEN
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226262	11/20/20 17:48	ARE	TAL PHX
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226816	11/30/20 13:05	ARE	TAL PHX
Total/NA	Prep	245.1			224052	10/28/20 18:28	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224200	10/29/20 17:56	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	223980	(Start) 10/28/20 09:27 (End) 10/29/20 10:55	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	224675	11/04/20 16:10	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	224972	11/07/20 15:50	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	224082	10/28/20 17:58	MEG	TAL PHX

Client Sample ID: CH-CCR-W314-1020

Lab Sample ID: 550-151758-32

Date Collected: 10/23/20 11:17

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			223989	10/28/20 09:43	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224991	11/06/20 21:15	MGM	TAL PHX
Dissolved	Prep	200.8			223800	10/27/20 06:29	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		2	225097	11/09/20 20:37	ARE	TAL PHX
Dissolved	Prep	200.8			223800	10/27/20 06:29	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		4	226148	11/20/20 10:59	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	224081	10/28/20 12:02	MEG	TAL PHX

Client Sample ID: CH-CCR-W317-1020

Lab Sample ID: 550-151758-33

Date Collected: 10/21/20 11:27

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	224210	10/30/20 01:15	RDC	TAL PHX
Total/NA	Analysis	300.0		200	224210	10/30/20 01:33	RDC	TAL PHX
Total/NA	Prep	200.7			224142	10/29/20 11:02	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224878	11/06/20 03:01	MGM	TAL PHX
Total/NA	Prep	200.7			517511	11/23/20 08:09	MAB	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517950	11/23/20 16:37	LMT	TAL DEN

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-W317-1020

Lab Sample ID: 550-151758-33

Date Collected: 10/21/20 11:27

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226262	11/20/20 17:54	ARE	TAL PHX
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226816	11/30/20 13:12	ARE	TAL PHX
Total/NA	Prep	245.1			223922	10/27/20 18:23	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224045	10/28/20 15:33	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	223835		YET	TAL PHX
					(Start)	10/27/20 08:45		
					(End)	10/28/20 09:30		
Total/NA	Analysis	SM 4500 H+ B		1	224675	11/04/20 16:10	MRR	TAL PHX

Client Sample ID: CH-CCR-FD04-1020

Lab Sample ID: 550-151758-34

Date Collected: 10/23/20 15:20

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	224210	10/29/20 22:11	RDC	TAL PHX
Total/NA	Analysis	300.0		200	224210	10/29/20 22:29	RDC	TAL PHX
Total/NA	Analysis	300.0		5	224208	10/29/20 17:12	RDC	TAL PHX
Total/NA	Prep	200.7			224142	10/29/20 11:02	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	224878	11/06/20 06:10	MGM	TAL PHX
Total/NA	Prep	200.7			516898	11/17/20 15:45	EC	TAL DEN
Total/NA	Analysis	200.7 Rev 4.4		1	517283	11/18/20 19:21	LMT	TAL DEN
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226262	11/20/20 17:50	ARE	TAL PHX
Total/NA	Prep	200.8			224433	11/02/20 10:09	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	226816	11/30/20 13:07	ARE	TAL PHX
Total/NA	Prep	245.1			224052	10/28/20 18:28	SRR	TAL PHX
Total/NA	Analysis	245.1		1	224200	10/29/20 17:57	SRR	TAL PHX
Total/NA	Analysis	SM 2540C		1	223980		YET	TAL PHX
					(Start)	10/28/20 09:27		
					(End)	10/29/20 10:55		
Total/NA	Analysis	SM 4500 H+ B		1	224675	11/04/20 16:10	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	224972	11/07/20 15:57	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	224082	10/28/20 19:12	MEG	TAL PHX

Client Sample ID: CH-CCR-FD04-1020

Lab Sample ID: 550-151758-35

Date Collected: 10/23/20 15:20

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			223989	10/28/20 09:43	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	224991	11/06/20 20:07	MGM	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Client Sample ID: CH-CCR-FD04-1020

Lab Sample ID: 550-151758-35

Date Collected: 10/23/20 15:20

Matrix: Water

Date Received: 10/26/20 14:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.8			223800	10/27/20 06:29	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		2	225097	11/09/20 20:39	ARE	TAL PHX
Dissolved	Prep	200.8			223800	10/27/20 06:29	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		4	226148	11/20/20 11:01	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	223938	10/27/20 18:30	MEG	TAL PHX

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Laboratory: Eurofins TestAmerica, Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-08-21
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
200.8 LL	200.8	Water	Molybdenum
SM 4500 H+ B		Water	Temperature
SM 5310B		Water	Dissolved Organic Carbon - Quad

Laboratory: Eurofins TestAmerica, Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-21
A2LA	ISO/IEC 17025	2907.01	10-31-21
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-08-21
Arizona	State	AZ0713	12-20-20
Arkansas DEQ	State	19-047-0	06-01-21
California	State	2513	01-08-21
Connecticut	State	PH-0686	09-30-20 *
Florida	NELAP	E87667-57	07-01-21
Georgia	State	4025-011	01-09-21
Illinois	NELAP	2000172019-1	04-30-21
Iowa	State	IA#370	12-01-20
Kansas	NELAP	E-10166	04-30-21
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-21
Maine	State	2019011 (231)	03-03-21
Minnesota	NELAP	1788752	12-31-20
Nevada	State	CO000262020-1	07-31-21
New Hampshire	NELAP	205319	04-29-21
New Jersey	NELAP	190002	06-30-21
New York	NELAP	59923	04-01-21
North Carolina (WW/SW)	State	358	12-31-20
North Dakota	State	R-034	01-08-21
Oklahoma	State	2018-006	09-01-21
Oregon	NELAP	4025-011	01-08-21
Pennsylvania	NELAP	013	07-31-21
South Carolina	State	72002001	01-08-21
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-20-18	09-30-21
US Fish & Wildlife	US Federal Programs	058448	08-01-21
USDA	US Federal Programs	P330-18-00099	03-26-21
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-21
Virginia	NELAP	10490	06-14-21
Washington	State	C583-19	08-03-21
West Virginia DEP	State	354	11-30-20
Wisconsin	State	999615430	08-31-21
Wyoming (UST)	A2LA	2907.01	10-31-21

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins TestAmerica, Phoenix

Method Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-151758-1
SDG: APS Cholla Power Plant (BAP)

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PHX
200.7 Rev 4.4	Metals (ICP)	EPA	TAL DEN
200.7 Rev 4.4	Metals (ICP)	40CFR136A	TAL PHX
200.8 LL	Metals (ICP/MS)	EPA	TAL PHX
245.1	Mercury (CVAA)	EPA	TAL PHX
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PHX
SM 4500 H+ B	pH	SM	TAL PHX
SM 4500 NH3 D	Ammonia	SM	TAL PHX
SM 5310B	Organic Carbon, Dissolved (DOC)	SM	TAL PHX
SM 5310B	Organic Carbon, Total (TOC)	SM	TAL PHX
200.7	Preparation, Total Metals	EPA	TAL DEN
200.7	Preparation, Total Metals	EPA	TAL PHX
200.8	Preparation, Total Metals	EPA	TAL PHX
245.1	Preparation, Mercury	EPA	TAL PHX

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

TestAmerica Phoenix

4625 E Colton Center Blvd
Suite 189
Phoenix, AZ 85040
phone 602.437.3340 fax 602.454.9300



550-151758 Chain of Custody

Chain of Custody Record

Program: ☐ DW ☐ MPDES ☐ RCRA ☒ Other: CCR

151758

TestAmerica Laboratories, Inc.

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Contact		Natalie Chrisman (602) 250-3608		Lab Contact: Ken Baker		Date: _____		COC No: _____													
Arizona Public Service 4801 Cholla Lake Rd Joseph City, AZ 86032 (928) 587-0319 Phone FAX		Analysis Turnaround Time <input checked="" type="checkbox"/> CALENDAR DAYS <input checked="" type="checkbox"/> WORKING DAYS TAT if different from Below: _____ <input checked="" type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Jim Edwards / (928) 288-1241		Carrier: _____		1 of 2 COCs													
Project Name: CCR Groundwater Monitoring Site: APS Cholla Power Plant (BAP) Project #:								Sampler: _____ For Lab Use Only: Walk-in Client: _____ Lab Sampling: _____ Job / SDG No.: _____													
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	EPA 300.0 (Cl, F, SO4)	EPA 200.7 - Totals (B, Ca, Be, Li, Fe, Mn)	EPA 200.7 - Dissolved (Fe, Mn)	EPA 200.8 - Totals (Sb, As, Ba, Cd, Co, Cr, Pb, Mo, Se, Ti)	EPA 200.8 - Dissolved (As, Co)	EPA 245.1 - Totals (Hg)	SM 4500-HB (pH)	SM 2540C (TDS)	SM 5310B (TOC, DOC)	SM 4500D (NH3 as N)	SM 4500E/B (NO3+NO2 as N)	Sample Specific Notes:		
1+2 CH-CCR-M52-1020	10/22/20	15:14	G	W	12	N	X	X	X	X	X	X	X	X	X	X	X	X	X	Low Flow	
3+4 CH-CCR-M53-1020	10/22/20	11:33	G	W	12	N	X	X	X	X	X	X	X	X	X	X	X	X	X	"	
5+6 CH-CCR-M55-1020	10/24/20	08:02	G	W	12	N	X	X	X	X	X	X	X	X	X	X	X	X	X	"	
7+8 CH-CCR-M69-1020	10/23/20	08:47	G	W	12	N	X	X	X	X	X	X	X	X	X	X	X	X	X	"	
9+10 CH-CCR-M70-1020	10/23/20	07:57	G	W	12	N	X	X	X	X	X	X	X	X	X	X	X	X	X	"	
11+12 CH-CCR-W301-1020	10/22/20	09:05	G	W	12	N	X	X	X	X	X	X	X	X	X	X	X	X	X	"	
13+14 CH-CCR-W302-1020	10/23/20	12:50	G	W	12	N	X	X	X	X	X	X	X	X	X	X	X	X	X	"	
15+16 CH-CCR-W303-1020	10/22/20	10:16	G	W	12	N	X	X	X	X	X	X	X	X	X	X	X	X	X	"	
17+18 CH-CCR-W304-1020	10/23/20	14:05	G	W	12	N	X	X	X	X	X	X	X	X	X	X	X	X	X	"	
19+20 CH-CCR-FD03-1020	10/23/20	07:57	G	W	12	N	X	X	X	X	X	X	X	X	X	X	X	X	X	"	
Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other _____						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)															
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.						1 4 4 4 4 4 4 1 1 2 3 3															
<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown						<input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months															
Special Instructions/QC Requirements & Comments: Perform Method 200.8 with collision cell. * As marked on the bottle; perform dissolved analyses with sample provided in bottles marked 'field filtered'						35120113-															
Custody Seal Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temp. (°C): Obs'd: _____		Cor'd: _____		Therm ID No.:													
Relinquished by: _____		Company: _____		Date/Time: 10/22/20		Received by: _____		Company: _____		Date/Time: 10/22/20		Received by: _____		Company: _____		Date/Time: 10/22/20		Received by: _____		Company: _____	
Relinquished by: _____		Company: _____		Date/Time: 10/23/20		Received by: _____		Company: _____		Date/Time: 10/23/20		Received by: _____		Company: _____		Date/Time: 10/23/20		Received by: _____		Company: _____	
Relinquished by: _____		Company: _____		Date/Time: 10/23/20		Received by: _____		Company: _____		Date/Time: 10/23/20		Received by: _____		Company: _____		Date/Time: 10/23/20		Received by: _____		Company: _____	

TestAmerica Phoenix
4625 E Cotton Center Blvd
Suite 189
Phoenix, AZ 85040
phone 602.437.3340 fax 602.454.9303

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other: CCR

Client Contact: **Natalie Chrisman** (602) 250-3608

Lab Contact: **Ken Baker** (928) 288-1241

Date: **15/5/2015**

Arizona Public Service
4801 Cholla Lake Rd
Joseph City, AZ 86032
(928) 587-0319
FAX
Project Name: CCR Groundwater Monitoring
Site: APS Cholla Power Plant (BAP)
Project #:

Analysis Turnaround Time
☒ CALENDAR DAYS ☒ WORKING DAYS
TAT if different from Below
☒ 2 weeks
☐ 1 week
☐ 2 days
☐ 1 day

Jim Edwards / (928) 288-1241
Carrier:

COC No: **2** of **2** COCs
Sampler:
For Lab Use Only:
Walk-in Client:
Lab Sampling:
Job / SDG No.:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	EPA 300.0 (Cl, F, SO4)	EPA 200.7 - Totals (B, Ca, Be, Li, Fe, Mn)	EPA 200.7 - Dissolved (Fe, Mn)	EPA 200.8 - Totals (Sb, As, Ba, Cd, Co, Cr, Pb, Mo, Se, Ti)	EPA 200.8 - Dissolved (As, Co)	EPA 245.1 - Totals (Hg)	SM 4500-HB (pH)	SM 2540C (TDS)	SM 5310B (TOC, DOC)	SM 4500D (NH3 as N)	SM 4500E/B (NO3+NO2 as N)	EPA 200.7 - Totals (B, Ca, Be, Li)	Sample Specific Notes:
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21+23 CH-CCR-W305-1020	10/21/20	17:47	G	W	12	*	N	X	X	X	X	X	X	X	X	X	X	X	X		Low Flow
23+24 CH-CCR-W306-1020		13:55	G	W	12	*	N	X	X	X	X	X	X	X	X	X	X	X	X		
25+26 CH-CCR-W307-1020	10/23/20	15:20	G	W	12	*	N	X	X	X	X	X	X	X	X	X	X	X	X		
27+28 CH-CCR-W308-1020	10/24/20	08:04	G	W	12	*	N	X	X	X	X	X	X	X	X	X	X	X	X		
29+30 CH-CCR-W309-1020		10:10	G	W	12	*	N	X	X	X	X	X	X	X	X	X	X	X	X		
31+32 CH-CCR-W314-1020	10/23/20	11:17	G	W	12	*	N	X	X	X	X	X	X	X	X	X	X	X	X		
33+34 CH-CCR-W317-1020	10/21/20	11:27	G	W	2	N	N	X													
35+36 CH-CCR-FD04-1020	10/23/20	15:20	G	W	12	*	N	X	X	X	X	X	X	X	X	X	X	X	X		

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____															1	4	4	4	4	4	4	1	1	2	3	3	4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
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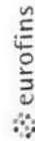
Special Instructions/QC Requirements & Comments:
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown
☐ Return to Client ☒ Disposal by Lab ☐ Archive for _____ Months

Perform Method 200.8 with collision cell. * As marked on the bottle: perform dissolved analyses with sample provided in bottles marked 'field filtered'

Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.:	Cooler Temp. (°C): Obs'd: _____	Therm ID No.: _____
Relinquished by: <i>[Signature]</i>	Company: <i>Wood</i>	Date/Time: <i>10/26/20 14:25</i>	Received by: <i>[Signature]</i>
Relinquished by: <i>[Signature]</i>	Company: <i>Wood</i>	Date/Time: <i>10/26/20 14:25</i>	Received by: <i>[Signature]</i>
Relinquished by: _____	Company: _____	Date/Time: _____	Received by: _____

CD 10/26/20

Chain of Custody Record



Environment Testing
America



Client Information (Sub Contract Lab)		Sampler:		Lab PM:	Camer Tracking No(s):		COC No:
Client Contact: Shipping/Receiving		Phone:		Baker, Ken	State of Origin: Arizona		550-29204.1
Company: TestAmerica Laboratories, Inc.		E-Mail:		Ken.Baker@Eurofins.com	Page: Page 1 of 2		
Address: 4955 Yarrow Street, City: Avrarda		Due Date Requested: 11/17/2020		Accreditations Required (See note): State Program - Arizona		Job #: 550-151758-1	
State, Zip: CO, 80002		TAT Requested (days):		Preservation Codes:		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - NaHSO4 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 L - EDA Z - other (specify)	
Phone: 303-736-0100(Tel) 303-431-7171(Fax)		PO #:		Field Filtered Sample (Yes or No)		Total Number of Containers	
Email:		WO #:		Perform MS/MSD (Yes or No)		Special Instructions/Note:	
Project #: 55009651		Sample Date		Sample Time		Sample Type (C=Comp, G=Grab)	
Site: CCR Groundwater Monitoring		Sample Date		Sample Time		Sample Type (C=Comp, G=Grab)	
Site: Arizona Public Service		Sample Date		Sample Time		Sample Type (C=Comp, G=Grab)	
Sample Identification - Client ID (Lab ID)		Sample Date		Sample Time		Sample Type (C=Comp, G=Grab)	
CH-CCR-M52-1020 (550-151758-1)		10/22/20		15:14		Water	
CH-CCR-M53-1020 (550-151758-3)		10/22/20		11:33		Water	
CH-CCR-M55-1020 (550-151758-5)		10/24/20		09:02		Water	
CH-CCR-M69-1020 (550-151758-7)		10/23/20		09:47		Water	
CH-CCR-M70-1020 (550-151758-9)		10/23/20		07:57		Water	
CH-CCR-W301-1020 (550-151758-11)		10/22/20		09:05		Water	
CH-CCR-W302-1020 (550-151758-13)		10/23/20		12:50		Water	
CH-CCR-W303-1020 (550-151758-15)		10/22/20		10:16		Water	
CH-CCR-W304-1020 (550-151758-17)		10/23/20		14:05		Water	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.

Possible Hazard Identification		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
Unconfirmed		Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For <input type="checkbox"/> Months	
Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/QC Requirements:	
Empty Kit Relinquished by:		Date:	
Relinquished by: <i>Paula H-13-20</i>		Date/Time: <i>13:15 TH</i>	
Relinquished by:		Date/Time: <i>11/14/2020 09:15</i>	
Relinquished by:		Date/Time:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Cooler Temperature(s) °C and Other Remarks: <i>3.4 IR11-0.3 50 11/14/2020</i>	

Ver: 01/16/2019

Chain of Custody Record

Client Information (Sub Contract Lab)		Sampler:		Lab PM:		Carrier Tracking No(s):		COC No:	
Client Contact: Shipping/Receiving		Phone:		Baker, Ken				550-29204.2	
Company: TestAmerica Laboratories, Inc.		E-Mail:		Ken Baker@Eurofinset.com		State of Origin: Arizona		Page: Page 2 of 2	
Address: 4955 Yarrow Street, City: Arvada State Zip: CO, 80002 Phone: 303-736-0100(Tel) 303-431-7171(Fax) Email:		Due Date Requested: 11/17/2020 TAT Requested (days):		Analysis Requested		Preservation Codes:		Job #: 550-151758-1	
Project Name: CCR Groundwater Monitoring Site: Arizona Public Service		Project #: 55009651 SSOW#:		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Total Number of Containers	
Sample Identification - Client ID (Lab ID)		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=other, BT=Tissue, A=Air)	
CH-CCR-FD03-1020 (550-151758-19)	10/23/20	07:57	Water	X					AZ Sample
CH-CCR-W305-1020 (550-151758-21)	10/22/20	12:47	Water	X					AZ Sample
CH-CCR-W306-1020 (550-151758-23)	10/22/20	13:55	Water	X					AZ Sample
CH-CCR-W307-1020 (550-151758-25)	10/23/20	15:20	Water	X					AZ Sample
CH-CCR-W308-1020 (550-151758-27)	10/24/20	08:04	Water	X					AZ Sample
CH-CCR-W309-1020 (550-151758-29)	10/24/20	10:10	Water	X					AZ Sample
CH-CCR-W314-1020 (550-151758-31)	10/23/20	11:17	Water	X					AZ Sample
CH-CCR-FD04-1020 (550-151758-34)	10/23/20	15:20	Water	X					AZ Sample

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.

Possible Hazard Identification		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
Unconfirmed	Return To Client	Disposal By Lab	Archive For
Deliverable Requested: I, II, III, IV, Other (specify)	Primary Deliverable Rank: 2		Months

Empty Kit Relinquished by:		Time:	
Relinquished by	Date/Time	Relinquished by	Date/Time
Gene 11-13-20	13:15	Gene 11-13-20	13:15
Relinquished by	Date/Time	Relinquished by	Date/Time
Relinquished by	Date/Time	Relinquished by	Date/Time

Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:	
Δ	Yes Δ No		

Login Sample Receipt Checklist

Client: Arizona Public Service Company

Job Number: 550-151758-1

SDG Number: APS Cholla Power Plant (BAP)

Login Number: 151758

List Number: 1

Creator: Maycock, Lisa

List Source: Eurofins TestAmerica, Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

Login Sample Receipt Checklist

Client: Arizona Public Service Company

Job Number: 550-151758-1

SDG Number: APS Cholla Power Plant (BAP)

Login Number: 151758

List Number: 2

Creator: O'Hara, Jake F

List Source: Eurofins TestAmerica, Denver

List Creation: 11/14/20 05:28 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	False	Limited volume received.
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Arizona Public Service Company

Job Number: 550-151758-1

SDG Number: APS Cholla Power Plant (BAP)

Login Number: 151758

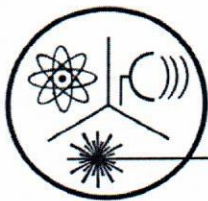
List Number: 3

Creator: O'Hara, Jake F

List Source: Eurofins TestAmerica, Denver

List Creation: 11/19/20 09:51 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	False	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



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FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service

400 N. 5th Street

Phoenix, AZ 85004

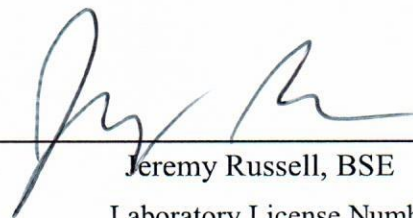
Sampling Date: October 24, 2020

Sample Received: October 26, 2020

Analysis Completed: November 12, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-M44D-1020	2.6 ± 0.3	1.5 ± 0.4	4.1 ± 0.5

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
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Jeremy Russell, BSE

Laboratory License Number AZ0462

11/12/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

October 24, 2020 1:53 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person _____

Owner/Contact Fax Number _____

Owner/Contact Phone Number _____

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	4.1 ± 0.5	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	2.6 ± 0.3	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	1.5 ± 0.4	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65342 _____

Lab ID Number: AZ0462 _____

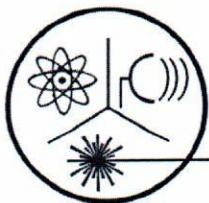
Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

Comments: CH-CCR-M44D-1020 _____

Authorized Signature: _____

Date Public Water System Notified: _____



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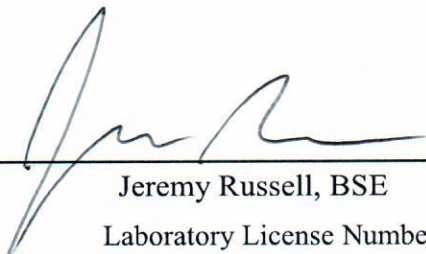
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: October 25, 2020
Sample Received: October 26, 2020
Analysis Completed: November 12, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-M46-1020	< 0.4	< 0.8	< 0.8

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
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Jeremy Russell, BSE
Laboratory License Number AZ0462

11/12/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

October 25, 2020 3:27 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person _____

Owner/Contact Fax Number _____

Owner/Contact Phone Number _____

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006		µg/L	
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	< 0.8	
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	< 0.8	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65343 _____

Lab ID Number: AZ0462 _____

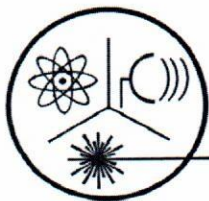
Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

Comments: CH-CCR-M46-1020 _____

Authorized Signature: _____

Date Public Water System Notified: _____



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Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

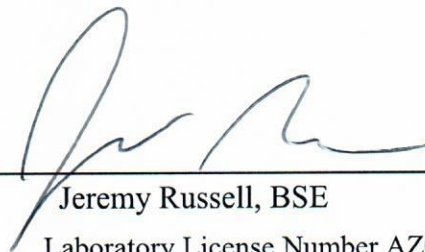
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: October 25, 2020
Sample Received: October 26, 2020
Analysis Completed: November 12, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-M50-1020	< 0.4	< 0.8	< 0.8

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
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Jeremy Russell, BSE

Laboratory License Number AZ0462

11/12/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

October 25, 2020 8:33 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person _____

Owner/Contact Fax Number _____

Owner/Contact Phone Number _____

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	< 0.8	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	< 0.8	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65344 _____

Lab ID Number: AZ0462 _____

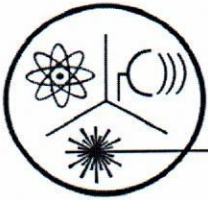
Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

Comments: CH-CCR-M50-1020 _____

Authorized Signature: _____

Date Public Water System Notified: _____



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Website: www.radsafe.com

(480) 897-9459
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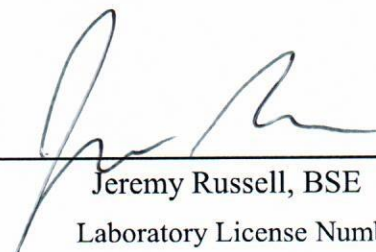
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: October 25, 2020
Sample Received: October 26, 2020
Analysis Completed: November 12, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-M51-1020	< 0.4	< 0.8	< 0.8

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
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Jeremy Russell, BSE
Laboratory License Number AZ0462

11/12/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04

PWS Name:

October 25, 2020

9:40

(24 hour clock)

Sample Date

Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

☐ EPDS #

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected:

☐ Quarterly

Date Q2 collected:

☐ Composite of four quarterly samples

Date Q3 collected:

Date Q4 collected:

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006		µg/L	
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	< 0.8	
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	< 0.8	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65345

Lab ID Number: AZ0462

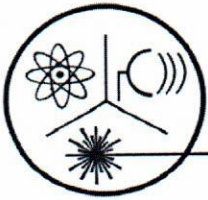
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: CH-CCR-M51-1020

Authorized Signature:

Date Public Water System Notified:



Radiation Safety Engineering, Inc.

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Website: www.radsafe.com

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FAX (480) 892-5446

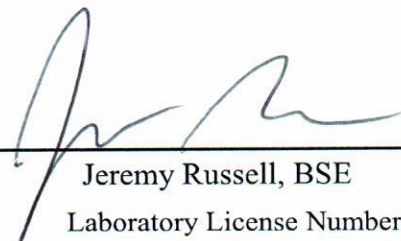
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: October 24, 2020
Sample Received: October 26, 2020
Analysis Completed: November 12, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-M64-1020	< 0.4	< 0.8	< 0.8

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
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Jeremy Russell, BSE

Laboratory License Number AZ0462

11/12/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04

PWS Name: _____

October 24, 2020 11:45 (24 hour clock)
Sample Date Sample Time

Owner/Contact Person _____

Owner/Contact Fax Number _____

Owner/Contact Phone Number _____

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	< 0.8	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	< 0.8	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65346

Lab ID Number: AZ0462

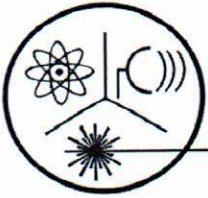
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: CH-CCR-M64-1020

Authorized Signature: _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

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Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: October 25, 2020
Sample Received: October 26, 2020
Analysis Completed: November 12, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-M65-1020	< 0.4	< 0.8	< 0.8

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
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Jeremy Russell, BSE

Laboratory License Number AZ0462

11/12/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

October 25, 2020 2:12 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	< 0.8	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	< 0.8	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65347 _____

Lab ID Number: AZ0462 _____

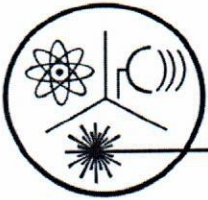
Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

Comments: CH-CCR-M65-1020 _____

Authorized Signature: _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

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Website: www.radsafe.com

(480) 897-9459

FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: October 25, 2020
Sample Received: October 26, 2020
Analysis Completed: November 12, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-M66-1020	< 0.4	< 0.8	< 0.8

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
------------------	------------	------------	------------


Jeremy Russell, BSE

Laboratory License Number AZ0462

11/12/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
 Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

October 25, 2020 12:45 (24 hour clock)
 Sample Date Sample Time Owner/Contact Person

Owner/Contact Fax Number Owner/Contact Phone Number

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring Date Q1 collected: _____
☐ Quarterly Date Q2 collected: _____
☐ Composite of four quarterly samples Date Q3 collected: _____
 Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006		µg/L	
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	< 0.8	
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	< 0.8	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65348

Lab ID Number: AZ0462

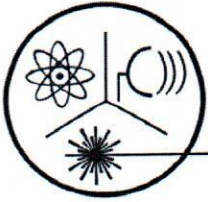
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: CH-CCR-M66-1020

Authorized Signature: _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: October 25, 2020
Sample Received: October 26, 2020
Analysis Completed: November 12, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-M67-1020	< 0.4	< 0.8	< 0.8

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
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Jeremy Russell, BSE

Laboratory License Number AZ0462

11/12/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

October 25, 2020 4:21 (24 hour clock)
Sample Date Sample Time

Owner/Contact Person _____

Owner/Contact Fax Number _____

Owner/Contact Phone Number _____

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	< 0.8	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	< 0.8	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65349 _____

Lab ID Number: AZ0462 _____

Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

Comments: CH-CCR-M67-1020 _____

Authorized Signature: _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121

Website: www.radsafe.com

(480) 897-9459

FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service

400 N. 5th Street

Phoenix, AZ 85004

Sampling Date: October 26, 2020

Sample Received: October 26, 2020

Analysis Completed: November 12, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-W123-1020	< 0.4	< 0.8	< 0.8

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
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Jeremy Russell, BSE

Laboratory License Number AZ0462

11/12/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

October 26, 2020 8:38 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person _____

Owner/Contact Fax Number _____

Owner/Contact Phone Number _____

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	< 0.8	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	< 0.8	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65350 _____

Lab ID Number: AZ0462 _____

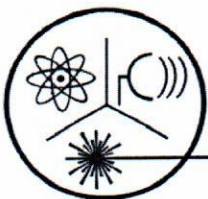
Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

Comments: CH-CCR-W123-1020 _____

Authorized Signature: _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: October 24, 2020
Sample Received: October 26, 2020
Analysis Completed: November 12, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-W125-1020	1.7 ± 0.2	1.4 ± 0.4	3.1 ± 0.4

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
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Jeremy Russell, BSE

Laboratory License Number AZ0462

11/12/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

October 24, 2020 3:16 (24 hour clock)

Sample Date

Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	3.1 ± 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	1.7 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	1.4 ± 0.4	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65351 _____

Lab ID Number: AZ0462 _____

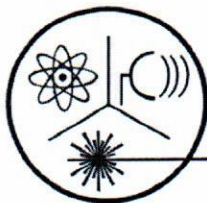
Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

Comments: CH-CCR-W125-1020 _____

Authorized Signature: _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121

Website: www.radsafe.com

(480) 897-9459

FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service

400 N. 5th Street

Phoenix, AZ 85004

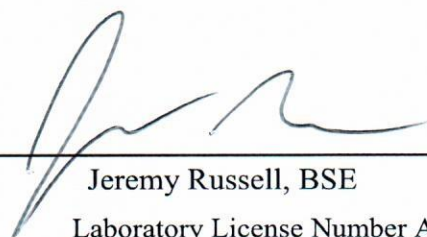
Sampling Date: October 25, 2020

Sample Received: October 26, 2020

Analysis Completed: November 12, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-W126-1020	< 0.4	< 0.8	< 0.8

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
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Jeremy Russell, BSE

Laboratory License Number AZ0462

11/12/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

October 25, 2020 11:34 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person _____

Owner/Contact Fax Number _____

Owner/Contact Phone Number _____

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006		µg/L	
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	< 0.8	
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	< 0.8	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65352 _____

Lab ID Number: AZ0462 _____

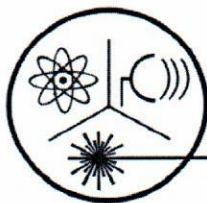
Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

Comments: CH-CCR-W126-1020 _____

Authorized Signature: _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121

Website: www.radsafe.com

(480) 897-9459

FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service

400 N. 5th Street

Phoenix, AZ 85004

Sampling Date: October 25, 2020

Sample Received: October 26, 2020

Analysis Completed: November 12, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-FD05-1020	0.4 ± 0.2	< 0.8	0.4 ± 0.2

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
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Jeremy Russell, BSE

Laboratory License Number AZ0462

11/12/2020

Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

October 25, 2020 9:40 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person _____

Owner/Contact Fax Number _____

Owner/Contact Phone Number _____

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006		µg/L	
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	0.4 ± 0.2	
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	0.4 ± 0.2	
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	< 0.8	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65353 _____

Lab ID Number: AZ0462 _____

Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

Comments: CH-CCR-FD05-1020 _____

Authorized Signature: _____

Date Public Water System Notified: _____

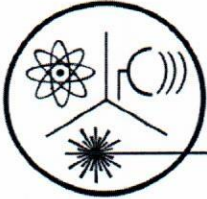
Client Information				Radiation Safety Engineering, Inc.											
Name: Natalie Chrisman/602-250-3608 Jim Edwards/928-288-1241				3245 North Washington Street Chandler, Arizona 85225											
Company: Arizona Public Service				Analysis Request											
Address: 4801 Cholla Lake Rd, Joseph City, AZ 86032															
Phone: 928-587-0319															
Site: APS Cholla Power Plant (FAP)															
Sample ID & Location (DWR#)	Collection		Media (DW* WW* Other)	Alphas	Betas	Uranium	Uranic	Ra-226	Ra-228	Ra-226 + Ra-228	H-3	Opposition	90 Sr-89/Sr-	Radon in	AirRadon in
	Date	Time													
CH-CCR-M44D-1020	10/24/20	1:53	GW					X	X	X					
CH-CCR-M46-1020	10/25/20	3:27	GW					X	X	X					
CH-CCR-M50-1020	10/25/20	8:33	GW					X	X	X					
CH-CCR-M51-1020	10/25/20	9:40	GW					X	X	X					
CH-CCR-M64-1020	10/24/20	11:45	GW					X	X	X					
CH-CCR-M65-1020	10/25/20	2:12	GW					X	X	X					
CH-CCR-M66-1020	10/25/20	12:45	GW					X	X	X					
CH-CCR-M67-1020	10/25/20	4:21	GW					X	X	X					
CH-CCR-W123-1020	10/26/20	8:38	GW					X	X	X					

Sample Receipt		Invoice to:		Instructions/Comments	
Total No. of Containers				Method HPGe	
Chain of Custody Seals					
Container Condition					
Lab No.					

Relinquished By:		Received By:		Company:		Date/Time:	
Natalie Chrisman		Pat Blum		RSE		10/26/20	
Company:		Company:		Company:		Date/Time:	
Company:		Company:		Company:		Date/Time:	

* DW = Drinking Water, WW = Waste Water, GW = Groundwater.
u:\client\forms\cofc.frm

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Radiation Safety Engineering, Inc.

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Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: October 22, 2020
Sample Received: October 26, 2020
Analysis Completed: November 10, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-M52-1020	< 0.5	< 0.8	< 0.8

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
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Robert L. Metzger, Ph.D., C.H.P.

11/10/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

October 22, 2020 3:14 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person _____

Owner/Contact Fax Number _____

Owner/Contact Phone Number _____

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	< 0.8	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	< 0.5	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	< 0.8	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

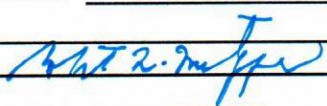
Specimen Number: RSE65324 _____

Lab ID Number: AZ0462 _____

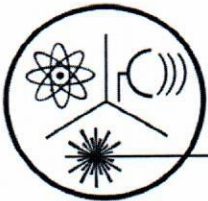
Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

Comments: CH-CCR-M52-1020 _____

Authorized Signature:  _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: October 22, 2020
Sample Received: October 26, 2020
Analysis Completed: November 10, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-M53-1020	< 0.5	< 0.8	< 0.8

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
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Robert L. Metzger, Ph.D., C.H.P.

11/10/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

October 22, 2020 _____ 11:33 _____ (24 hour clock)

Sample Date _____ Sample Time _____

Owner/Contact Person _____

Owner/Contact Fax Number _____

Owner/Contact Phone Number _____

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	< 0.8	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	< 0.5	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	< 0.8	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65325

Lab ID Number: AZ0462

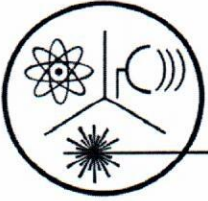
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: CH-CCR-M53-1020

Authorized Signature: 

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: October 24, 2020
Sample Received: October 26, 2020
Analysis Completed: November 10, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-M55-1020	< 0.4	< 0.8	< 0.8

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
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Robert L. Metzger, Ph.D., C.H.P.

11/10/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

October 24, 2020 9:02 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006		µg/L	
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	< 0.8	
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	< 0.8	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65326 _____

Lab ID Number: AZ0462 _____

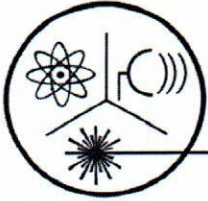
Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

Comments: CH-CCR-M55-1020 _____

Authorized Signature:  _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: October 23, 2020
Sample Received: October 26, 2020
Analysis Completed: November 10, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-M69-1020	< 0.4	< 0.8	< 0.8

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
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Robert L. Metzger, Ph.D., C.H.P.

11/10/2020

Date

Laboratory License Number AZ0462

Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report*****Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only*****

PWS ID#: AZ04

PWS Name: _____

October 23, 2020

9:47

(24 hour clock)

Sample Date

Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

☐ EPDS # _____**Compliance Sample Type:**☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006		µg/L	
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	< 0.8	
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	< 0.8	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

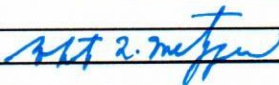
Specimen Number: RSE65327

Lab ID Number: AZ0462

Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: CH-CCR-M69-1020

Authorized Signature: 

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121

Website: www.radsafe.com

(480) 897-9459

FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service

400 N. 5th Street

Phoenix, AZ 85004

Sampling Date: October 23, 2020

Sample Received: October 26, 2020

Analysis Completed: November 10, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-M70-1020	< 0.4	< 0.8	< 0.8

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
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Robert L. Metzger, Ph.D., C.H.P.

11/10/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

October 23, 2020 7:57 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	< 0.8	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	< 0.8	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

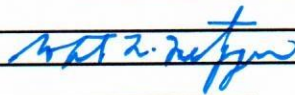
Specimen Number: RSE65328

Lab ID Number: AZ0462

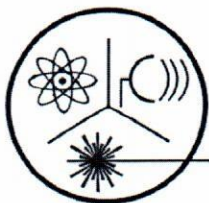
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: CH-CCR-M70-1020

Authorized Signature: 

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121

Website: www.radsafe.com

(480) 897-9459

FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service

400 N. 5th Street

Phoenix, AZ 85004

Sampling Date: October 22, 2020

Sample Received: October 26, 2020

Analysis Completed: November 10, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-W301-1020	< 0.4	< 0.8	< 0.8

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
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Robert L. Metzger, Ph.D., C.H.P.

11/10/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

October 22, 2020 9:05 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006		µg/L	
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	< 0.8	
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	< 0.8	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65329

Lab ID Number: AZ0462

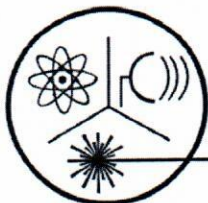
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: CH-CCR-W301-1020

Authorized Signature: 

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

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Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

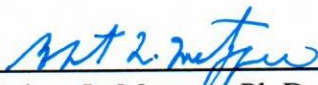
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: October 23, 2020
Sample Received: October 26, 2020
Analysis Completed: November 10, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-W302-1020	< 0.4	< 0.8	< 0.8

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
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Robert L. Metzger, Ph.D., C.H.P. 11/10/2020
Laboratory License Number AZ0462 Date

Arizona Department of Environmental Quality

Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report

Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

October 23, 2020 12:50 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person _____

Owner/Contact Fax Number _____

Owner/Contact Phone Number _____

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006		µg/L	
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	< 0.8	
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	< 0.8	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

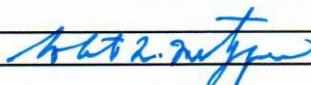
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Lab ID Number: AZ0462 _____

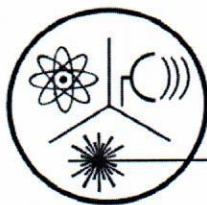
Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

Comments: CH-CCR-W302-1020 _____

Authorized Signature:  _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

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Website: www.radsafe.com

(480) 897-9459

FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service

400 N. 5th Street

Phoenix, AZ 85004

Sampling Date: October 22, 2020

Sample Received: October 26, 2020

Analysis Completed: November 10, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-W303-1020	< 0.4	0.8 ± 0.3	0.8 ± 0.3

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
------------------	------------	------------	------------


Robert L. Metzger, Ph.D., C.H.P.

11/10/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

October 22, 2020 10:16 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006		µg/L	
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	0.8 ± 0.3	
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	0.8 ± 0.3	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65331

Lab ID Number: AZ0462

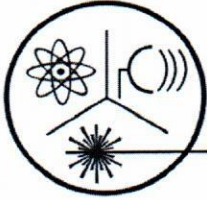
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: CH-CCR-W303-1020

Authorized Signature: 

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: October 23, 2020
Sample Received: October 26, 2020
Analysis Completed: November 10, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-W304-1020	< 0.4	< 0.8	< 0.8

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
------------------	------------	------------	------------


Robert L. Metzger, Ph.D., C.H.P.

11/10/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

October 23, 2020 2:05 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person _____

Owner/Contact Fax Number _____

Owner/Contact Phone Number _____

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	< 0.8	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	< 0.8	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65332 _____

Lab ID Number: AZ0462 _____

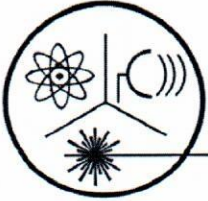
Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

Comments: CH-CCR-W304-1020 _____

Authorized Signature:  _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: October 23, 2020
Sample Received: October 26, 2020
Analysis Completed: November 10, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-FD03-1020	< 0.4	< 0.8	< 0.8

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
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Robert L. Metzger, Ph.D., C.H.P.

11/10/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

October 23, 2020 7:57 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person _____

Owner/Contact Fax Number _____

Owner/Contact Phone Number _____

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006		µg/L	
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	< 0.8	
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	< 0.8	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65333 _____

Lab ID Number: AZ0462 _____

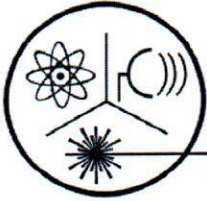
Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

Comments: CH-CCR-FD03-1020 _____

Authorized Signature:  _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

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Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

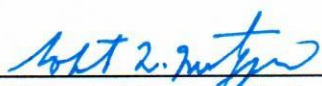
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: October 22, 2020
Sample Received: October 26, 2020
Analysis Completed: November 10, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-W305-1020	< 0.4	< 0.8	< 0.8

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
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Robert L. Metzger, Ph.D., C.H.P. 11/10/2020 Date
Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

October 22, 2020 12:47 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	< 0.8	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	< 0.8	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65334 _____

Lab ID Number: AZ0462 _____

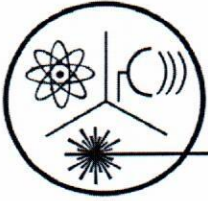
Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

Comments: CH-CCR-W305-1020 _____

Authorized Signature:  _____

Date Public Water System Notified: _____



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Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: October 22, 2020
Sample Received: October 26, 2020
Analysis Completed: November 10, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-W306-1020	< 0.4	< 0.8	< 0.8

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
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Robert L. Metzger, Ph.D., C.H.P.

11/10/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

October 22, 2020 1:55 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	< 0.8	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	< 0.8	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65335

Lab ID Number: AZ0462

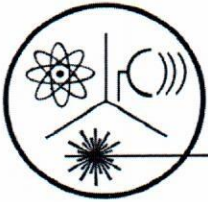
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: CH-CCR-W306-1020

Authorized Signature: 

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

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Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: October 23, 2020
Sample Received: October 26, 2020
Analysis Completed: November 10, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-W307-1020	< 0.4	< 0.8	< 0.8

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
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Robert L. Metzger, Ph.D., C.H.P.

11/10/2020

Date

Laboratory License Number AZ0462

Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report*****Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only*****

PWS ID#: AZ04

PWS Name: _____

October 23, 2020 3:20 (24 hour clock)

Sample Date

Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

☐ EPDS # _____**Compliance Sample Type:**

☐ Reduced Monitoring Date Q1 collected: _____

☐ Quarterly Date Q2 collected: _____

☐ Composite of four quarterly samples Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006		µg/L	
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	< 0.8	
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	< 0.8	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

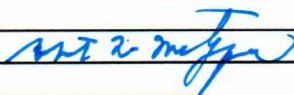
Specimen Number: RSE65336

Lab ID Number: AZ0462

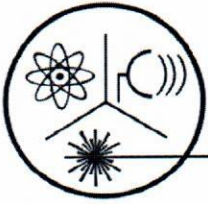
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: CH-CCR-W307-1020

Authorized Signature: 

Date Public Water System Notified: _____



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(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: October 24, 2020
Sample Received: October 26, 2020
Analysis Completed: November 10, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-W308-1020	< 0.4	< 0.8	< 0.8

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
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Robert L. Metzger, Ph.D., C.H.P.

11/10/2020

Date

Laboratory License Number AZ0462

Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report

Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

October 24, 2020 8:04 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	< 0.8	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	< 0.8	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65337 _____

Lab ID Number: AZ0462 _____

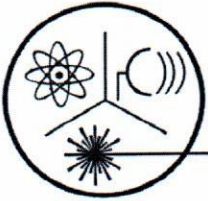
Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

Comments: CH-CCR-W308-1020 _____

Authorized Signature:  _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

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Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446


Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: October 24, 2020
Sample Received: October 26, 2020
Analysis Completed: November 10, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-W309-1020	< 0.4	< 0.8	< 0.8

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
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Robert L. Metzger, Ph.D., C.H.P. 11/10/2020 Date
Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

October 24, 2020 10:10 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person _____

Owner/Contact Fax Number _____

Owner/Contact Phone Number _____

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006		µg/L	
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	< 0.8	
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	< 0.8	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65338 _____

Lab ID Number: AZ0462 _____

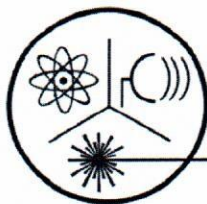
Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

Comments: CH-CCR-W309-1020 _____

Authorized Signature:  _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

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Website: www.radsafe.com

(480) 897-9459

FAX (480) 892-5446


Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: October 23, 2020
Sample Received: October 26, 2020
Analysis Completed: November 10, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-W314-1020	< 0.4	< 0.8	< 0.8

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
------------------	------------	------------	------------


Robert L. Metzger, Ph.D., C.H.P. 11/10/2020
Date
Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04

PWS Name: _____

October 23, 2020

11:17

(24 hour clock)

Sample Date

Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006		µg/L	
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	< 0.8	
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	< 0.8	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<


Specimen Number: RSE65339

Lab ID Number: AZ0462

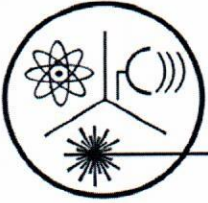
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: CH-CCR-W314-1020

Authorized Signature: 

Date Public Water System Notified: _____



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Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446


Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: October 21, 2020
Sample Received: October 26, 2020
Analysis Completed: November 10, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-W317-1020	< 0.4	< 0.8	< 0.8

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
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Robert L. Metzger, Ph.D., C.H.P. 11/10/2020
Laboratory License Number AZ0462 Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

October 21, 2020 11:27 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006		µg/L	
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	< 0.8	
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	< 0.8	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65340

Lab ID Number: AZ0462

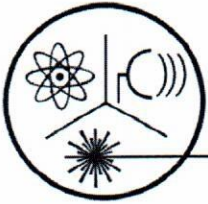
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: CH-CCR-W317-1020

Authorized Signature: 

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: October 23, 2020
Sample Received: October 26, 2020
Analysis Completed: November 10, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-FD04-1020	< 0.4	< 0.8	< 0.8

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
------------------	------------	------------	------------


Robert L. Metzger, Ph.D., C.H.P.

11/10/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

October 23, 2020 3:20 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person _____

Owner/Contact Fax Number _____

Owner/Contact Phone Number _____

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	< 0.8	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	< 0.8	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65341 _____

Lab ID Number: AZ0462 _____

Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

Comments: CH-CCR-FD04-1020 _____

Authorized Signature:  _____

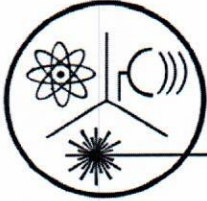
Date Public Water System Notified: _____

Client Information				Radiation Safety Engineering, Inc.										Analysis Request		
Name: Natalie Chrisman/602-250-3608 Jim Edwards/928-288-1241				3245 North Washington Street										Chandler, Arizona 85225		
Company: Arizona Public Service																
Address: 4801 Cholla Lake Rd, Joseph City, AZ 86032																
Phone: 928-587-0319																
Site: APS Cholla Power Plant (BAP)																
Sample ID & Location (DWR#)	Collection		Media (DW* WW* Other)	Alphacross	Becross	Uranium	Uranium	Ra-226	Ra-228	d Co Ra-226 + Ra-228 Combined	H-3	opysp	90 Sr-89/Sr	W	AirRadon in	
	Date	Time														
CH-CCR-M52-1020	10/22/20	3:14	GW					X	X	X						
CH-CCR-M53-1020	10/22/20	11:33	GW					X	X	X						
CH-CCR-M55-1020	10/24/20	9:02	GW					X	X	X						
CH-CCR-M69-1020	10/23/20	9:47	GW					X	X	X						
CH-CCR-M70-1020	10/23/20	7:57	GW					X	X	X						
CH-CCR-W301-1020	10/22/20	9:05	GW					X	X	X						
CH-CCR-W302-1020	10/23/20	12:50	GW					X	X	X						
CH-CCR-W303-1020	10/22/20	10:16	GW					X	X	X						
CH-CCR-W304-1020	10/23/20	2:05	GW					X	X	X						
CH-CCR-FD03-1020	10/23/20	7:57	GW					X	X	X						
Sample Receipt				Invoice to:										Instructions/Comments		
Total No. of Containers														Method HPGe		
Chain of Custody Seals																
Container Condition																
Lab No.																
Relinquished By: <i>Moni Vlodav</i>				Received By: <i>Pat Henry</i>										Company: RSE		
Relinquished By:				Received By:										Company:		
Relinquished By:				Received By:										Company:		

* DW = Drinking Water, WW = Waste Water, GW = Groundwater.

u/client/forms/cofc_fm

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Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: October 21, 2020
Sample Received: October 26, 2020
Analysis Completed: November 16, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-M56-1020	< 0.4	< 0.8	< 0.8

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
------------------	------------	------------	------------


Robert L. Metzger, Ph.D., C.H.P.

11/16/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

October 21, 2020 8:18 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person _____

Owner/Contact Fax Number _____

Owner/Contact Phone Number _____

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	< 0.8	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	< 0.4	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	< 0.8	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65354 _____

Lab ID Number: AZ0462 _____

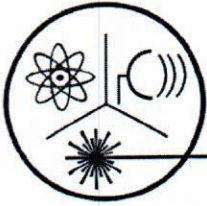
Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

Comments: CH-CCR-M56-1020 _____

Authorized Signature:  _____

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

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Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

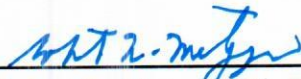
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: October 21, 2020
Sample Received: October 26, 2020
Analysis Completed: November 16, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-M57-1020	< 0.4	< 0.8	< 0.8

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
------------------	------------	------------	------------


Robert L. Metzger, Ph.D., C.H.P. 11/16/2020
Laboratory License Number AZ0462 Date

Arizona Department of Environmental Quality

Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report

Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04

PWS Name: _____

October 21, 2020

9:28

(24 hour clock)

Sample Date

Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006			µg/L
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	< 0.8	
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	< 0.4	
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	< 0.8	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

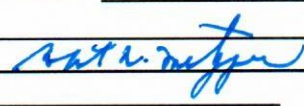
Specimen Number: RSE65355

Lab ID Number: AZ0462

Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: CH-CCR-M57-1020

Authorized Signature: 

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: October 21, 2020
Sample Received: October 26, 2020
Analysis Completed: November 16, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-M58-1020	0.5 ± 0.2	< 0.8	0.5 ± 0.2

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
------------------	------------	------------	------------


Robert L. Metzger, Ph.D., C.H.P.

11/16/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04

PWS Name: _____

October 21, 2020 10:39 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	0.5 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	0.5 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	< 0.8	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE65356

Lab ID Number: AZ0462

Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: CH-CCR-M58-1020

Authorized Signature: 

Date Public Water System Notified: _____



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Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

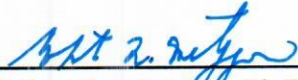
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: October 20, 2020
Sample Received: October 26, 2020
Analysis Completed: November 16, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-M62-1020	< 0.3	< 0.8	< 0.8

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
------------------	------------	------------	------------


Robert L. Metzger, Ph.D., C.H.P. 11/16/2020
Laboratory License Number AZ0462 Date

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04

PWS Name: _____

October 20, 2020 4:48 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person

Owner/Contact Fax Number

Owner/Contact Phone Number

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000			
600/00-02		3 pCi/L	Gross Alpha	4002			
7500 - Rn			Radon	4004			
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006		µg/L	
			Uranium 234	4007			
			Uranium 235	4008			
			Uranium 238	4009			
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	< 0.8	
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	< 0.3	
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	< 0.8	

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

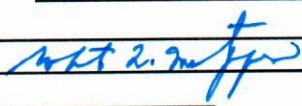
Specimen Number: RSE65357

Lab ID Number: AZ0462

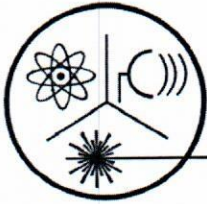
Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: CH-CCR-M62-1020

Authorized Signature: 

Date Public Water System Notified: _____



Radiation Safety Engineering, Inc.

3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121
Website: www.radsafe.com

(480) 897-9459
FAX (480) 892-5446

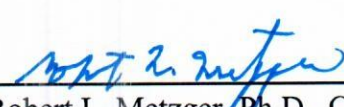
Radiochemical Activity in Water (pCi/L)

Arizona Public Service
400 N. 5th Street
Phoenix, AZ 85004

Sampling Date: October 21, 2020
Sample Received: October 26, 2020
Analysis Completed: November 16, 2020

Sample ID	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
CH-CCR-FD02-1020	0.4 ± 0.2	< 0.8	0.4 ± 0.2

Date of Analysis	10/30/2020	10/30/2020	10/30/2020
------------------	------------	------------	------------


Robert L. Metzger, Ph.D., C.H.P.

11/16/2020

Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality
Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report
Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____

PWS Name: _____

October 21, 2020 8:18 (24 hour clock)

Sample Date Sample Time

Owner/Contact Person _____

Owner/Contact Fax Number _____

Owner/Contact Phone Number _____

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring

Date Q1 collected: _____

☐ Quarterly

Date Q2 collected: _____

☐ Composite of four quarterly samples

Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result	Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	_____	_____	_____
600/00-02		3 pCi/L	Gross Alpha	4002	_____	_____	_____
7500 - Rn			Radon	4004	_____	_____	_____
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	_____	_____ µg/L	_____
			Uranium 234	4007	_____	_____	_____
			Uranium 235	4008	_____	_____	_____
			Uranium 238	4009	_____	_____	_____
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	10/30/2020	0.4 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 226	4020	10/30/2020	0.4 ± 0.2	_____
GammaRay HPGE		1 pCi/L	Radium 228	4030	10/30/2020	< 0.8	_____

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

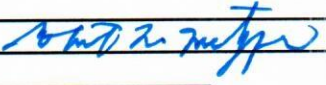
Specimen Number: RSE65358 _____

Lab ID Number: AZ0462 _____

Lab Name: Radiation Safety Engineering, Inc. _____

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459 _____

Comments: CH-CCR-FD02-1020 _____

Authorized Signature:  _____

Date Public Water System Notified: _____

[illegible]

APPENDIX C

2020 DATA VALIDATION REPORT



**2020 DATA VALIDATION REPORT
CCR Rule Compliance Groundwater Monitoring Data
Arizona Public Service Cholla
Navajo County, Arizona**

Submitted by:

**Wood Environment & Infrastructure Solutions, Inc.
Phoenix, Arizona**

January 31, 2021

Project No. 1420182040



TABLE OF CONTENTS

	Page
1.0 INTRODUCTION.....	1
2.0 DATA VALIDATION METHODOLOGY.....	1
3.0 EXPLANATION OF DATA QUALITY INDICATORS	2
3.1 Laboratory Control Sample Recoveries	2
3.2 Matrix Spike Recoveries.....	2
3.3 Blank Concentrations.....	2
3.4 Laboratory Duplicates.....	2
4.0 DEFINITIONS OF DATA VALIDATION QUALIFIERS	2
5.0 CHAIN OF CUSTODY AND SAMPLE RECEIPT CONDITION DOCUMENTATION.....	3
6.0 SPECIFIC DATA VALIDATION FINDINGS.....	3
6.1 Metals By EPA Methods 200.7, 200.8, and 245.1	3
6.1.1 Holding Times.....	3
6.1.2 Laboratory Blanks.....	3
6.1.3 Laboratory Control Sample Accuracy and Precision	3
6.1.4 Matrix Spikes/Matrix Spike Duplicates.....	3
6.1.5 Analytical Sensitivity	3
6.2 Anions by EPA Method 300.0.....	4
6.2.1 Holding Times.....	4
6.2.2 Laboratory Blanks.....	4
6.2.3 Laboratory Control Samples	4
6.2.4 Matrix Spikes/Matrix Spike Duplicates.....	4
6.2.5 Laboratory Duplicates.....	4
6.2.6 Analytical Sensitivity	4
6.3 Total Dissolved Solids by SM 2540C.....	4
6.3.1 Holding Times.....	4
6.3.2 Laboratory Blanks.....	4
6.3.3 Laboratory Control Sample Accuracy and Precision	5
6.3.4 Laboratory Duplicates.....	5
6.4 pH by SM 4500B	5
6.4.1 Holding Times.....	5
6.4.2 Laboratory Control Sample Accuracy.....	5
6.4.3 Laboratory Duplicates.....	5
6.5 Radium by EPA Methods 903.0 and 904.0	5
6.5.1 Holding Time.....	5
6.5.2 Laboratory Blanks.....	5
6.5.3 Laboratory Control Sample Accuracy.....	5
6.5.4 Carrier Accuracy	5
6.5.5 Analytical Sensitivity	5
7.0 FIELD DUPLICATES.....	6
8.0 SUMMARY AND CONCLUSIONS	6

9.0	REFERENCES.....	7
10.0	LIMITATIONS.....	8

TABLES

Table 1	Field Samples Submitted to Analytical Laboratories
Table 2	Field Duplicate Detections
Table 3	Qualifiers Added During Data Validation

APPENDICES

Appendix A	Data Assessment Checklists by Sample Delivery Group
------------	---

ACRONYMS

%	percent
APS	Arizona Public Service Company
BTV(s)	background threshold value(s)
CCR	coal combustion residuals
CLP	Contract Laboratory Program
COC	chain of custody
EPA	United States Environmental Protection Agency
GWPS(s)	Groundwater Protection Standard(s)
ID	identification
LCS	laboratory control sample
LCSD	laboratory control sample
MCL	maximum contaminant level
mg/L	milligrams per liter
MS	matrix spike
MSD	matrix spike duplicate
QC	quality control
RL	reporting limit
RPD	relative percent difference
SAP	sampling and analysis plan
SDG	sample delivery group
SM	Standard Method
TDS	total dissolved solids
Wood	Wood Environment & Infrastructure Solutions, Inc.

1.0 INTRODUCTION

Arizona Public Service (APS) collected groundwater Detection and Assessment Monitoring samples to support Coal Combustion Residuals (CCR) Rule Compliance during the 2020 calendar year (the reporting period) at the APS Cholla Power Plant, located near Joseph City in Navajo County, Arizona. This report presents the standard methods used to validate reporting period data and documents the results of the data validation process in summary tables and checklists generated as the samples were collected throughout the year.

2.0 DATA VALIDATION METHODOLOGY

Wood Environment & Infrastructure Solutions, Inc. (Wood) performed a United States Environmental Protection Agency (EPA) Stage 2A validation on samples collected by APS during the 2020 calendar year. This is equivalent to a Level I data evaluation as defined in the project sampling and analysis plan (SAP). The Stage 2A validation includes review of the quality control (QC) results in laboratory analytical reports and does not include review or validation of the raw analytical data. Data validation activities have been performed in general accordance with:

- EPA, 2004. SW 846 Test Methods for Evaluating Solid Wastes, Update IIIB.
- EPA, 2017. EPA Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Superfund Data Review, EPA 540-R-2017-001.
- Montgomery & Associates, 2015. Groundwater Sampling and Analysis Program, Cholla Power Plant, Joseph City, Arizona. November 30, 2015.

The CLP guidelines were written specifically for the CLP and have been modified for the purposes of data reviews conducted during the reporting period where they differ from method-specific QC requirements.

During each groundwater monitoring round conducted during the reporting period, the laboratory's certified analytical report and supporting documentation were reviewed to assess the following:

- Data package and electronic data deliverable completeness;
- Chain of custody (COC) compliance;
- Holding time compliance;
- Presence or absence of laboratory contamination as demonstrated by laboratory blanks;
- Accuracy and bias as demonstrated by recovery of laboratory control sample (LCS) and matrix spike (MS) samples;
- Analytical precision as relative percent difference (RPD) of analyte concentration between laboratory duplicates, LCS/LCS duplicates (LCSDs), or MSs/MS duplicates (MSDs);
- Insofar as possible, the degree of conformance to method requirements and good laboratory practices.

Appendix A presents data assessment checklists generated for each sample delivery group submitted to the analytical laboratory during the reporting period. The laboratory performing the analyses as well as the methods of analysis are presented in the individual checklists. Table 1 presents a comprehensive listing of

reporting period samples and Table 2 summarizes field duplicate detections at concentrations greater than analytical reporting limits.

In general, it is important to recognize that no analytical data are guaranteed to be correct, even if all QC audits are passed. Strict QC serves to increase confidence in data, but any reported value may potentially contain error.

3.0 EXPLANATION OF DATA QUALITY INDICATORS

Summary explanations of the specific data quality indicators reviewed during data validation are presented below.

3.1 Laboratory Control Sample Recoveries

LCSs are aliquots of analyte free matrices that are spiked with the analytes of interest for an analytical method, or a representative subset of those analytes. The spiked matrix is then processed through the same analytical procedures as the samples it accompanies. LCS recovery is an indication of a laboratory's ability to successfully perform an analytical method in an interference free matrix.

3.2 Matrix Spike Recoveries

MSs and MSDs are prepared by adding known amounts of the analytes of interest for an analytical method, or a representative subset of those analytes, to an aliquot of sample. The spiked sample is then processed through the same extraction, concentration, cleanup, and analytical procedures as the unspiked samples in an analytical batch.

MS recovery and precision are an indication of a laboratory's ability to successfully recover an analyte in the matrix of a specific sample or closely related sample matrices. It is important not to apply MS results for any specific sample to other samples without understanding how the sample matrices are related.

3.3 Blank Concentrations

Blank samples are aliquots of analyte free matrix that are used as negative controls to verify that the sample collection, storage, preparation, and analysis system does not produce false positive results.

Laboratory blanks are processed by the laboratory using exactly the same procedures as the field samples. Target analytes should not be found in laboratory blanks.

When target analytes are detected in blanks, analyte concentrations in associated samples less than five times the concentration detected in the blank will be U qualified as being not detected.

3.4 Laboratory Duplicates

Laboratory duplicate analysis verifies acceptable method precision by the laboratory at the time of preparation and analysis and/or sampling precision at the time of collection.

4.0 DEFINITIONS OF DATA VALIDATION QUALIFIERS

The following qualifiers may be added to the data during data validation:

- J** The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
- R** The sample result is rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
- U** The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
- UJ** The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

5.0 CHAIN OF CUSTODY AND SAMPLE RECEIPT CONDITION DOCUMENTATION

Unless otherwise noted in the Data Assessment Checklists included in Appendix A, the samples were received at the laboratories under proper COC, intact, properly preserved, and at temperatures less than the SAP-specified maximum of 6 degrees Celsius.

6.0 SPECIFIC DATA VALIDATION FINDINGS

Results for groundwater monitoring samples collected in 2020 may be considered usable with the limitations and exceptions summarized in Table 3. The following sections identify requirements used in data assessment.

6.1 Metals By EPA Methods 200.7, 200.8, and 245.1

6.1.1 Holding Times

Samples must be analyzed for metals within the SAP-specified holding time of 28 days for mercury and 180 days for additional metals.

6.1.2 Laboratory Blanks

Target analytes must not be detected in the laboratory blanks associated with the analysis of site samples.

6.1.3 Laboratory Control Sample Accuracy and Precision

LCS and LCSD recoveries must be within the laboratory-specified 85 to 115 percent (%) limits and RPDs between the LCS and LCSD results must be less than the laboratory-specified maximum of 20%.

6.1.4 Matrix Spikes/Matrix Spike Duplicates

Laboratories performed MS and MSD analysis on the project samples specified in the Data Assessment Checklists included in Appendix A. MS/MSD recoveries must be within laboratory-specified limits of 70 to 130% and RPDs between MS and MSD results must be less than the laboratory-specified maximum of 20%.

6.1.5 Analytical Sensitivity

RLs for antimony, arsenic, barium, beryllium, cadmium, chromium, mercury, selenium, and thallium must be sufficiently low to meet the National Primary Drinking Water Regulation Maximum Contamination Limits (MCLs). RLs for cobalt, lead, lithium, and molybdenum must be sufficiently low to meet alternative Groundwater Protection Standards (GWPSs).

Boron and calcium are not EPA-regulated analytes in groundwater and it is not possible to evaluate the RLs for these analytes against the National Primary Drinking Water Regulation MCLs.

6.2 Anions by EPA Method 300.0

6.2.1 Holding Times

Samples must be analyzed for anions within the SAP-specified holding time of 28 days.

6.2.2 Laboratory Blanks

Fluoride, chloride, and sulfate must not be detected in the laboratory blanks associated with the analysis of these samples.

6.2.3 Laboratory Control Samples

LCS and LCSD recoveries must be within the laboratory-specified limits of 90 to 110% and RPDs between the LCS and LCSD results must be less than the laboratory-specified maximum values.

6.2.4 Matrix Spikes/Matrix Spike Duplicates

Laboratories performed MS and MSD analysis on the project samples specified in the Data Assessment Checklists included in Appendix A. Recoveries must be within the laboratory-specified limits of 80 to 120%, and RPDs between MS and MSD results must be less than the laboratory-specified limit of 20%.

6.2.5 Laboratory Duplicates

Laboratories performed duplicate analysis on the project samples specified in the Data Assessment Checklists included in Appendix A. The RPDs between duplicate results must be less than the laboratory-specified 20% limit.

6.2.6 Analytical Sensitivity

Fluoride RLs must be sufficiently low to meet the 4 mg/L MCL. Chloride and sulfate are not EPA-regulated analytes in groundwater and it is not possible to evaluate the RLs for these analytes against the Primary Drinking Water Regulation MCLs.

There are applicable CCR Groundwater Monitoring Program Background Threshold Values (BTVs) for fluoride, chloride, and sulfate for the site. Analytical sensitivity must also be evaluated for these site-specific comparison criteria.

6.3 Total Dissolved Solids by SM 2540C

6.3.1 Holding Times

All samples must be analyzed for TDS within the SAP-specified holding time of 7 days.

6.3.2 Laboratory Blanks

TDS must not be detected in the laboratory blanks at concentrations above the reporting limit.

6.3.3 Laboratory Control Sample Accuracy and Precision

LCS and LCSD recoveries must be within the laboratory-specified limits of 90 to 110% and RPDs between the LCS and LCSD results must be less than the laboratory-specified maximum of 10%.

6.3.4 Laboratory Duplicates

Laboratories performed duplicate analysis for TDS on the project samples specified in the Data Assessment Checklists included in Appendix A. RPDs between primary sample and laboratory duplicate results must be less than the laboratory-specified 10% limit.

6.4 pH by SM 4500B

6.4.1 Holding Times

All samples must be analyzed for pH within 15 minutes of sample collection.

6.4.2 Laboratory Control Sample Accuracy

LCS recoveries must be within the laboratory-specified limits of 98.5 to 101.5%.

6.4.3 Laboratory Duplicates

Laboratories performed duplicate analysis for pH on the project samples specified in the Data Assessment Checklists included in Appendix A. RPDs between primary sample and laboratory duplicate results must be less than the laboratory-specified 5% limit.

6.5 Radium by EPA Methods 903.0 and 904.0

6.5.1 Holding Time

All samples must be analyzed for radium within the EPA-recommended holding time of 6 months.

6.5.2 Laboratory Blanks

Radium must not be detected in the laboratory blanks at concentrations above the reporting limit.

6.5.3 Laboratory Control Sample Accuracy

LCS and LCSD recoveries must be within laboratory-specified limits.

6.5.4 Carrier Accuracy

Carrier recoveries must be within the laboratory-specified 40 to 110% limits.

6.5.5 Analytical Sensitivity

Total radium RLs must be sufficiently low to meet the MCL of 5 picocuries per liter. Pending development of applicable CCR Groundwater Monitoring Program BTVs and/or GPSs for the site, analytical sensitivity must also be evaluated for these site-specific comparison criteria.

7.0 FIELD DUPLICATES

APS collected field duplicate samples of the specified field original samples as specified in Table 1. Target analyte detections are summarized in Table 2. Precision values must be less than the SAP-specified maximum of 20%, or the differences between the detected concentrations must be less than the RLs.

8.0 SUMMARY AND CONCLUSIONS

Data are usable with the addition of qualifiers as presented in Table 3.

9.0 REFERENCES

EPA, 2017. EPA Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Superfund Data Review, EPA 540-R-2017-001.

EPA, 2004. SW 846 Test Methods for Evaluating Solid Wastes, Update IIIB.

Montgomery & Associates, 2015. Groundwater Sampling and Analysis Program, Cholla Power Plant, Joseph City, Arizona. #CH_GW_SAP_021_11-30-15. November 30, 2015.

10.0 LIMITATIONS

This report was prepared exclusively for Arizona Public Service by Wood Environment & Infrastructure Solutions, Inc. The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in Wood services and based on: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This data validation report is intended to be used by Arizona Public Service for the Cholla Power Plant site only, subject to the terms and conditions of its contract with Wood. Any other use of, or reliance on, this report by any third party is at that party's sole risk.

TABLES

TABLE 1
FIELD SAMPLES SUBMITTED TO ANALYTICAL LABORATORIES
Coal Combustion Residuals Rule
2020 Compliance Monitoring Groundwater Data

Sampling Program	CCR Unit	Collection Date and Time	Field Sample Identification	Eurofins TestAmerica Phoenix Sample Identification	Radiation Safety Engineering Sample Identification	Notes
Assessment	SEDI	4/16/2020 15:55	CH-CCR-M56-0420	550-141149-1		
Assessment	SEDI	4/16/2020 14:35	CH-CCR-M57-0420	550-141149-2		
Assessment	SEDI	4/16/2020 15:15	CH-CCR-M58-0420	550-141149-3		
Assessment	SEDI	4/16/2020 13:33	CH-CCR-M62-0420	550-141149-4		
Assessment	SEDI	4/16/2020 15:55	CH-CCR-FD02-0420	550-141149-5		Field duplicate of CH-CCR-M56-0420
Assessment	BAP	4/19/2020 11:52	CH-CCR-M52-0420	550-141150-1/2		
Assessment	BAP	4/19/2020 10:04	CH-CCR-M53-0420	550-141150-3/4		
Assessment	BAP	4/17/2020 15:56	CH-CCR-M55-0420	550-141150-5/6		
Assessment	BAP	4/19/2020 13:12	CH-CCR-M69-0420	550-141150-7/8		
Assessment	BAP	4/19/2020 14:55	CH-CCR-M70-0420	550-141150-9/10		
Assessment	BAP	4/18/2020 13:37	CH-CCR-W301-0420	550-141150-11/12		
Assessment	BAP	4/17/2020 9:45	CH-CCR-W302-0420	550-141150-13/14		
Assessment	BAP	4/18/2020 14:49	CH-CCR-W303-0420	550-141150-15/16		
Assessment	BAP	4/17/2020 11:16	CH-CCR-W304-0420	550-141150-17/18		
Assessment	BAP	4/19/2020 10:04	CH-CCR-FD03-0420	550-141150-19/20		Field duplicate of CH-CCR-M53-0420
Assessment	BAP	4/18/2020 16:24	CH-CCR-W305-0420	550-141150-21/22		
Assessment	BAP	4/19/2020 8:12	CH-CCR-W306-0420	550-141150-23/24		
Assessment	BAP	4/17/2020 12:27	CH-CCR-W307-0420	550-141150-25/26		
Assessment	BAP (Tanner Wash)	4/17/2020 14:18	CH-CCR-W308-0420	550-141150-27/28		
Assessment	BAP	4/19/2020 16:09	CH-CCR-W314-0420	550-141150-29/30		
Assessment	BAP (Tanner Wash)	4/16/2020 16:48	CH-CCR-W317-0420	550-141150-31		
Assessment	BAP	4/19/2020 8:12	CH-CCR-FD04-0420	550-141150-32/33		Field duplicate of CH-CCR-W306-0420
Assessment	BAM	5/7/2020 14:38	CH-CCR-M54-0520	550-141924-1		
Assessment	BAM	5/7/2020 11:13	CH-CCR-M59-0520	550-141924-2		
Assessment	BAM	5/7/2020 13:36	CH-CCR-M60-0520	550-141924-3		
Assessment	BAM	5/7/2020 12:18	CH-CCR-M61-0520	550-141924-4		
Assessment	BAM	5/7/2020 12:18	CH-CCR-FD01-0520	550-141924-5		

TABLE 1
FIELD SAMPLES SUBMITTED TO ANALYTICAL LABORATORIES
Coal Combustion Residuals Rule
2020 Compliance Monitoring Groundwater Data

Sampling Program	CCR Unit	Collection Date and Time	Field Sample Identification	Eurofins TestAmerica Phoenix Sample Identification	Radiation Safety Engineering Sample Identification	Notes
Assessment	BAP	5/7/2020 9:35	CH-CCR-M44D-0520	550-141925-1		
Assessment	FAP	5/5/2020 10:01	CH-CCR-M46-0520	550-141925-2/3	64371	
Assessment	FAP	5/6/2020 13:46	CH-CCR-M50-0520	550-141925-4/5	64372	Logged in as CH-CCR-M50A-0520
Assessment	FAP	5/6/2020 15:15	CH-CCR-M51-0520	550-141925-6/7	64373	Logged in as CH-CCR-M51A-0520
Assessment	FAP	5/6/2020 8:13	CH-CCR-M64-0520	550-141925-8/9	64374	
Assessment	FAP	5/5/2020 8:16	CH-CCR-M65-0520	550-141925-10/11	64375	
Assessment	FAP	5/5/2020 12:46	CH-CCR-M66-0520	550-141925-12/13	64376	
Assessment	FAP	5/5/2020 11:22	CH-CCR-M67-0520	550-141925-14/15	64377	
Assessment	FAP	5/6/2020 11:14	CH-CCR-W123-0520	550-141925-16/17	64378	
Assessment	FAP	5/6/2020 12:45	CH-CCR-W125-0520	550-141925-18	--	
Assessment	FAP	5/5/2020 14:09	CH-CCR-W126-0520	550-141925-19/20	64379	
Assessment	FAP	5/6/2020 8:13	CH-CCR-FD05-0520	550-141925-21/22	64381	Field duplicate of CH-CCR-M64-0520
Assessment	BAP Seep	5/8/2020 8:02	CH-TANNERS-0520	550-141925-23	--	
Assessment	BAP (Tanner Wash)	5/4/2020 14:24	CH-CCR-W309-0520	550-141925-24/25	64382	
		5/28/2020 8:16	CH-APP-SWRP-052820		64468	
Assessment	BAM	10/21/2020 15:58	CH-CCR-M54-1020	550-151757-1		
Assessment	BAM	10/21/2020 15:08	CH-CCR-M59-1020	550-151757-2		
Assessment	BAM	10/21/2020 14:07	CH-CCR-M60-1020	550-151757-3		
Assessment	BAM	10/21/2020 13:20	CH-CCR-M61-1020	550-151757-4		
Assessment	BAM	10/21/2020 14:07	CH-CCR-FD01-1020	550-151757-5		Field duplicate of CH-CCR-M60-1020
Assessment	FAP	10/24/2020 13:53	CH-CCR-M44D-1020	550-151754-1	63542	
Assessment	FAP	10/25/2020 15:27	CH-CCR-M46-1020	550-151754-2/3	63543	
Assessment	FAP	10/25/2020 8:33	CH-CCR-M50-1020	550-151754-4/5	63544	
Assessment	FAP	10/25/2020 9:40	CH-CCR-M51-1020	550-151754-6/7	63545	
Assessment	FAP	10/24/2020 11:45	CH-CCR-M64-1020	550-151754-8/9	63546	
Assessment	FAP	10/25/2020 14:12	CH-CCR-M65-1020	550-151754-10/11	63547	Reanalyzed for molybdenum in report 550-151754-2

TABLE 1
FIELD SAMPLES SUBMITTED TO ANALYTICAL LABORATORIES
Coal Combustion Residuals Rule
2020 Compliance Monitoring Groundwater Data

Sampling Program	CCR Unit	Collection Date and Time	Field Sample Identification	Eurofins TestAmerica Phoenix Sample Identification	Radiation Safety Engineering Sample Identification	Notes
Assessment	FAP	10/25/2020 12:45	CH-CCR-M66-1020	550-151754-12/13	63548	
Assessment	FAP	10/25/2020 16:21	CH-CCR-M67-1020	550-151754-14/15	63549	
Assessment	FAP	10/26/2020 8:38	CH-CCR-W123-1020	550-151754-16/17	63550	
Assessment	FAP	10/24/2020 15:16	CH-CCR-W125-1020	550-151754-18	63551	
Assessment	FAP	10/25/2020 11:34	CH-CCR-W126-1020	550-151754-19/20	63552	
Assessment	FAP	10/25/2020 9:40	CH-CCR-FD05-1020	550-151754-21/22	63553	Field duplicate of CH-CCR-M51-1020
Assessment	SEDI	10/21/2020 8:18	CH-CCR-M56-1020	550-151756-1	65354	
Assessment	SEDI	10/21/2020 9:28	CH-CCR-M57-1020	550-151756-2	65355	Eurofins recorded the collection time as 9:25
Assessment	SEDI	10/21/2020 10:19	CH-CCR-M58-1020	550-151756-3	65356	RSE recorded the collection time as 10:39
Assessment	SEDI	10/20/2020 16:48	CH-CCR-M62-1020	550-151756-4	65357	
Assessment	SEDI	10/21/2020 8:18	CH-CCR-FD02-1020	550-151756-5	65358	Field duplicate of CH-CCR-M56-1020
Assessment	BAP	10/22/2020 15:14	CH-CCR-M52-1020	550-151758-1/2	65324	
Assessment	BAP	10/22/2020 11:33	CH-CCR-M53-1020	550-151758-3/4	65325	
Assessment	BAP	10/24/2020 9:02	CH-CCR-M55-1020	550-151758-5/6	65326	
Assessment	BAP	10/23/2020 9:47	CH-CCR-M69-1020	550-151758-7/8	65327	
Assessment	BAP	10/23/2020 7:57	CH-CCR-M70-1020	550-151758-9/10	65328	
Assessment	BAP	10/22/2020 9:05	CH-CCR-W301-1020	550-151758-11/12	65329	
Assessment	BAP	10/23/2020 12:50	CH-CCR-W302-1020	550-151758-13/14	65330	
Assessment	BAP	10/22/2020 10:16	CH-CCR-W303-1020	550-151758-15/16	65331	
Assessment	BAP	10/23/2020 14:05	CH-CCR-W304-1020	550-151758-17/18	65332	
Assessment	BAP	10/23/2020 7:57	CH-CCR-FD03-1020	550-151758-19/20	65333	Field duplicate of CH-CCR-M70-1020
Assessment	BAP	10/22/2020 12:47	CH-CCR-W305-1020	550-151758-21/22	65334	
Assessment	BAP	10/22/2020 13:55	CH-CCR-W306-1020	550-151758-23/24	65335	
Assessment	BAP	10/23/2020 15:20	CH-CCR-W307-1020	550-151758-25/26	65336	
Assessment	BAP	10/24/2020 8:04	CH-CCR-W308-1020	550-151758-27/28	65337	
Assessment	BAP	10/24/2020 10:10	CH-CCR-W309-1020	550-151758-29/30	65338	
Assessment	BAP	10/23/2020 11:17	CH-CCR-W314-1020	550-151758-31/32	65339	

TABLE 1
FIELD SAMPLES SUBMITTED TO ANALYTICAL LABORATORIES
Coal Combustion Residuals Rule
2020 Compliance Monitoring Groundwater Data

Sampling Program	CCR Unit	Collection Date and Time	Field Sample Identification	Eurofins TestAmerica Phoenix Sample Identification	Radiation Safety Engineering Sample Identification	Notes
Assessment	BAP	10/21/2020 11:27	CH-CCR-W317-1020	550-151758-33	65340	
Assessment	BAP	10/23/2020 15:20	CH-CCR-FD04-1020	550-151758-34/35	65341	Field duplicate of CH-CCR-W307-1020

TABLE 2
FIELD DUPLICATE DETECTIONS
Coal Combustion Residuals Rule
2020 Compliance Monitoring Groundwater Data

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes
Samples CH-CCR-M61-0520 and CH-CCR-FD01-0520					
Chloride	200 mg/L	1,300	1,200	8.0%	
Fluoride	0.80 mg/L	1.6	1.7	6.1%	
Sulfate	4.0 mg/L	350	350	0.0%	
Boron	0.050 mg/L	0.51	0.51	0.0%	
Calcium	2.0 mg/L	93	93	0.0%	
TDS	100 mg/L	3,000	2,900	3.4%	
pH	1.7 SU	7.7	7.6	1.3%	
Samples CH-CCR-M56-0420 and CH-CCR-FD02-0420					
Chloride	400 mg/L	1,800	1,800	0.0%	
Sulfate	400 mg/L	1,000	1,000	0.0%	
Boron	0.25 mg/L	0.38	0.37	2.7%	
Calcium	2.0 mg/L	300	290	3.4%	
Barium	0.0050 mg/L	0.052	0.052	0.0%	
Chromium	0.010 mg/L	0.034	0.028	19%	
Molybdenum	0.0050 mg/L	0.012	0.012	0.0%	
TDS	100 mg/L	4,600	4,500	2.2%	
pH	1.7 SU	7.5	7.4	1.3%	
Samples CH-CCR-M53-0420 and CH-CCR-FD03-0420					
Chloride	400 mg/L	2,400	2,300	4.3%	
Fluoride	0.80 mg/L	2.1	2.1	0.0%	
Sulfate	400 mg/L	3,100	3,000	3.3%	
Beryllium	0.0010 mg/L	0.00055 J	0.00050 J	9.5%	
Boron	0.25 mg/L	3.7	3.7	0.0%	
Calcium	2.0 mg/L	610	620	1.6%	
Lithium	1.0 mg/L	1.0 U	0.27 J	NC	± RL
Magnesium	2.0 mg/L	210	210	0.0%	
Manganese	0.050 mg/L	5.2	5	3.9%	
Potassium	1.5 mg/L	15	12	22%	J-FD
Sodium	5.0 mg/L	1,600	1,600	0.0%	
Barium	0.00050 mg/L	0.0087	0.0088	1.1%	
Cadmium	0.00010 mg/L	0.0012	0.0012	0.0%	
Cobalt	0.0050 mg/L	0.014	0.014	0.0%	
Molybdenum	0.00250 mg/L	0.038	0.039	2.6%	
Alkalinity as CaCO ₃	6.0 mg/L	96	96	0.0%	
Bicarbonate Alkalinity as CaCO ₃	6.0 mg/L	96	96	0.0%	
Total Dissolved Solids	100 mg/L	8,200	7,800	5.0%	
pH	1.7 SU	7.5	7.4	1.3%	
TOC	0.50 mg/L	1.2	1.2	0.0%	
TOC - Duplicates	0.50 mg/L	1.1	1.2	8.7%	
TOC - Quad	0.50 mg/L	1.2	1.2	0.0%	
Dissolved Manganese	0.010 mg/L	4.8	5.0	4.1%	
Dissolved Cobalt	0.0050 mg/L	0.016	0.014	13%	
DOC	0.50 mg/L	1.2	1.3	8.0%	
DOC - Duplicate	0.50 mg/L	1.2	1.3	8.0%	
DOC - Quad	0.50 mg/L	1.2	1.3	8.0%	

TABLE 2
FIELD DUPLICATE DETECTIONS
Coal Combustion Residuals Rule
2020 Compliance Monitoring Groundwater Data

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes
Samples CH-CCR-W306-0420 and CH-CCR-FD04-0420					
Chloride	400 mg/L	2,000	1,800	11%	
Fluoride	0.80 mg/L	1.1	1.5	31%	± RL
Sulfate	400 mg/L	13,000	12,000	8.0%	
Beryllium	0.0010 mg/L	0.0017	0.0017	0.0%	
Boron	0.15 mg/L	1.2	1.1	8.7%	
Calcium	2.0 mg/L	400	400	0.0%	
Lithium	0.60 mg/L	1.3	1.2	8.0%	
Magnesium	2.0 mg/L	230	230	0.0%	
Potassium	1.5 mg/L	3.6	9.7	92%	J-FD
Sodium	5.0 mg/L	5,700	5,500	3.6%	
Arsenic	0.0038 mg/L	0.0050	0.0048	4.1%	
Barium	0.0050 mg/L	0.012	0.011	8.7%	
Molybdenum	0.0025 mg/L	0.042	0.039	7.4%	
Alkalinity as CaCO ₃	6.0 mg/L	130	130	0.0%	
Bicarbonate Alkalinity as CaCO ₃	6.0 mg/L	130	130	0.0%	
TDS	200 mg/L	19,000	19,000	0.0%	
pH	1.7 SU	7.8	7.9	1.3%	
TOC	0.50 mg/L	2.4	2.5	4.1%	
TOC - Duplicates	0.50 mg/L	2.4	2.5	4.1%	
TOC - Quad	0.50 mg/L	2.4	2.5	4.1%	
Dissolved Arsenic	0.0050 mg/L	0.0055	0.0051	7.5%	
DOC	0.50 mg/L	2.6	2.7	3.8%	
DOC - Duplicate	0.50 mg/L	2.6	2.7	3.8%	
DOC - Quad	0.50 mg/L	2.6	2.7	3.8%	
Samples CH-CCR-M64-0520 and CH-CCR-FD05-0520					
Chloride	400 mg/L	3,900	4,100	5.0%	
Sulfate	400 mg/L	3,900	4,100	5.0%	
Boron	0.050 mg/L	1.2	1.3	8.0%	
Calcium	2.0 mg/L	520	510	1.9%	
Iron	0.10 mg/L	5.5	5.5	0.0%	
Lithium	0.20 mg/L	0.47	0.47	0.0%	
Magnesium	2.0 mg/L	230	220	4.4%	
Manganese	0.010 mg/L	2.2	2.3	4.4%	
Potassium	0.50 mg/L	20	19	5.1%	
Sodium	5.0 mg/L	3,400	3,800	11%	
Arsenic	0.00050 mg/L	0.00086	0.00050 U	NC	± RL
Barium	0.00075 mg/L	0.013	0.012	8.0%	
Molybdenum	0.00050 mg/L	0.0042	0.0043	2.4%	
Alkalinity as CaCO ₃	6.0 mg/L	490	470	4.2%	
Bicarbonate Alkalinity	6.0 mg/L	490	470	4.2%	
Total Dissolved Solids	200 mg/L	12,000	12,000	0.0%	
pH	1.7 SU	7.3	7.6	4.0%	
Ammonia	0.50 mg/L	0.73	0.75	2.7%	
TOC	0.50 mg/L	5.1	5.5	7.5%	
TOC - Duplicates	0.50 mg/L	5.1	5.5	7.5%	
TOC - Quad	0.50 mg/L	5.1	5.5	7.5%	
Dissolved Iron	0.10 mg/L	5.0	4.8	4.1%	
Dissolved Manganese	0.010 mg/L	1.9	1.9	0.0%	
Dissolved Arsenic	0.00050 mg/L	0.00050	0.00093	60%	± RL
DOC	1.0 mg/L	5.0	6	10%	
DOC - Duplicate	1.0 mg/L	5.0	5.4	7.7%	

TABLE 2
FIELD DUPLICATE DETECTIONS
Coal Combustion Residuals Rule
2020 Compliance Monitoring Groundwater Data

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes
Samples CH-CCR-M60-1020 and CH-CCR-FD01-1020					
Chloride	300 mg/L	1,400	1,200	15%	
Fluoride	0.60 mg/L	1.4	1.5	6.9%	
Sulfate	150 mg/L	340	340	0.0%	
Boron	0.050 mg/L	0.48	0.48	0.0%	
Calcium	2.0 mg/L	82	83	1.2%	
TDS	100 mg/L	2,900	2,900	0.0%	
pH	1.7 SU	7.5	7.4	1.3%	
Samples CH-CCR-M56-1020 and CH-CCR-FD02-1020					
Chloride	400 mg/L	1,900	1,800	5.4%	
Sulfate	400 mg/L	940	910	3.2%	
Lithium	0.020 mg/L	0.097	0.097	0.0%	
Boron	0.050 mg/L	0.37	0.31	18%	
Calcium	2.0 mg/L	300	300	0.0%	
Arsenic	0.0020 mg/L	0.0044	0.0021	71%	J-FD
Barium	0.0010 mg/L	0.050	0.049	2.0%	
Chromium	0.0020 mg/L	0.0041	0.0026	45%	± RL
Molybdenum	0.0010 mg/L	0.0080	0.0076	5.1%	
Total Dissolved Solids	100 mg/L	4,300	4,400	2.3%	
pH	1.7 SU	7.5	7.6	1.3%	
Radium 226	0.4 pCi/L	0.4 U	0.4 ± 0.2	NC	± RL
Total Radium	0.8 pCi/L	0.8 U	0.4 ± 0.2	NC	± RL
Samples CH-CCR-M70-1020 and CH-CCR-FD03-1020					
Chloride	400 mg/L	2,200	2,200	0.0%	
Fluoride	0.80 mg/L	1.1	1.1	0.0%	
Nitrate Nitrite	0.25 mg/L	0.40	0.25 U	NC	± RL
Sulfate	400 mg/L	2,600	2,600	0.0%	
Lithium	0.020 mg/L	0.20	0.19	5.1%	
Boron	0.050 mg/L	2.1	2.1	0.0%	
Calcium	2.0 mg/L	660	680	3.0%	
Iron	0.10 mg/L	0.093 J	0.085 J	9.0%	
Manganese	0.010 mg/L	1.8	1.8	0.0%	
Arsenic	0.0010 mg/L	0.0013	0.0020	42%	± RL
Barium	0.0010 mg/L	0.013	0.013	0.0%	
Cadmium	0.00020 mg/L	0.00038	0.00042	10%	
Chromium	0.0020 mg/L	0.0020 U	0.0014 J	NC	± RL
Cobalt	0.0010 mg/L	0.022	0.022	0.0%	
Lead	0.0010 mg/L	0.0025	0.0022	13%	
Molybdenum	0.0010 mg/L	0.031	0.030	3.3%	
Selenium	0.0015 mg/L	0.0028	0.0027	3.6%	
Thallium	0.00020 mg/L	0.000032 J	0.00020 U	NC	± RL
Total Dissolved Solids	100 mg/L	6,900	6,900	0.0%	
pH	1.7 SU	7.4	7.4	0.0%	
TOC	0.50 mg/L	1.1	1.0	9.5%	
Dissolved Iron	0.10 mg/L	0.090 J	0.072 J	22%	± RL
Dissolved Manganese	0.010 mg/L	1.7	1.6	6.1%	
Dissolved Arsenic	0.0020 mg/L	0.0032	0.0013 J	84%	± RL
Dissolved Cobalt	0.0020 mg/L	0.023	0.021	9.1%	
DOC	0.50 mg/L	1.2	1.1	8.7%	

TABLE 2
FIELD DUPLICATE DETECTIONS
Coal Combustion Residuals Rule
2020 Compliance Monitoring Groundwater Data

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes
Samples CH-CCR-W307-1020 and CH-CCR-FD04-1020					
Chloride	400 mg/L	3,100	3,100	0.0%	
Fluoride	0.80 mg/L	0.52 J	0.49 J	5.9%	
Sulfate	400 mg/L	2,800	2,800	0.0%	
Lithium	0.020 mg/L	0.26	0.26	0.0%	
Boron	0.050 mg/L	2.5	2.5	0.0%	
Calcium	2.0 mg/L	810	790	2.5%	
Iron	0.10 mg/L	0.17	0.18	5.7%	
Manganese	0.010 mg/L	0.042	0.042	0.0%	
Arsenic	0.0010 mg/L	0.0014	0.0014	0.0%	
Barium	0.0010 mg/L	0.013	0.013	0.0%	
Cadmium	0.00020 mg/L	0.00064	0.00056	13%	
Chromium	0.0020 mg/L	0.013	0.013	0.0%	
Cobalt	0.0010 mg/L	0.069	0.070	1.4%	
Lead	0.0010 mg/L	0.0011	0.0011	0.0%	
Molybdenum	0.0010 mg/L	0.018	0.017	5.7%	
Selenium	0.0010 mg/L	0.0024	0.0024	0.0%	
Total Dissolved Solids	100 mg/L	8,100	8,000	1.2%	
pH	1.7 SU	7.2	7.3	1.4%	
TOC	0.50 mg/L	1.1	1.1	0.0%	
Dissolved Iron	0.10 mg/L	0.16	0.17	6.1%	
Dissolved Manganese	0.010 mg/L	0.041	0.041	0.0%	
Dissolved Arsenic	0.0020 mg/L	0.0022	0.0020	9.5%	
Dissolved Cobalt	0.0010 mg/L	0.069	0.074	7.0%	
DOC	0.50 mg/L	1.3	1.2	8.0%	
Samples CH-CCR-M51-1020 and CH-CCR-FD05-1020					
Chloride	400 mg/L	5,600	4,900	13%	
Fluoride	0.80 mg/L	5.9	6.0	1.7%	
Sulfate	400 mg/L	3,100	2,800	10%	
Lithium	0.020 mg/L	0.47	0.47	0.0%	
Boron	0.050 mg/L	30	30	0.0%	
Calcium	2.0 mg/L	840	850	1.2%	
Iron	0.10 mg/L	0.041 J	0.022 J	60%	± RL
Manganese	0.010 mg/L	0.92	0.95	3.2%	
Antimony	0.00020 mg/L	0.00010 J	0.00011 J	10%	
Arsenic	0.0020 mg/L	0.028	0.027	3.6%	
Barium	0.0010 mg/L	0.0085	0.0086	1.2%	
Cadmium	0.00020 mg/L	0.00017 J	0.00013 J	27%	± RL
Chromium	0.0020 mg/L	0.0060	0.0073	20%	
Cobalt	0.0010 mg/L	0.0015	0.0012	22%	± RL
Lead	0.0010 mg/L	0.00053 J	0.0010 U	NC	± RL
Molybdenum	0.0010 mg/L	0.12	0.12	0.0%	
Thallium	0.00020 mg/L	0.00019 J	0.00019 J	0.0%	
Total Dissolved Solids	200 mg/L	11,000	11,000	0.0%	
pH	1.7 SU	7.3	7.3	0.0%	
Ammonia	0.50 mg/L	0.50 U	0.36 J	NC	± RL
TOC	0.50 mg/L	1.5	1.5	0.0%	
Dissolved Iron	0.10 mg/L	0.10 U	0.024 J	NC	± RL
Dissolved Manganese	0.010 mg/L	0.97	1.0	3.0%	
Dissolved Arsenic	0.0010 mg/L	0.027	0.025	7.7%	
Dissolved Cobalt	0.0010 mg/L	0.0012	0.0011	8.7%	
DOC	0.50 mg/L	1.6	1.6	0.0%	
Radium 226	0.4 pCi/L	0.4 U	0.4 ± 0.2	NC	± RL
Total Radium	0.4 pCi/L	0.4 U	0.4 ± 0.2	NC	± RL

TABLE 3
QUALIFIERS ADDED DURING DATA VALIDATION
Coal Combustion Residuals Rule
2020 Compliance Monitoring Groundwater Data

Sample Identification	Sample Delivery Group	Analyte	Result	Qualifier and Reason Code
CH-CCR-FD02-0420	J141149-1	pH	7.4 SU	J HT
CH-CCR-M56-0420	J141149-1	pH	7.5 SU	J HT
CH-CCR-M57-0420	J141149-1	pH	7.2 SU	J HT
CH-CCR-M58-0420	J141149-1	pH	7.5 SU	J HT
CH-CCR-M62-0420	J141149-1	pH	7.4 SU	J HT
CH-CCR-FD03-0420	J141150-1	Beryllium	0.00050 mg/L	J DL
CH-CCR-FD03-0420	J141150-1	Lithium	0.27 mg/L	J DL
CH-CCR-FD03-0420	J141150-1	pH	7.4 SU	J HT
CH-CCR-FD03-0420	J141150-1	Potassium	12 mg/L	J FD
CH-CCR-FD04-0420	J141150-1	pH	7.9 SU	J HT
CH-CCR-FD04-0420	J141150-1	Potassium	9.7 mg/L	J FD
CH-CCR-M52-0420	J141150-1	Alkalinity as CaCO ₃	210 mg/L	J HD
CH-CCR-M52-0420	J141150-1	Beryllium	0.00056 mg/L	J DL
CH-CCR-M52-0420	J141150-1	Bicarbonate Alkalinity as CaCO ₃	210 mg/L	J HD
CH-CCR-M52-0420	J141150-1	Dissolved Organic Carbon	1.4 mg/L	J LM
CH-CCR-M52-0420	J141150-1	Dissolved Organic Carbon - Duplicate	1.4 mg/L	J LM
CH-CCR-M52-0420	J141150-1	Dissolved Organic Carbon - Quad	1.4 mg/L	J LM
CH-CCR-M52-0420	J141150-1	pH	7.2 SU	J HT
CH-CCR-M53-0420	J141150-1	Beryllium	0.00055 mg/L	J DL
CH-CCR-M53-0420	J141150-1	pH	7.5 SU	J HT
CH-CCR-M53-0420	J141150-1	Potassium	15 mg/L	J FD
CH-CCR-M55-0420	J141150-1	Beryllium	0.00059 mg/L	J DL
CH-CCR-M55-0420	J141150-1	Iron	0.040 mg/L	J DL
CH-CCR-M55-0420	J141150-1	pH	7.5 SU	J HT
CH-CCR-M69-0420	J141150-1	Beryllium	0.00052 mg/L	J DL
CH-CCR-M69-0420	J141150-1	pH	7.5 SU	J HT
CH-CCR-M70-0420	J141150-1	Iron	0.072 mg/L	J DL
CH-CCR-M70-0420	J141150-1	pH	7.5 SU	J HT
CH-CCR-W301-0420	J141150-1	Beryllium	0.00063 mg/L	J DL
CH-CCR-W301-0420	J141150-1	Lithium	0.41 mg/L	J DL
CH-CCR-W301-0420	J141150-1	pH	7.4 SU	J HT
CH-CCR-W302-0420	J141150-1	Dissolved Organic Carbon	1.2 mg/L	J TD
CH-CCR-W302-0420	J141150-1	Dissolved Organic Carbon - Duplicate	1.2 mg/L	J TD
CH-CCR-W302-0420	J141150-1	Dissolved Organic Carbon - Quad	1.2 mg/L	J TD
CH-CCR-W302-0420	J141150-1	Manganese	0.022 mg/L	J DL
CH-CCR-W302-0420	J141150-1	pH	7.4 SU	J HT
CH-CCR-W302-0420	J141150-1	Total Organic Carbon	0.64 mg/L	J TD
CH-CCR-W302-0420	J141150-1	Total Organic Carbon - Duplicates	0.62 mg/L	J TD
CH-CCR-W302-0420	J141150-1	Total Organic Carbon - Quad	0.64 mg/L	J TD
CH-CCR-W303-0420	J141150-1	Beryllium	0.00059 mg/L	J DL
CH-CCR-W303-0420	J141150-1	Manganese	0.036 mg/L	J DL
CH-CCR-W303-0420	J141150-1	pH	7.5 SU	J HT
CH-CCR-W304-0420	J141150-1	Lithium	0.46 mg/L	J DL
CH-CCR-W304-0420	J141150-1	pH	7.4 SU	J HT
CH-CCR-W305-0420	J141150-1	Lithium	0.30 mg/L	J DL
CH-CCR-W305-0420	J141150-1	pH	7.4 SU	J HT
CH-CCR-W305-0420	J141150-1	Potassium	1.4 mg/L	J DL
CH-CCR-W306-0420	J141150-1	pH	7.8 SU	J HT

TABLE 3
QUALIFIERS ADDED DURING DATA VALIDATION
Coal Combustion Residuals Rule
2020 Compliance Monitoring Groundwater Data

Sample Identification	Sample Delivery Group	Analyte	Result	Qualifier and Reason Code
CH-CCR-W306-0420	J141150-1	Potassium	3.6 mg/L	J FD
CH-CCR-W307-0420	J141150-1	Lithium	0.29 mg/L	J DL
CH-CCR-W307-0420	J141150-1	Manganese	0.030 mg/L	J DL
CH-CCR-W307-0420	J141150-1	pH	7.3 SU	J HT
CH-CCR-W308-0420	J141150-1	Iron	0.031 mg/L	J DL
CH-CCR-W308-0420	J141150-1	Lithium	0.46 mg/L	J DL
CH-CCR-W308-0420	J141150-1	pH	7.3 SU	J HT
CH-CCR-W314-0420	J141150-1	Lithium	0.44 mg/L	J DL
CH-CCR-W314-0420	J141150-1	pH	7.5 SU	J HT
CH-CCR-W317-0420	J141150-1	Lithium	0.042 mg/L	J DL
CH-CCR-W317-0420	J141150-1	pH	7.5 SU	J HT
CH-CCR-FD01-0520	J141924-1	pH	7.6 SU	J HT
CH-CCR-M54-0520	J141924-1	pH	7.6 SU	J HT
CH-CCR-M59-0520	J141924-1	pH	7.7 SU	J HT
CH-CCR-M60-0520	J141924-1	pH	7.7 SU	J HT
CH-CCR-M61-0520	J141924-1	pH	7.7 SU	J HT
CH-CCR-FD05-0520	J141925-1	pH	7.6 SU	J HT
CH-CCR-M46-0520	J141925-1	Chloride	7,100 mg/L	J HM
CH-CCR-M46-0520	J141925-1	Dissolved Manganese	3.6 mg/L	J LM
CH-CCR-M46-0520	J141925-1	Fluoride	0.80 mg/L	UJ LM
CH-CCR-M46-0520	J141925-1	Nitrate/Nitrite	0.50 mg/L	UJ LM
CH-CCR-M46-0520	J141925-1	pH	7.4 SU	J HT
CH-CCR-M46-0520	J141925-1	Sulfate	7,800 mg/L	J HM, HD
CH-CCR-M46-0520	J141925-1	Total Organic Carbon	3.2 mg/L	J HM, HD
CH-CCR-M50-0520	J141925-1	Dissolved Organic Carbon	2.9 mg/L	J HM
CH-CCR-M50-0520	J141925-1	pH	7.5 SU	J HT
CH-CCR-M51-0520	J141925-1	pH	7.2 SU	J HT
CH-CCR-M64-0520	J141925-1	pH	7.3 SU	J HT
CH-CCR-M65-0520	J141925-1	pH	7.4 SU	J HT
CH-CCR-M66-0520	J141925-1	pH	7.3 SU	J HT
CH-CCR-M67-0520	J141925-1	pH	7.1 SU	J HT
CH-CCR-W123-0520	J141925-1	pH	7.5 SU	J HT
CH-CCR-W126-0520	J141925-1	pH	7.5 SU	J HT
CH-CCR-W309-0520	J141925-1	pH	7.5 SU	J HT
CH-TANNERS-0520	J141925-1	pH	7.4 SU	J HT
CH-CCR-FD05-1020	J151754-1	Antimony	0.0020 mg/L	U MB
CH-CCR-FD05-1020	J151754-1	Chloride	4900 mg/L	J HM
CH-CCR-FD05-1020	J151754-1	Dissolved Organic Carbon	1.6 mg/L	J LM
CH-CCR-FD05-1020	J151754-1	Dissolved Organic Carbon - Duplicate	1.6 mg/L	J LM
CH-CCR-FD05-1020	J151754-1	Dissolved Organic Carbon - Quad	1.6 mg/L	J LM
CH-CCR-FD05-1020	J151754-1	pH	7.3 SU	J HT
CH-CCR-M44D-1020	J151754-1	Beryllium	0.0010 mg/L	U MB
CH-CCR-M44D-1020	J151754-1	pH	7.1 SU	J HT
CH-CCR-M44D-1020	J151754-1	Selenium	0.0020 mg/L	U MB
CH-CCR-M46-1020	J151754-1	Antimony	0.0020 mg/L	U MB
CH-CCR-M46-1020	J151754-1	Dissolved Organic Carbon	3.1 mg/L	J LM
CH-CCR-M46-1020	J151754-1	Dissolved Organic Carbon - Duplicate	3.1 mg/L	J LM

TABLE 3
QUALIFIERS ADDED DURING DATA VALIDATION
Coal Combustion Residuals Rule
2020 Compliance Monitoring Groundwater Data

Sample Identification	Sample Delivery Group	Analyte	Result	Qualifier and Reason Code
CH-CCR-M46-1020	J151754-1	Dissolved Organic Carbon - Quad	3.1 mg/L	J LM
CH-CCR-M46-1020	J151754-1	pH	7.2 SU	J HT
CH-CCR-M46-1020	J151754-1	Thallium	0.00020 mg/L	U MB
CH-CCR-M50-1020	J151754-1	Antimony	0.0020 mg/L	U MB
CH-CCR-M50-1020	J151754-1	pH	7.3 SU	J HT
CH-CCR-M50-1020	J151754-1	Thallium	0.00020 mg/L	U MB
CH-CCR-M51-1020	J151754-1	Antimony	0.0020 mg/L	U MB
CH-CCR-M51-1020	J151754-1	Chloride	5600 mg/L	J HM
CH-CCR-M51-1020	J151754-1	Dissolved Organic Carbon	1.6 mg/L	J LM
CH-CCR-M51-1020	J151754-1	Dissolved Organic Carbon - Duplicate	1.6 mg/L	J LM
CH-CCR-M51-1020	J151754-1	Dissolved Organic Carbon - Quad	1.6 mg/L	J LM
CH-CCR-M51-1020	J151754-1	pH	7.3 SU	J HT
CH-CCR-M64-1020	J151754-1	Antimony	0.0020 mg/L	U MB
CH-CCR-M64-1020	J151754-1	Dissolved Arsenic	0.0020 mg/L	U MB
CH-CCR-M64-1020	J151754-1	pH	7.3 SU	J HT
CH-CCR-M65-1020	J151754-1	Antimony	0.0020 mg/L	U MB
CH-CCR-M65-1020	J151754-1	pH	7.0 SU	J HT
CH-CCR-M65-1020	J151754-1	Thallium	0.00020 mg/L	U MB
CH-CCR-M66-1020	J151754-1	Antimony	0.0020 mg/L	U MB
CH-CCR-M66-1020	J151754-1	Arsenic	0.0019 mg/L	J TD
CH-CCR-M66-1020	J151754-1	Dissolved Arsenic	0.0051 mg/L	J TD
CH-CCR-M66-1020	J151754-1	pH	7.1 SU	J HT
CH-CCR-M67-1020	J151754-1	Antimony	0.0020 mg/L	U MB
CH-CCR-M67-1020	J151754-1	pH	7.5 SU	J HT
CH-CCR-M67-1020	J151754-1	Selenium	0.0010 mg/L	U MB
CH-CCR-M67-1020	J151754-1	Thallium	0.00020 mg/L	U MB
CH-CCR-W123-1020	J151754-1	pH	6.8 SU	J HT
CH-CCR-W125-1020	J151754-1	Beryllium	0.0010 mg/L	U MB
CH-CCR-W125-1020	J151754-1	pH	7.5 SU	J HT
CH-CCR-W125-1020	J151754-1	Selenium	0.0010 mg/L	U MB
CH-CCR-W126-1020	J151754-1	Antimony	0.0040 mg/L	U MB
CH-CCR-W126-1020	J151754-1	Barium	0.018 mg/L	J HM
CH-CCR-W126-1020	J151754-1	Cobalt	0.0083 mg/L	J HM
CH-CCR-W126-1020	J151754-1	pH	7.5 SU	J HT
CH-CCR-FD02-1020	J151756-1	Arsenic	0.0021 mg/L	J FD
CH-CCR-FD02-1020	J151756-1	pH	7.6 SU	J HT
CH-CCR-M56-1020	J151756-1	Arsenic	0.0044 mg/L	J FD
CH-CCR-M56-1020	J151756-1	pH	7.5 SU	J HT
CH-CCR-M57-1020	J151756-1	pH	7.3 SU	J HT
CH-CCR-M58-1020	J151756-1	pH	7.6 SU	J HT
CH-CCR-M62-1020	J151756-1	pH	7.4 SU	J HT
CH-CCR-FD01-1020	J151757-1	Fluoride	1.5 mg/L	J HM
CH-CCR-FD01-1020	J151757-1	pH	7.4 SU	J HT
CH-CCR-M54-1020	J151757-1	pH	7.3 SU	J HT
CH-CCR-M59-1020	J151757-1	pH	7.5 SU	J HT
CH-CCR-M60-1020	J151757-1	Fluoride	1.4 mg/L	J HM
CH-CCR-M60-1020	J151757-1	pH	7.5 SU	J HT

TABLE 3
QUALIFIERS ADDED DURING DATA VALIDATION
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Sample Identification	Sample Delivery Group	Analyte	Result	Qualifier and Reason Code
CH-CCR-M61-1020	J151757-1	pH	7.5 SU	J HT
CH-CCR-FD03-1020	J151758-1	Chromium	0.0014 mg/L	J DL
CH-CCR-FD03-1020	J151758-1	Dissolved Arsenic	0.0013 mg/L	J DL
CH-CCR-FD03-1020	J151758-1	Dissolved Iron	0.072 mg/L	J DL
CH-CCR-FD03-1020	J151758-1	Iron	0.085 mg/L	J DL
CH-CCR-FD03-1020	J151758-1	pH	7.4 SU	J HT
CH-CCR-FD04-1020	J151758-1	Fluoride	0.49 mg/L	J DL
CH-CCR-FD04-1020	J151758-1	pH	7.3 SU	J HT
CH-CCR-FD04-1020	J151758-1	Total Organic Carbon	1.1 mg/L	J LM
CH-CCR-M52-1020	J151758-1	Antimony	0.0020 mg/L	U MB
CH-CCR-M52-1020	J151758-1	Dissolved Arsenic	0.0016 mg/L	J DL
CH-CCR-M52-1020	J151758-1	Lead	0.00053 mg/L	J DL
CH-CCR-M52-1020	J151758-1	pH	7.4 SU	J HT
CH-CCR-M52-1020	J151758-1	Thallium	0.000080 mg/L	J DL
CH-CCR-M53-1020	J151758-1	Ammonia	0.29 mg/L	J DL
CH-CCR-M53-1020	J151758-1	Antimony	0.0020 mg/L	U MB
CH-CCR-M53-1020	J151758-1	Dissolved Iron	0.051 mg/L	J DL
CH-CCR-M53-1020	J151758-1	Iron	0.051 mg/L	J DL
CH-CCR-M53-1020	J151758-1	Lead	0.00045 mg/L	J DL
CH-CCR-M53-1020	J151758-1	pH	7.5 SU	J HT
CH-CCR-M53-1020	J151758-1	Selenium	0.00048 mg/L	J DL
CH-CCR-M53-1020	J151758-1	Thallium	0.00011 mg/L	J DL
CH-CCR-M55-1020	J151758-1	Antimony	0.0020 mg/L	U MB
CH-CCR-M55-1020	J151758-1	Cadmium	0.000090 mg/L	J DL
CH-CCR-M55-1020	J151758-1	Cobalt	0.00017 mg/L	J DL
CH-CCR-M55-1020	J151758-1	Dissolved Cobalt	0.00050 mg/L	J DL
CH-CCR-M55-1020	J151758-1	Dissolved Iron	0.057 mg/L	J DL
CH-CCR-M55-1020	J151758-1	Fluoride	0.49 mg/L	J DL
CH-CCR-M55-1020	J151758-1	pH	7.4 SU	J HT
CH-CCR-M55-1020	J151758-1	Thallium	0.000072 mg/L	J DL
CH-CCR-M69-1020	J151758-1	pH	7.5 SU	J HT
CH-CCR-M70-1020	J151758-1	Arsenic	0.0013 mg/L	J TD
CH-CCR-M70-1020	J151758-1	Dissolved Arsenic	0.0032 mg/L	J TD
CH-CCR-M70-1020	J151758-1	Dissolved Iron	0.090 mg/L	J DL
CH-CCR-M70-1020	J151758-1	Iron	0.093 mg/L	J DL
CH-CCR-M70-1020	J151758-1	pH	7.4 SU	J HT
CH-CCR-M70-1020	J151758-1	Thallium	0.000032 mg/L	J DL
CH-CCR-W301-1020	J151758-1	Cadmium	0.00016 mg/L	J DL
CH-CCR-W301-1020	J151758-1	Chromium	0.00089 mg/L	J DL
CH-CCR-W301-1020	J151758-1	Dissolved Arsenic	0.0017 mg/L	J DL
CH-CCR-W301-1020	J151758-1	Dissolved Iron	0.040 mg/L	J DL
CH-CCR-W301-1020	J151758-1	Fluoride	0.33 mg/L	J DL
CH-CCR-W301-1020	J151758-1	Iron	0.052 mg/L	J DL
CH-CCR-W301-1020	J151758-1	pH	7.4 SU	J HT
CH-CCR-W301-1020	J151758-1	Thallium	0.000086 mg/L	J DL
CH-CCR-W302-1020	J151758-1	Dissolved Arsenic	0.0015 mg/L	J DL
CH-CCR-W302-1020	J151758-1	Lead	0.00066 mg/L	J DL

TABLE 3
QUALIFIERS ADDED DURING DATA VALIDATION
Coal Combustion Residuals Rule
2020 Compliance Monitoring Groundwater Data

Sample Identification	Sample Delivery Group	Analyte	Result	Qualifier and Reason Code
CH-CCR-W302-1020	J151758-1	pH	7.3 SU	J HT
CH-CCR-W302-1020	J151758-1	Selenium	0.00051 mg/L	J DL
CH-CCR-W302-1020	J151758-1	Thallium	0.000028 mg/L	J DL
CH-CCR-W303-1020	J151758-1	Antimony	0.0020 mg/L	U MB
CH-CCR-W303-1020	J151758-1	Cadmium	0.000088 mg/L	J DL
CH-CCR-W303-1020	J151758-1	Dissolved Iron	0.052 mg/L	J DL
CH-CCR-W303-1020	J151758-1	Fluoride	0.48 mg/L	J DL
CH-CCR-W303-1020	J151758-1	pH	7.4 SU	J HT
CH-CCR-W303-1020	J151758-1	Selenium	0.00072 mg/L	J DL
CH-CCR-W304-1020	J151758-1	Chromium	0.0013 mg/L	J DL
CH-CCR-W304-1020	J151758-1	Fluoride	0.25 mg/L	J DL
CH-CCR-W304-1020	J151758-1	pH	7.4 SU	J HT
CH-CCR-W304-1020	J151758-1	Selenium	0.00021 mg/L	J DL
CH-CCR-W304-1020	J151758-1	Thallium	0.000028 mg/L	J DL
CH-CCR-W305-1020	J151758-1	Arsenic	0.00068 mg/L	J DL
CH-CCR-W305-1020	J151758-1	Cadmium	0.000056 mg/L	J DL
CH-CCR-W305-1020	J151758-1	Dissolved Arsenic	0.0012 mg/L	J DL
CH-CCR-W305-1020	J151758-1	Dissolved Organic Carbon	1.7 mg/L	J LM
CH-CCR-W305-1020	J151758-1	Fluoride	0.39 mg/L	J DL
CH-CCR-W305-1020	J151758-1	pH	7.3 SU	J HT
CH-CCR-W306-1020	J151758-1	Antimony	0.00033 mg/L	J DL
CH-CCR-W306-1020	J151758-1	Cadmium	0.00020 mg/L	J DL
CH-CCR-W306-1020	J151758-1	Chromium	0.0017 mg/L	J DL
CH-CCR-W306-1020	J151758-1	Dissolved Cobalt	0.0018 mg/L	J DL
CH-CCR-W306-1020	J151758-1	Dissolved Manganese	0.010 mg/L	U MB
CH-CCR-W306-1020	J151758-1	Manganese	0.0011 mg/L	J DL
CH-CCR-W306-1020	J151758-1	pH	7.7 SU	J HT
CH-CCR-W307-1020	J151758-1	Fluoride	0.52 mg/L	J DL
CH-CCR-W307-1020	J151758-1	pH	7.2 SU	J HT
CH-CCR-W307-1020	J151758-1	Total Organic Carbon	1.1 mg/L	J LM
CH-CCR-W308-1020	J151758-1	Cadmium	0.000074 mg/L	J DL
CH-CCR-W308-1020	J151758-1	Dissolved Arsenic	0.0015 mg/L	J DL
CH-CCR-W308-1020	J151758-1	Dissolved Iron	0.053 mg/L	J DL
CH-CCR-W308-1020	J151758-1	Fluoride	0.48 mg/L	J DL
CH-CCR-W308-1020	J151758-1	pH	7.0 SU	J HT
CH-CCR-W308-1020	J151758-1	Thallium	0.000028 mg/L	J DL
CH-CCR-W309-1020	J151758-1	Cadmium	0.000066 mg/L	J DL
CH-CCR-W309-1020	J151758-1	Cobalt	0.00060 mg/L	J DL
CH-CCR-W309-1020	J151758-1	Dissolved Cobalt	0.00038 mg/L	J DL
CH-CCR-W309-1020	J151758-1	Dissolved Iron	0.038 mg/L	J DL
CH-CCR-W309-1020	J151758-1	pH	7.2 SU	J HT
CH-CCR-W309-1020	J151758-1	Thallium	0.000052 mg/L	J DL
CH-CCR-W309-1020	J151758-1	Total Organic Carbon	0.47 mg/L	J DL
CH-CCR-W314-1020	J151758-1	Dissolved Arsenic	0.0016 mg/L	J DL
CH-CCR-W314-1020	J151758-1	Dissolved Iron	0.040 mg/L	J DL
CH-CCR-W314-1020	J151758-1	Iron	0.058 mg/L	J DL
CH-CCR-W314-1020	J151758-1	Lead	0.00058 mg/L	J DL

TABLE 3
QUALIFIERS ADDED DURING DATA VALIDATION
Coal Combustion Residuals Rule
2020 Compliance Monitoring Groundwater Data

Sample Identification	Sample Delivery Group	Analyte	Result	Qualifier and Reason Code
CH-CCR-W314-1020	J151758-1	pH	7.2 SU	J HT
CH-CCR-W317-1020	J151758-1	Beryllium	0.00010 mg/L	J DL
CH-CCR-W317-1020	J151758-1	Cobalt	0.00073 mg/L	J DL
CH-CCR-W317-1020	J151758-1	Fluoride	0.36 mg/L	J DL
CH-CCR-W317-1020	J151758-1	pH	7.6 SU	J HT

Notes:

mg/L = milligrams per liter

S.U. = standard units

Qualifiers:

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

U = not detected

R = The result has been rejected.

UJ = The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Reason Codes:

DL = the detected concentration was less than the reporting limit

MB = The analyte was detected in the associated laboratory blank and the concentration detected in the sample is less than five times the concentration detected in the blank.

FD = Imprecision between primary and field duplicate results. Potential sampling and/or analytical imprecision.

HD = Imprecision between primary and laboratory duplicate results.

HM = High matrix spike recovery. Result may be biased high.

HT = The maximum recommended hold time was exceeded and the result should be considered an estimated value.

LM = Low matrix spike recovery. Result may be biased low.

TD = Dissolved concentration is significantly greater than the total concentration.

**APPENDIX A - DATA ASSESSMENT CHECKLISTS BY
SAMPLE DELIVERY GROUP**

Cholla CCR Data Review

Laboratory Name:	Eurofins TestAmerica, Phoenix		
Sample Delivery Group:	550-141149-1	Review Date:	11 June 2020
Validator's Name:	Marie Bevier	Reviewed By:	Denise King

Sample Summary:

Field Sample Identification	Collection Date and Time	Laboratory Sample Identification	Notes
CH-CCR-M56-0420	04/16/20 15:55	550-141149-1	
CH-CCR-M57-0420	04/16/20 14:35	550-141149-2	
CH-CCR-M58-0420	04/16/20 15:15	550-141149-3	
CH-CCR-M62-0420	04/16/20 13:33	550-141149-4	
CH-CCR-FD02-0420	04/16/20 15:55	550-141149-5	Field duplicate of CH-CCR-M56-0420

Analytical Methods:

Analyte	Analyte Group	Method
Beryllium, Boron, Calcium, Lithium	Metals	EPA 200.7
Antimony, Arsenic, Barium, Cadmium, Chromium, Cobalt, Lead, Molybdenum, Selenium, Thallium	Metals	EPA 200.8
Mercury	Metals	EPA 245.1
Chloride, Fluoride, Sulfate	Anions	EPA 300.0
Total Dissolved Solids	General Chemistry	SM 2540C
pH	General Chemistry	SM 4500 H ⁺ B

Qualifier Definitions:

- J** The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R** The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
- U** The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- UJ** The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Cholla CCR Data Review

Sample Receipt Condition:

COC Signed and Complete?

Yes

No

If No, provide details.

Sample Login Matched COC?

Yes

No

If no, provide details.

Sample receipt temperature $\leq 6^{\circ}\text{C}$?

Yes

No

If no, provide details.

Cholla CCR Data Review

1. Samples analyzed for metals within 180 days of sampling? ☒ Yes ☐ No

2. Samples analyzed for mercury, chloride, fluoride, and/or sulfate within 28 days of sampling? ☒ Yes ☐ No

3. Samples analyzed for total dissolved solids within 7 days of sampling? ☒ Yes ☐ No

4. Samples analyzed for pH within 15 minutes of sampling? ☐ Yes ☒ No N/A

If No:

Sample ID	Analysis	Time Between Collection And Analysis	Effect on data usability
CH-CCR-M56-0420	pH	11 days, 51 minutes	J-HT
CH-CCR-M57-0420	pH	11 days, 2 hours, 11 minutes	J-HT
CH-CCR-M58-0420	pH	11 days, 1 hour, 31 minutes	J-HT
CH-CCR-M62-0420	pH	11 days, 3 hours, 13 minutes	J-HT
CH-CCR-FD02-0420	pH	11 days, 51 minutes	J-HT

Note:

HT = The maximum recommended hold time was exceeded, and the result should be considered an estimated value.

5. Target analytes detected in the blank? ☐ Yes ☒ No

If Yes:

Detected Analyte	Concentration	Samples with concentrations less than 5 times the blank detection

Cholla CCR Data Review

6. LCS recoveries within laboratory-specified limits?

Yes

No

If No:

Analyte	Recovery	Affected Samples

7. MS performed on a project-specific sample?

Yes

No

If Yes:

Spiked Sample ID	Spiked Analyte(s)
CH-CCR-M56-0420	Chloride, Fluoride, Sulfate, Antimony, Arsenic, Barium, Cadmium, Chromium, Cobalt, Lead, Molybdenum, Selenium, Thallium, Mercury
CH-CCR-M58-0420	Beryllium, Boron, Calcium, Lithium

a. Are MS recoveries and/or precision within laboratory specified limits?

Yes

No

If No:

Sample ID	Analyte	RPD or Recovery	Accuracy or Recovery Limits	Effect on Data Usability
CH-CCR-M58-0420	Calcium	-3%, 45%	70 to 130%	None ⁴

⁴ The analyte concentration in the unspiked native sample is more than four times the spike concentration and it is not possible to assess data usability for this analyte in this sample based on MS recovery.

Cholla CCR Data Review

8. Field duplicate collected?

Yes

No

If Yes:

Parent Sample	Field Duplicate
CH-CCR-M56-0420	CH-CCR-FD02-0420

a. Is the RPD between primary and duplicate results $\leq 20\%$ or is the difference between analyte concentrations \leq the reporting limit?

Yes

No

Not Applicable

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes
Samples CH-CCR-M56-0420 and CH-CCR-FD02-0420					
Chloride	400 mg/L	1,800	1,800	0%	
Sulfate	400 mg/L	1,000	1,000	0%	
Boron	0.25 mg/L	0.38	0.37	2.7%	
Calcium	2.0 mg/L	300	290	3.4%	
Barium	0.0050 mg/L	0.052	0.052	0%	
Chromium	0.010 mg/L	0.034	0.028	19%	
Molybdenum	0.0050 mg/L	0.012	0.012	0%	
Total Dissolved Solids	100 mg/L	4,600	4,500	2.2%	
pH	1.7 SU	7.5	7.4	1.3%	

Notes:

mg/L = milligrams per liter

SU = standard units

Cholla CCR Data Review

9. Did the laboratory perform duplicate analyses on project-specific samples?

☒ Yes

☐ No

If Yes:

Sample ID	Analysis
CH-CCR-M56-0420	Total dissolved solids

a. Is the RPD between duplicate results within laboratory-specified limits or is the difference between analyte concentrations less than the reporting limit?

☒ Yes

☐ No

☐ Not Applicable

If No:

Sample ID	Analyte	Effect on Data Usability

Cholla CCR Data Review

10. Are non-detect results sufficiently low to meet EPA primary drinking water criteria?

Yes

No

Analyte	List	MCL	Alternative GWPS	Units
Antimony	Appendix IV	0.006	--	mg/L
Arsenic	Appendix IV	0.010	--	mg/L
Barium	Appendix IV	2	--	mg/L
Beryllium	Appendix IV	0.004	--	mg/L
Boron	Appendix III	--	--	mg/L
Cadmium	Appendix IV	0.005	--	mg/L
Calcium	Appendix III	--	--	mg/L
Chloride	Appendix III	--	--	mg/L
Chromium	Appendix IV	0.1	--	mg/L
Cobalt	Appendix IV	--	0.006	mg/L
Fluoride	Appendix III/IV	4.0	--	mg/L
Lead	Appendix IV	--	0.015	mg/L
Lithium	Appendix IV	--	0.040	mg/L
Mercury	Appendix IV	0.002	--	mg/L
Molybdenum	Appendix IV	--	0.1	mg/L
pH	Appendix III	--	--	s.u.
Radium 226 + Radium 228	Appendix IV	5	--	pCi/L
Selenium	Appendix IV	0.05	--	mg/L
Sulfate	Appendix III	--	--	mg/L
Total Dissolved Solids	Appendix III	--	--	mg/L
Thallium	Appendix IV	0.002	--	mg/L

If No, list affected samples and analytes.

Sample ID	Analyte	Reporting Limit
CH-CCR-M56-0420	Lithium	1 mg/L
CH-CCR-M57-0420	Lithium	1 mg/L
CH-CCR-M58-0420	Lithium	1 mg/L
CH-CCR-M62-0420	Lithium	1 mg/L
CH-CCR-FD02-0420	Lithium	1 mg/L

Cholla CCR Data Review

Laboratory Name:	Eurofins TestAmerica, Phoenix		
Sample Delivery Group:	J141150-1	Review Date:	11 June 2020
Validator's Name:	Marie Bevier	Reviewed By:	Denise King

Sample Summary:

Field Sample Identification	Collection Date and Time	Laboratory Sample Identification	Notes
CH-CCR-M52-0420	04/19/20 11:52	550-141150-1/2	
CH-CCR-M53-0420	04/19/20 10:04	550-141150-3/4	
CH-CCR-M55-0420	04/17/20 15:56	550-141150-5/6	
CH-CCR-M69-0420	04/19/20 13:12	550-141150-7/8	
CH-CCR-M70-0420	04/19/20 14:55	550-141150-9/10	
CH-CCR-W301-0420	04/18/20 13:37	550-141150-11/12	
CH-CCR-W302-0420	04/17/20 09:45	550-141150-13/14	
CH-CCR-W303-0420	04/18/20 14:49	550-141150-15/16	
CH-CCR-W304-0420	04/17/20 11:16	550-141150-17/18	
CH-CCR-FD03-0420	04/19/20 10:04	550-141150-19/20	Field duplicate of CH-CCR-M53-0420
CH-CCR-W305-0420	04/18/20 16:24	550-141150-21/22	
CH-CCR-W306-0420	04/19/20 08:12	550-141150-23/24	
CH-CCR-W307-0420	04/17/20 12:27	550-141150-25/26	
CH-CCR-W308-0420	04/17/20 14:18	550-141150-27/28	
CH-CCR-W314-0420	04/19/20 16:09	550-141150-29/30	
CH-CCR-W317-0420	04/16/20 16:48	550-141150-31	
CH-CCR-FD04-0420	04/19/20 08:12	550-141150-32/33	Field duplicate of CH-CCR-W306-0420

Analytical Methods:

Analyte	Analyte Group	Method
Beryllium, Boron, Calcium, Iron, Lithium, Magnesium, Manganese, Potassium, Sodium, Dissolved Manganese, Dissolved Iron	Metals	EPA 200.7
Arsenic, Barium, Cadmium, Chromium, Cobalt, Lead, Molybdenum, Selenium, Thallium, Dissolved Arsenic, Dissolved Cobalt	Metals	EPA 200.8
Chloride, Fluoride, Nitrate/Nitrite, Sulfate	Anions	EPA 300.0
Alkalinity	General Chemistry	SM 2320B
Total Dissolved Solids	General Chemistry	SM 2540C
pH	General Chemistry	SM 4500 H ⁺ B
Ammonia	General Chemistry	SM 4500 NH ₃ D
Total Organic Carbon, Dissolved Organic Carbon	General Chemistry	SM 5310B

Cholla CCR Data Review

Qualifier Definitions:

- J** The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R** The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
- U** The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- UJ** The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Sample Receipt Condition:

COC Signed and Complete?
If No, provide details.

Yes

No

Sample Login Matched COC?
If no, provide details.

Yes

No

Sample receipt temperature $\leq 6^{\circ}\text{C}$?
If no, provide details.

Yes

No

Cholla CCR Data Review

1. Samples analyzed for metals within 180 days of sampling? ☒ Yes ☐ No

2. Samples analyzed for chloride, fluoride, nitrate/nitrite, sulfate, total organic carbon, and/or dissolved organic carbon within 28 days of sampling? ☒ Yes ☐ No

3. Samples analyzed for alkalinity within 14 days of sampling? ☒ Yes ☐ No

4. Samples analyzed for total dissolved solids within 7 days of sampling? ☒ Yes ☐ No

5. Samples analyzed for pH within 15 minutes of sampling? ☐ Yes ☒ No N/A

If No:

Sample ID	Analysis	Time Between Collection And Analysis	Effect on data usability
CH-CCR-M52-0420	pH	5 days, 3 hours, 8 minutes	J-HT
CH-CCR-M53-0420	pH	5 days, 4 hours, 56 minutes	J-HT
CH-CCR-M55-0420	pH	6 days, 23 hours, 4 minutes	J-HT
CH-CCR-M69-0420	pH	5 days, 1 hour, 48 minutes	J-HT
CH-CCR-M70-0420	pH	5 days, 5 minutes	J-HT
CH-CCR-W301-0420	pH	6 days, 1 hour, 23 minutes	J-HT
CH-CCR-W302-0420	pH	7 days, 5 hours, 15 minutes	J-HT
CH-CCR-W303-0420	pH	6 days, 11 minutes	J-HT
CH-CCR-W304-0420	pH	7 days, 3 hours, 44 minutes	J-HT
CH-CCR-FD03-0420	pH	5 days, 4 hours, 56 minutes	J-HT
CH-CCR-W305-0420	pH	5 days, 22 hours, 36 minutes	J-HT
CH-CCR-W306-0420	pH	5 days, 6 hours, 48 minutes	J-HT
CH-CCR-W307-0420	pH	7 days, 2 hours, 33 minutes	J-HT
CH-CCR-W308-0420	pH	7 days, 42 minutes	J-HT
CH-CCR-W314-0420	pH	7 days, 21 hours, 37 minutes	J-HT
CH-CCR-W317-0420	pH	10 days, 20 hours, 58 minutes	J-HT
CH-CCR-FD04-0420	pH	8 days, 5 hours, 34 minutes	J-HT

Note:

HT = The maximum recommended hold time was exceeded, and the result should be considered an estimated value.

Cholla CCR Data Review

6. Target analytes detected in the blank?

Yes

☒ No

If Yes:

Detected Analyte	Concentration	Samples with concentrations less than 5 times the blank detection

7. LCS recoveries within laboratory-specified limits?

☒ Yes

No

If No:

Analyte	Recovery	Affected Samples

Cholla CCR Data Review

8. MS performed on a project-specific sample?

Yes

No

If Yes:

Spiked Sample ID	Spiked Analyte(s)
CH-CCR-M52-0420	Chloride, Fluoride, Nitrate/Nitrite, Sulfate, Arsenic, Barium, Cadmium, Chromium, Cobalt, Lead, Molybdenum, Selenium, Thallium, Ammonia, Total Organic Carbon, Dissolved: Arsenic, Cobalt, Dissolved Organic Carbon
CH-CCR-M53-0420	Dissolved Organic Carbon
CH-CCR-M55-0420	Molybdenum, Dissolved: Beryllium, Boron, Calcium, Iron, Lithium, Magnesium, Manganese, Potassium, Sodium

a. Are MS recoveries and/or precision within laboratory specified limits?

Yes

No

If No:

Sample ID	Analyte	RPD or Recovery	Accuracy or Recovery Limits	Effect on Data Usability
CH-CCR-M55-0420	Dissolved Calcium	-240%, -145%	70 to 130%	None ⁴
CH-CCR-M55-0420	Dissolved Magnesium	23%, 18%	70 to 130%	None ⁴
CH-CCR-M55-0420	Dissolved Sodium	-1615%, -1061%	70 to 130%	None ⁴
CH-CCR-M52-0420	DOC	49%, 49%	90 to 110%	J-LM

Notes:

⁴ The analyte concentration in the unspiked native sample is more than four times the spike concentration and it is not possible to assess data usability for this analyte in this sample based on MS recovery.

LM = Low matrix spike recovery. Result may be biased low.

Cholla CCR Data Review

9. Field duplicate collected?

Yes ☐ No ☒

If Yes:

Parent Sample	Field Duplicate
CH-CCR-M53-0420	CH-CCR-FD03-0420
CH-CCR-W306-0420	CH-CCR-FD04-0420

b. Is the RPD between primary and duplicate results $\leq 20\%$ or is the difference between analyte concentrations \leq the reporting limit?

Yes ☐ No ☒ Not Applicable ☐

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes
Samples CH-CCR-M53-0420 and CH-CCR-FD03-0420					
Chloride	400 mg/L	2,400	2,300	4.3%	
Fluoride	0.80 mg/L	2.1	2.1	0.0%	
Sulfate	400 mg/L	3,100	3,000	3.3%	
Boron	0.25 mg/L	3.7	3.7	0.0%	
Calcium	2.0 mg/L	610	620	1.6%	
Magnesium	2.0 mg/L	210	210	0.0%	
Manganese	0.050 mg/L	5.2	5.0	3.9%	
Potassium	1.5 mg/L	15	12	22%	J-FD
Sodium	5.0 mg/L	1,600	1,600	0.0%	
Barium	0.00050 mg/L	0.0087	0.0088	1.1%	
Cadmium	0.00010 mg/L	0.0012	0.0012	0.0%	
Cobalt	0.0050 mg/L	0.014	0.014	0.0%	
Molybdenum	0.0025 mg/L	0.038	0.039	2.6%	
Alkalinity as CaCO ₃	6.0 mg/L	96	96	0.0%	
Bicarbonate Alkalinity	6.0 mg/L	96	96	0.0%	
Total Dissolved Solids	100 mg/L	8,200	7,800	5.0%	
pH	1.7 SU	7.5	7.4	1.3%	
TOC	0.50 mg/L	1.2	1.2	0.0%	
TOC - Duplicates	0.50 mg/L	1.1	1.2	8.7%	
TOC - Quad	0.50 mg/L	1.2	1.2	0.0%	
Dissolved Manganese	0.010 mg/L	4.8	5.0	4.1%	
Dissolved Cobalt	0.0050 mg/L	0.016	0.014	13%	
DOC	0.50 mg/L	1.2	1.3	8.0%	
DOC - Duplicate	0.50 mg/L	1.2	1.3	8.0%	
DOC - Quad	0.50 mg/L	1.2	1.3	8.0%	

Cholla CCR Data Review

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes
Samples CH-CCR-W306-0420 and CH-CCR-FD04-0420					
Chloride	400 mg/L	2,000	1,800	11%	
Fluoride	0.80 mg/L	1.1	1.5	31%	± RL
Sulfate	400 mg/L	13,000	12,000	8.0%	
Beryllium	0.0010 mg/L	0.0017	0.0017	0.0%	
Boron	0.15 mg/L	1.2	1.1	8.7%	
Calcium	2.0 mg/L	400	400	0.0%	
Lithium	0.60 mg/L	1.3	1.2	8.0%	
Magnesium	2.0 mg/L	230	230	0.0%	
Potassium	1.5 mg/L	3.6	9.7	92%	J-FD
Sodium	5.0 mg/L	5,700	5,500	3.6%	
Arsenic	0.0038 mg/L	0.0050	0.0048	4.1%	
Barium	0.0050 mg/L	0.012	0.011	8.7%	
Molybdenum	0.0025 mg/L	0.042	0.039	7.4%	
Alkalinity as CaCO ₃	6.0 mg/L	130	130	0.0%	
Bicarbonate Alkalinity	6.0 mg/L	130	130	0.0%	
TDS	200 mg/L	19,000	19,000	0.0%	
pH	1.7 SU	7.8	7.9	1.3%	
TOC	0.50 mg/L	2.4	2.5	4.1%	
TOC - Duplicates	0.50 mg/L	2.4	2.5	4.1%	
TOC - Quad	0.50 mg/L	2.4	2.5	4.1%	
Dissolved Arsenic	0.0050 mg/L	0.0055	0.0051	7.5%	
DOC	0.50 mg/L	2.6	2.7	3.8%	
DOC - Duplicate	0.50 mg/L	2.6	2.7	3.8%	
DOC - Quad	0.50 mg/L	2.6	2.7	3.8%	

Notes:

± RL = The difference between concentrations is less than the reporting limit, indicating acceptable sampling and analytical precision.

FD = Imprecision between primary and field duplicate results

mg/L = milligrams per liter

SU = standard units

Cholla CCR Data Review

10. Did the laboratory perform duplicate analyses on project-specific samples?

☒ Yes ☐ No

If Yes:

Sample ID	Analysis
CH-CCR-M52-0420	Alkalinity, Total Dissolved Solids
CH-CCR-M53-0420	Total Dissolved Solids
CH-CCR-M70-0420	pH
CH-CCR-W304-0420	Alkalinity
CH-CCR-W314-0420	pH

c. Is the RPD between duplicate results within laboratory-specified limits or is the difference between analyte concentrations less than the reporting limit?

Yes ☒ No ☐ Not Applicable

If No:

Sample ID	Analyte	Effect on Data Usability
CH-CCR-M52-0420	Alkalinity	J-HD
CH-CCR-M52-0420	Bicarbonate Alkalinity	J-HD

Note:

HD = Imprecision between primary and laboratory duplicate results.

Cholla CCR Data Review

11. Are non-detect results sufficiently low to meet EPA primary drinking water criteria?

Yes

No

Analyte	List	MCL	Alternative GWPS	Units
Antimony	Appendix IV	0.006	--	mg/L
Arsenic	Appendix IV	0.010	--	mg/L
Barium	Appendix IV	2	--	mg/L
Beryllium	Appendix IV	0.004	--	mg/L
Boron	Appendix III	--	--	mg/L
Cadmium	Appendix IV	0.005	--	mg/L
Calcium	Appendix III	--	--	mg/L
Chloride	Appendix III	--	--	mg/L
Chromium	Appendix IV	0.1	--	mg/L
Cobalt	Appendix IV	--	0.006	mg/L
Fluoride	Appendix III/IV	4.0	--	mg/L
Lead	Appendix IV	--	0.015	mg/L
Lithium	Appendix IV	--	0.040	mg/L
Mercury	Appendix IV	0.002	--	mg/L
Molybdenum	Appendix IV	--	0.1	mg/L
pH	Appendix III	--	--	s.u.
Radium 226 + Radium 228	Appendix IV	5	--	pCi/L
Selenium	Appendix IV	0.05	--	mg/L
Sulfate	Appendix III	--	--	mg/L
Total Dissolved Solids	Appendix III	--	--	mg/L
Thallium	Appendix IV	0.002	--	mg/L

If No, list affected samples and analytes.

Sample ID	Analyte	Reporting Limit
CH-CCR-W305-0420	Lithium	1.0 mg/L
CH-CCR-W307-0420	Lithium	1.0 mg/L
CH-CCR-W308-0420	Lithium	1.0 mg/L
CH-CCR-W314-0420	Lithium	1.0 mg/L
CH-CCR-M53-0420	Lithium	1.0 mg/L
CH-CCR-M52-0420	Lithium	1.0 mg/L
CH-CCR-W301-0420	Lithium	1.0 mg/L
CH-CCR-W302-0420	Lithium	1.0 mg/L
CH-CCR-W303-0420	Lithium	1.0 mg/L
CH-CCR-W304-0420	Lithium	1.0 mg/L
CH-CCR-FD03-0420	Lithium	1.0 mg/L
CH-CCR-W317-0420	Lithium	0.20 mg/L
CH-CCR-M55-0420	Lithium	1.0 mg/L
CH-CCR-M69-0420	Lithium	1.0 mg/L
CH-CCR-M70-0420	Lithium	1.0 mg/L

Cholla CCR Data Review

12. Are total analyte concentrations greater than dissolved analyte concentrations or are differences between total and dissolved results less than the reporting limit?

Yes

No

If No, list affected samples and analytes.

Sample ID	Analyte	Total	Dissolved	Effect on Data Usability
CH-CCR-W302-0420	Organic Carbon	0.64 mg/L	1.2 mg/L	J-TD

Note:

TD = Dissolved concentration is significantly greater than the total concentration.

Cholla CCR Data Review

Laboratory Name:	Eurofins TestAmerica Phoenix		
Sample Delivery Group:	J141924-1	Review Date:	12 June 2020
Validator's Name:	Marie Bevier	Reviewed By:	Denise King

Sample Summary:

Field Sample Identification	Collection Date and Time	Laboratory Sample Identification	Notes
CH-CCR-M54-0520	05/07/20 14:38	550-141924-1	
CH-CCR-M59-0520	05/07/20 11:13	550-141924-2	
CH-CCR-M60-0520	05/07/20 13:36	550-141924-3	
CH-CCR-M61-0520	05/07/20 12:18	550-141924-4	
CH-CCR-FD01-0520	05/07/20 12:18	550-141924-5	Field duplicate of CH-CCR-M61-0520

Analytical Methods:

Analyte	Analyte Group	Method
Boron, Calcium	Metals	EPA 200.7
Chloride, Fluoride, Sulfate	Anions	EPA 300.0
Total Dissolved Solids	General Chemistry	SM 2540C
pH	General Chemistry	SM 4500 H ⁺ B

Qualifier Definitions:

- J** The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R** The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
- U** The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- UJ** The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Cholla CCR Data Review

Sample Receipt Condition:

COC Signed and Complete?

Yes

No

If No, provide details.

Sample Login Matched COC?

Yes

No

If no, provide details.

Sample receipt temperature $\leq 6^{\circ}\text{C}$?

Yes

No

If no, provide details.

Cholla CCR Data Review

1. Samples analyzed for metals within 180 days of sampling? ☒ Yes ☐ No

2. Samples analyzed for chloride, fluoride, and/or sulfate within 28 days of sampling? ☒ Yes ☐ No

3. Samples analyzed for total dissolved solids within 7 days of sampling? ☒ Yes ☐ No

4. Samples analyzed for pH within 15 minutes of sampling? ☐ Yes ☒ No N/A

If No:

Sample ID	Analysis	Time Between Collection And Analysis	Effect on data usability
CH-CCR-M54-0520	pH	6 days, 22 hours, 57 minutes	J-HT
CH-CCR-M59-0520	pH	7 days, 2 hours, 22 minutes	J-HT
CH-CCR-M60-0520	pH	6 days, 23 hours, 59 minutes	J-HT
CH-CCR-M61-0520	pH	7 days, 1 hour, 17 minutes	J-HT
CH-CCR-FD01-0520	pH	14 days, 4 hours, 12 minutes	J-HT

Note:

HT = The maximum recommended hold time was exceeded, and the result should be considered an estimated value.

5. Target analytes detected in the blank? ☐ Yes ☒ No

If Yes:

Detected Analyte	Concentration	Samples with concentrations less than 5 times the blank detection

Cholla CCR Data Review

6. LCS recoveries within laboratory-specified limits?

Yes

No

If No:

Analyte	Recovery	Affected Samples

7. MS performed on a project-specific sample?

Yes

No

If Yes:

Spiked Sample ID	Spiked Analyte(s)
CH-CCR-M61-0520	Chloride, Fluoride, Sulfate, Boron, Calcium

a. Are MS recoveries and/or precision within laboratory specified limits?

Yes

No

If No:

Sample ID	Analyte	RPD or Recovery	Accuracy or Recovery Limits	Effect on Data Usability

Cholla CCR Data Review

8. Field duplicate collected?

Yes

No

If Yes:

Parent Sample	Field Duplicate
CH-CCR-M61-0520	CH-CCR-FD01-0520

a. Is the RPD between primary and duplicate results $\leq 20\%$ or is the difference between analyte concentrations \leq the reporting limit?

Yes

No

Not Applicable

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes
Samples CH-CCR-M61-0520 and CH-CCR-FD01-0520					
Chloride	200 mg/L	1,300	1,200	8.0%	
Fluoride	0.80 mg/L	1.6	1.7	6.1%	
Sulfate	4.0 mg/L	350	350	0.0%	
Boron	0.050 mg/L	0.51	0.51	0.0%	
Calcium	2.0 mg/L	93	93	0.0%	
TDS	100 mg/L	3,000	2,900	3.4%	
pH	1.7 SU	7.7	7.6	1.3%	

Notes:

mg/L = milligrams per liter

SU = standard units

Cholla CCR Data Review

9. Did the laboratory perform duplicate analyses on project-specific samples?

☒ Yes

☐ No

If Yes:

Sample ID	Analysis
CH-CCR-M61-0520	Total Dissolved Solids, pH

a. Is the RPD between duplicate results within laboratory-specified limits or is the difference between analyte concentrations less than the reporting limit?

☒ Yes

☐ No

☐ Not Applicable

If No:

Sample ID	Analyte	Effect on Data Usability

Cholla CCR Data Review

10. Are non-detect results sufficiently low to meet EPA primary drinking water criteria?

Yes

No

Analyte	List	MCL	Alternative GWPS	Units
Antimony	Appendix IV	0.006	--	mg/L
Arsenic	Appendix IV	0.010	--	mg/L
Barium	Appendix IV	2	--	mg/L
Beryllium	Appendix IV	0.004	--	mg/L
Boron	Appendix III	--	--	mg/L
Cadmium	Appendix IV	0.005	--	mg/L
Calcium	Appendix III	--	--	mg/L
Chloride	Appendix III	--	--	mg/L
Chromium	Appendix IV	0.1	--	mg/L
Cobalt	Appendix IV	--	0.006	mg/L
Fluoride	Appendix III/IV	4.0	--	mg/L
Lead	Appendix IV	--	0.015	mg/L
Lithium	Appendix IV	--	0.040	mg/L
Mercury	Appendix IV	0.002	--	mg/L
Molybdenum	Appendix IV	--	0.1	mg/L
pH	Appendix III	--	--	s.u.
Radium 226 + Radium 228	Appendix IV	5	--	pCi/L
Selenium	Appendix IV	0.05	--	mg/L
Sulfate	Appendix III	--	--	mg/L
Total Dissolved Solids	Appendix III	--	--	mg/L
Thallium	Appendix IV	0.002	--	mg/L

If No, list affected samples and analytes.

Sample ID	Analyte	Reporting Limit

Cholla CCR Data Review

Laboratory Name:	Eurofins TestAmerica Phoenix		
Sample Delivery Group:	550-141925-1	Review Date:	06/12/2020
Validator's Name:	Marie Bevier	Reviewed By:	Denise King

Sample Summary:

Field Sample Identification	Collection Date and Time	Laboratory Sample Identification	Notes
CH-CCR-M44D-0520	5/7/2020 9:35	550-141925-1	
CH-CCR-M46-0520	5/5/2020 10:01	550-141925-2/3	
CH-CCR-M50-0520	5/6/2020 13:46	550-141925-4/5	Logged in as CH-CCR-M50A-0520
CH-CCR-M51-0520	5/6/2020 15:15	550-141925-6/7	Logged in as CH-CCR-M51A-0520
CH-CCR-M64-0520	5/6/2020 8:13	550-141925-8/9	
CH-CCR-M65-0520	5/5/2020 8:16	550-141925-10/11	
CH-CCR-M66-0520	5/5/2020 12:46	550-141925-12/13	
CH-CCR-M67-0520	5/5/2020 11:22	550-141925-14/15	
CH-CCR-W123-0520	5/6/2020 11:14	550-141925-16/17	
CH-CCR-W125-0520	5/6/2020 12:45	550-141925-18	
CH-CCR-W126-0520	5/5/2020 14:09	550-141925-19/20	
CH-CCR-FD05-0520	5/6/2020 8:13	550-141925-21/22	Field duplicate of CH-CCR-M64-0520
CH-TANNERS-0520	5/8/2020 8:02	550-141925-23	
CH-CCR-W309-0520	5/4/2020 14:24	550-141925-24/25	

Analytical Methods:

Analyte	Analyte Group	Method
Beryllium, Boron, Calcium, Iron, Lithium, Magnesium, Manganese, Potassium, Sodium, Dissolved Iron, Dissolved Manganese	Metals	EPA 200.7
Antimony, Arsenic, Barium, Cadmium, Chromium, Cobalt, Lead, Molybdenum, Selenium, Dissolved Arsenic, Dissolved Cobalt	Metals	EPA 200.8
Chloride, Fluoride, Nitrate/Nitrite, Sulfate	Anions	EPA 300.0
Alkalinity	General Chemistry	SM 2320B
Total Dissolved Solids	General Chemistry	SM 2540C
pH	General Chemistry	SM 4500 H ⁺ B
Ammonia	General Chemistry	SM 4500 NH ₃ D
Total Organic Carbon (TOC), Dissolved Organic Carbon (DOC)	General Chemistry	SM 5310B

Cholla CCR Data Review

Qualifier Definitions:

- J** The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R** The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
- U** The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- UJ** The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Sample Receipt Condition:

COC Signed and Complete?

☒ Yes

☐ No

If No, provide details.

Sample Login Matched COC?

☐ Yes

☒ No

If no, provide details.

Sample recorded on the COC as CH-CCR-M50-0520 was logged in as CH-CCR-M50A-05201.
Sample recorded on the COC as CH-CCR-M51-0520 was logged in as CH-CCR-M51A-0520.

Sample receipt temperature $\leq 6^{\circ}\text{C}$?

☒ Yes

☐ No

If no, provide details.

Cholla CCR Data Review

1. Samples analyzed for metals within 180 days of sampling? ☒ Yes ☐ No

2. Samples analyzed for ammonia, chloride, fluoride, nitrate/nitrite, sulfate, TOC, and/or DOC within 28 days of sampling? ☒ Yes ☐ No

3. Samples analyzed for alkalinity within 14 days of sampling? ☒ Yes ☐ No

4. Samples analyzed for total dissolved solids within 7 days of sampling? ☒ Yes ☐ No

5. Samples analyzed for pH within 15 minutes of sampling? ☐ Yes ☒ No ☐ N/A

If No:

Sample ID	Analysis	Time Between Collection and Analysis	Effect on Data Usability
CH-CCR-M46-0520	pH	16 days, 6 hours, 29 minutes	J-HT
CH-CCR-M50-0520	pH	15 days, 2 hours, 44 minutes	J-HT
CH-CCR-M51-0520	pH	15 days, 1 hour, 15 minutes	J-HT
CH-CCR-M64-0520	pH	15 days, 8 hours, 17 minutes	J-HT
CH-CCR-M65-0520	pH	16 days, 8 hours, 14 minutes	J-HT
CH-CCR-M66-0520	pH	16 days, 3 hours, 44 minutes	J-HT
CH-CCR-M67-0520	pH	16 days, 5 hours, 8 minutes	J-HT
CH-CCR-W123-0520	pH	15 days, 5 hours, 16 minutes	J-HT
CH-CCR-W126-0520	pH	16 days, 2 hours, 21 minutes	J-HT
CH-CCR-FD05-0520	pH	15 days, 8 hours, 17 minutes	J-HT
CH-TANNERS-0520	pH	13 days, 8 hours, 28 minutes	J-HT
CH-CCR-W309-0520	pH	17 days, 2 hours, 6 minutes	J-HT

Note:

HT = The maximum recommended hold time was exceeded, and the result should be considered an estimated value.

Cholla CCR Data Review

6. Target analytes detected in the blank?

Yes

☒ No

If Yes:

Detected Analyte	Concentration	Samples with concentrations less than 5 times the blank detection

7. LCS recoveries within laboratory-specified limits?

☒ Yes

No

If No:

Analyte	Recovery	Affected Samples

Cholla CCR Data Review

8. MS performed on a project-specific sample?

Yes ☒ No ☐

If Yes:

Spiked Sample ID	Spiked Analyte(s)
CH-CCR-M46-0520	Chloride, Fluoride, Nitrate/Nitrite, Sulfate, Iron, Manganese, Dissolved Iron and Manganese, Ammonia, TOC
CH-CCR-M50-0520	Arsenic, Cadmium, Chromium, Cobalt, Lead, Molybdenum, Selenium, Dissolved Arsenic and Cobalt, DOC
CH-CCR-M67-0520	Chloride, Fluoride, Sulfate
CH-CCR-FD05-0520	Arsenic, Barium, Cadmium, Chromium, Cobalt, Molybdenum, Selenium
CH-CCR-W309-0520	Dissolved Arsenic and Cobalt

a. Are MS recoveries and/or precision within laboratory specified limits?

Yes ☐ No ☒

If No:

Sample ID	Analyte	RPD or Recovery	Accuracy or Recovery Limits	Effect on Data Usability
CH-CCR-M46-0520	Fluoride	59%, 78%, 26% RPD	80 to 120%, ≤ 20% RPD	UJ-LM
CH-CCR-M46-0520	Chloride	145% MSD	80 to 120%, ≤ 20% RPD	J-HM
CH-CCR-M46-0520	Sulfate	169% MSD, 27% RPD	80 to 120%, ≤ 20% RPD	J-HM, HD
CH-CCR-M46-0520	Nitrate/Nitrite	50% MSD 71% RPD	80 to 120%, ≤ 20% RPD	UJ-LM
CH-CCR-M46-0520	Dissolved Manganese	66% MSD	70 to 130%	J-LM
CH-CCR-M46-0520	TOC	225% MS, 69% RPD	90 to 110%, ≤ 20% RPD	J-HM, HD
CH-CCR-M50-0520	DOC	113% MSD	88 to 112%	J-HM

Notes:

HD = Imprecision between laboratory duplicate results.

HM = High matrix spike recovery. Result may be biased high.

LM = Low matrix spike recovery. Result may be biased low.

MS = matrix spike MSD = matrix spike duplicate RPD = relative percent difference

Cholla CCR Data Review

9. Field duplicate collected?

☒ Yes
 ☐ No

If Yes:

Parent Sample	Field Duplicate
CH-CCR-M64-0520	CH-CCR-FD05-0520

a. Is the RPD between primary and duplicate results $\leq 20\%$ or is the difference between analyte concentrations \leq the reporting limit?

☒ Yes
 ☐ No
 ☐ Not Applicable

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes
Samples CH-CCR-M64-0520 and CH-CCR-FD05-0520					
Chloride	400 mg/L	3,900	4,100	5.0%	
Sulfate	400 mg/L	3,900	4,100	5.0%	
Boron	0.050 mg/L	1.2	1.3	8.0%	
Calcium	2.0 mg/L	520	510	1.9%	
Iron	0.10 mg/L	5.5	5.5	0.0%	
Lithium	0.20 mg/L	0.47	0.47	0.0%	
Magnesium	2.0 mg/L	230	220	4.4%	
Manganese	0.010 mg/L	2.2	2.3	4.4%	
Potassium	0.50 mg/L	20	19	5.1%	
Sodium	5.0 mg/L	3,400	3,800	11%	
Arsenic	0.00050 mg/L	0.00086	0.00050 U	NC	\pm RL
Barium	0.00075 mg/L	0.013	0.012	8.0%	
Molybdenum	0.00050 mg/L	0.0042	0.0043	2.4%	
Alkalinity as CaCO ₃	6.0 mg/L	490	470	4.2%	
Bicarbonate Alkalinity	6.0 mg/L	490	470	4.2%	
Total Dissolved Solids	200 mg/L	12,000	12,000	0.0%	
pH	1.7 SU	7.3	7.6	4.0%	
Ammonia	0.50 mg/L	0.73	0.75	2.7%	
TOC	0.50 mg/L	5.1	5.5	7.5%	
TOC - Duplicates	0.50 mg/L	5.1	5.5	7.5%	
TOC - Quad	0.50 mg/L	5.1	5.5	7.5%	
Dissolved Iron	0.10 mg/L	5.0	4.8	4.1%	
Dissolved Manganese	0.010 mg/L	1.9	1.9	0.0%	
Dissolved Arsenic	0.00050 mg/L	0.00050	0.00093	60%	\pm RL
DOC	1.0 mg/L	5.0	5.5	9.5%	
DOC - Duplicate	1.0 mg/L	5.0	5.4	7.7%	

Cholla CCR Data Review

Notes:

± RL = The difference between analyte concentrations is less than the reporting limit, indicating acceptable sampling and analytical precision.

mg/L = milligrams per liter

SU = standard units

10. Did the laboratory perform duplicate analyses on project-specific samples?

☒ Yes

☐ No

If Yes:

Sample ID	Analysis
CH-CCR-M46-0520	Alkalinity, Total Dissolved Solids, pH
CH-CCR-W126-0520	Alkalinity
CH-CCR-W309-0520	DOC
CH-CCR-FD05-0520	pH

a. Is the RPD between duplicate results within laboratory-specified limits or is the difference between analyte concentrations less than the reporting limit?

☒ Yes

☐ No

☐ Not Applicable

If No:

Sample ID	Analyte	Effect on Data Usability

Cholla CCR Data Review

11. Are non-detect results sufficiently low to meet EPA primary drinking water criteria?

Yes

No

Analyte	List	MCL	Alternative GWPS	Units
Antimony	Appendix IV	0.006	--	mg/L
Arsenic	Appendix IV	0.010	--	mg/L
Barium	Appendix IV	2	--	mg/L
Beryllium	Appendix IV	0.004	--	mg/L
Boron	Appendix III	--	--	mg/L
Cadmium	Appendix IV	0.005	--	mg/L
Calcium	Appendix III	--	--	mg/L
Chloride	Appendix III	--	--	mg/L
Chromium	Appendix IV	0.1	--	mg/L
Cobalt	Appendix IV	--	0.006	mg/L
Fluoride	Appendix III/IV	4.0	--	mg/L
Lead	Appendix IV	--	0.015	mg/L
Lithium	Appendix IV	--	0.040	mg/L
Mercury	Appendix IV	0.002	--	mg/L
Molybdenum	Appendix IV	--	0.1	mg/L
pH	Appendix III	--	--	s.u.
Radium 226 + Radium 228	Appendix IV	5	--	pCi/L
Selenium	Appendix IV	0.05	--	mg/L
Sulfate	Appendix III	--	--	mg/L
Total Dissolved Solids	Appendix III	--	--	mg/L
Thallium	Appendix IV	0.002	--	mg/L

If No, list affected samples and analytes.

Sample ID	Analyte	Reporting Limit

Cholla CCR Data Review

12. Are total analyte concentrations greater than dissolved analyte concentrations or are differences between total and dissolved results less than the reporting limit?

☒ Yes ☐ No

If No, list affected samples and analytes.

Sample ID	Analyte	Total	Dissolved	Effect on Data Usability

Cholla CCR Data Review

Laboratory Name:	Eurofins TestAmerica, Phoenix		
Sample Delivery Group:	J141150-1	Revision Date:	2 July 2020
Validator's Name:	Marie Bevier	Reviewed By:	Denise King

Sample Summary:

Field Sample Identification	Collection Date and Time	Laboratory Sample Identification	Notes
CH-CCR-M52-0420	04/19/20 11:52	550-141150-1/2	
CH-CCR-M53-0420	04/19/20 10:04	550-141150-3/4	
CH-CCR-M55-0420	04/17/20 15:56	550-141150-5/6	
CH-CCR-M69-0420	04/19/20 13:12	550-141150-7/8	
CH-CCR-M70-0420	04/19/20 14:55	550-141150-9/10	
CH-CCR-W301-0420	04/18/20 13:37	550-141150-11/12	
CH-CCR-W302-0420	04/17/20 09:45	550-141150-13/14	
CH-CCR-W303-0420	04/18/20 14:49	550-141150-15/16	
CH-CCR-W304-0420	04/17/20 11:16	550-141150-17/18	
CH-CCR-FD03-0420	04/19/20 10:04	550-141150-19/20	Field duplicate of CH-CCR-M53-0420
CH-CCR-W305-0420	04/18/20 16:24	550-141150-21/22	
CH-CCR-W306-0420	04/19/20 08:12	550-141150-23/24	
CH-CCR-W307-0420	04/17/20 12:27	550-141150-25/26	
CH-CCR-W308-0420	04/17/20 14:18	550-141150-27/28	
CH-CCR-W314-0420	04/19/20 16:09	550-141150-29/30	
CH-CCR-W317-0420	04/16/20 16:48	550-141150-31	
CH-CCR-FD04-0420	04/19/20 08:12	550-141150-32/33	Field duplicate of CH-CCR-W306-0420

Analytical Methods:

Analyte	Analyte Group	Method
Beryllium, Boron, Calcium, Iron, Lithium, Magnesium, Manganese, Potassium, Sodium, Dissolved Manganese, Dissolved Iron	Metals	EPA 200.7
Arsenic, Barium, Cadmium, Chromium, Cobalt, Lead, Molybdenum, Selenium, Thallium, Dissolved Arsenic, Dissolved Cobalt	Metals	EPA 200.8
Chloride, Fluoride, Nitrate/Nitrite, Sulfate	Anions	EPA 300.0
Alkalinity	General Chemistry	SM 2320B
Total Dissolved Solids	General Chemistry	SM 2540C
pH	General Chemistry	SM 4500 H ⁺ B
Ammonia	General Chemistry	SM 4500 NH ₃ D
Total Organic Carbon, Dissolved Organic Carbon	General Chemistry	SM 5310B

Cholla CCR Data Review

Qualifier Definitions:

- J** The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R** The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
- U** The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- UJ** The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Sample Receipt Condition:

COC Signed and Complete?
If No, provide details.

Yes

No

Sample Login Matched COC?
If no, provide details.

Yes

No

Sample receipt temperature $\leq 6^{\circ}\text{C}$?
If no, provide details.

Yes

No

Cholla CCR Data Review

1. Samples analyzed for metals within 180 days of sampling? ☒ Yes ☐ No

2. Samples analyzed for chloride, fluoride, nitrate/nitrite, sulfate, total organic carbon, and/or dissolved organic carbon within 28 days of sampling? ☒ Yes ☐ No

3. Samples analyzed for alkalinity within 14 days of sampling? ☒ Yes ☐ No

4. Samples analyzed for total dissolved solids within 7 days of sampling? ☒ Yes ☐ No

5. Samples analyzed for pH within 15 minutes of sampling? ☐ Yes ☒ No N/A

If No:

Sample ID	Analysis	Time Between Collection And Analysis	Effect on data usability
CH-CCR-M52-0420	pH	5 days, 3 hours, 8 minutes	J-HT
CH-CCR-M53-0420	pH	5 days, 4 hours, 56 minutes	J-HT
CH-CCR-M55-0420	pH	6 days, 23 hours, 4 minutes	J-HT
CH-CCR-M69-0420	pH	5 days, 1 hour, 48 minutes	J-HT
CH-CCR-M70-0420	pH	5 days, 5 minutes	J-HT
CH-CCR-W301-0420	pH	6 days, 1 hour, 23 minutes	J-HT
CH-CCR-W302-0420	pH	7 days, 5 hours, 15 minutes	J-HT
CH-CCR-W303-0420	pH	6 days, 11 minutes	J-HT
CH-CCR-W304-0420	pH	7 days, 3 hours, 44 minutes	J-HT
CH-CCR-FD03-0420	pH	5 days, 4 hours, 56 minutes	J-HT
CH-CCR-W305-0420	pH	5 days, 22 hours, 36 minutes	J-HT
CH-CCR-W306-0420	pH	5 days, 6 hours, 48 minutes	J-HT
CH-CCR-W307-0420	pH	7 days, 2 hours, 33 minutes	J-HT
CH-CCR-W308-0420	pH	7 days, 42 minutes	J-HT
CH-CCR-W314-0420	pH	7 days, 21 hours, 37 minutes	J-HT
CH-CCR-W317-0420	pH	10 days, 20 hours, 58 minutes	J-HT
CH-CCR-FD04-0420	pH	8 days, 5 hours, 34 minutes	J-HT

Note:

HT = The maximum recommended hold time was exceeded, and the result should be considered an estimated value.

Cholla CCR Data Review

6. Target analytes detected in the blank?

Yes

☒ No

If Yes:

Detected Analyte	Concentration	Samples with concentrations less than 5 times the blank detection

7. LCS recoveries within laboratory-specified limits?

☒ Yes

No

If No:

Analyte	Recovery	Affected Samples

Cholla CCR Data Review

8. MS performed on a project-specific sample?

Yes

No

If Yes:

Spiked Sample ID	Spiked Analyte(s)
CH-CCR-M52-0420	Chloride, Fluoride, Nitrate/Nitrite, Sulfate, Arsenic, Barium, Cadmium, Chromium, Cobalt, Lead, Molybdenum, Selenium, Thallium, Ammonia, Total Organic Carbon, Dissolved: Arsenic, Cobalt, Dissolved Organic Carbon
CH-CCR-M53-0420	Dissolved Organic Carbon
CH-CCR-M55-0420	Molybdenum, Dissolved: Beryllium, Boron, Calcium, Iron, Lithium, Magnesium, Manganese, Potassium, Sodium

a. Are MS recoveries and/or precision within laboratory specified limits?

Yes

No

If No:

Sample ID	Analyte	RPD or Recovery	Accuracy or Recovery Limits	Effect on Data Usability
CH-CCR-M55-0420	Dissolved Calcium	-240%, -145%	70 to 130%	None ⁴
CH-CCR-M55-0420	Dissolved Magnesium	23%, 18%	70 to 130%	None ⁴
CH-CCR-M55-0420	Dissolved Sodium	-1615%, -1061%	70 to 130%	None ⁴
CH-CCR-M52-0420	DOC	49%, 49%	90 to 110%	J-LM

Notes:

⁴ The analyte concentration in the unspiked native sample is more than four times the spike concentration and it is not possible to assess data usability for this analyte in this sample based on MS recovery.

LM = Low matrix spike recovery. Result may be biased low.

Cholla CCR Data Review

9. Field duplicate collected?

Yes ☐ No ☒

If Yes:

Parent Sample	Field Duplicate
CH-CCR-M53-0420	CH-CCR-FD03-0420
CH-CCR-W306-0420	CH-CCR-FD04-0420

b. Is the RPD between primary and duplicate results $\leq 20\%$ or is the difference between analyte concentrations \leq the reporting limit?

Yes ☐ No ☒ Not Applicable ☐

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes
Samples CH-CCR-M53-0420 and CH-CCR-FD03-0420					
Chloride	400 mg/L	2,400	2,300	4.3%	
Fluoride	0.80 mg/L	2.1	2.1	0.0%	
Sulfate	400 mg/L	3,100	3,000	3.3%	
Beryllium	0.0010 mg/L	0.00055 J	0.00050 J	9.5%	
Boron	0.25 mg/L	3.7	3.7	0.0%	
Calcium	2.0 mg/L	610	620	1.6%	
Lithium	1.0 mg/L	0.20 U	0.27 J	NC	±RL
Magnesium	2.0 mg/L	210	210	0.0%	
Manganese	0.050 mg/L	5.2	5.0	3.9%	
Potassium	1.5 mg/L	15	12	22%	J-FD
Sodium	5.0 mg/L	1,600	1,600	0.0%	
Barium	0.00050 mg/L	0.0087	0.0088	1.1%	
Cadmium	0.00010 mg/L	0.0012	0.0012	0.0%	
Cobalt	0.0050 mg/L	0.014	0.014	0.0%	
Molybdenum	0.0025 mg/L	0.038	0.039	2.6%	
Alkalinity as CaCO ₃	6.0 mg/L	96	96	0.0%	
Bicarbonate Alkalinity	6.0 mg/L	96	96	0.0%	
Total Dissolved Solids	100 mg/L	8,200	7,800	5.0%	
pH	1.7 SU	7.5	7.4	1.3%	
TOC	0.50 mg/L	1.2	1.2	0.0%	
TOC - Duplicates	0.50 mg/L	1.1	1.2	8.7%	
TOC - Quad	0.50 mg/L	1.2	1.2	0.0%	
Dissolved Manganese	0.010 mg/L	4.8	5.0	4.1%	
Dissolved Cobalt	0.0050 mg/L	0.016	0.014	13%	
DOC	0.50 mg/L	1.2	1.3	8.0%	
DOC - Duplicate	0.50 mg/L	1.2	1.3	8.0%	
DOC - Quad	0.50 mg/L	1.2	1.3	8.0%	

Cholla CCR Data Review

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes
Samples CH-CCR-W306-0420 and CH-CCR-FD04-0420					
Chloride	400 mg/L	2,000	1,800	11%	
Fluoride	0.80 mg/L	1.1	1.5	31%	± RL
Sulfate	400 mg/L	13,000	12,000	8.0%	
Beryllium	0.0010 mg/L	0.0017	0.0017	0.0%	
Boron	0.15 mg/L	1.2	1.1	8.7%	
Calcium	2.0 mg/L	400	400	0.0%	
Lithium	0.60 mg/L	1.3	1.2	8.0%	
Magnesium	2.0 mg/L	230	230	0.0%	
Potassium	1.5 mg/L	3.6	9.7	92%	J-FD
Sodium	5.0 mg/L	5,700	5,500	3.6%	
Arsenic	0.0038 mg/L	0.0050	0.0048	4.1%	
Barium	0.0050 mg/L	0.012	0.011	8.7%	
Molybdenum	0.0025 mg/L	0.042	0.039	7.4%	
Alkalinity as CaCO ₃	6.0 mg/L	130	130	0.0%	
Bicarbonate Alkalinity	6.0 mg/L	130	130	0.0%	
TDS	200 mg/L	19,000	19,000	0.0%	
pH	1.7 SU	7.8	7.9	1.3%	
TOC	0.50 mg/L	2.4	2.5	4.1%	
TOC - Duplicates	0.50 mg/L	2.4	2.5	4.1%	
TOC - Quad	0.50 mg/L	2.4	2.5	4.1%	
Dissolved Arsenic	0.0050 mg/L	0.0055	0.0051	7.5%	
DOC	0.50 mg/L	2.6	2.7	3.8%	
DOC - Duplicate	0.50 mg/L	2.6	2.7	3.8%	
DOC - Quad	0.50 mg/L	2.6	2.7	3.8%	

Notes:

± RL = The difference between concentrations is less than the reporting limit, indicating acceptable sampling and analytical precision.

FD = Imprecision between primary and field duplicate results

mg/L = milligrams per liter

SU = standard units

Cholla CCR Data Review

10. Did the laboratory perform duplicate analyses on project-specific samples?

☒ Yes ☐ No

If Yes:

Sample ID	Analysis
CH-CCR-M52-0420	Alkalinity, Total Dissolved Solids
CH-CCR-M53-0420	Total Dissolved Solids
CH-CCR-M70-0420	pH
CH-CCR-W304-0420	Alkalinity
CH-CCR-W314-0420	pH

c. Is the RPD between duplicate results within laboratory-specified limits or is the difference between analyte concentrations less than the reporting limit?

Yes ☒ No ☐ Not Applicable

If No:

Sample ID	Analyte	Effect on Data Usability
CH-CCR-M52-0420	Alkalinity	J-HD
CH-CCR-M52-0420	Bicarbonate Alkalinity	J-HD

Note:

HD = Imprecision between primary and laboratory duplicate results.

Cholla CCR Data Review

11. Are non-detect results sufficiently low to meet EPA primary drinking water criteria?

Yes

No

Analyte	List	MCL	Alternative GWPS	Units
Antimony	Appendix IV	0.006	--	mg/L
Arsenic	Appendix IV	0.010	--	mg/L
Barium	Appendix IV	2	--	mg/L
Beryllium	Appendix IV	0.004	--	mg/L
Boron	Appendix III	--	--	mg/L
Cadmium	Appendix IV	0.005	--	mg/L
Calcium	Appendix III	--	--	mg/L
Chloride	Appendix III	--	--	mg/L
Chromium	Appendix IV	0.1	--	mg/L
Cobalt	Appendix IV	--	0.006	mg/L
Fluoride	Appendix III/IV	4.0	--	mg/L
Lead	Appendix IV	--	0.015	mg/L
Lithium	Appendix IV	--	0.040	mg/L
Mercury	Appendix IV	0.002	--	mg/L
Molybdenum	Appendix IV	--	0.1	mg/L
pH	Appendix III	--	--	s.u.
Radium 226 + Radium 228	Appendix IV	5	--	pCi/L
Selenium	Appendix IV	0.05	--	mg/L
Sulfate	Appendix III	--	--	mg/L
Total Dissolved Solids	Appendix III	--	--	mg/L
Thallium	Appendix IV	0.002	--	mg/L

If No, list affected samples and analytes.

Sample ID	Analyte	Reporting/Detection Limits
CH-CCR-M53-0420	Lithium	1.0/0.20 mg/L
CH-CCR-M52-0420	Lithium	1.0/0.20 mg/L
CH-CCR-W302-0420	Lithium	1.0/0.20 mg/L
CH-CCR-W303-0420	Lithium	1.0/0.20 mg/L
CH-CCR-M55-0420	Lithium	1.0/0.20 mg/L
CH-CCR-M69-0420	Lithium	1.0/0.20 mg/L
CH-CCR-M70-0420	Lithium	1.0/0.20 mg/L

Cholla CCR Data Review

12. Are total analyte concentrations greater than dissolved analyte concentrations or are differences between total and dissolved results less than the reporting limit?

Yes

☒ No

If No, list affected samples and analytes.

Sample ID	Analyte	Total	Dissolved	Effect on Data Usability
CH-CCR-W302-0420	Organic Carbon	0.64 mg/L	1.2 mg/L	J-TD

Note:

TD = Dissolved concentration is significantly greater than the total concentration.

13. Are there other quality control issues?

☒ Yes

No

If Yes, provide details.

The laboratory used an E4 qualifier to indicate the detected concentration is less than the reporting limit. Wood agrees that these results are quantitatively uncertain and has J qualified all of the laboratory's E4 qualified results. (J-DL)

Note:

DL = The detected concentrations is less than the reporting limit.

Cholla CCR Data Review

Laboratory Name:	Eurofins TestAmerica Phoenix/Eurofins TestAmerica Denver		
Sample Delivery Group:	550-151754-1	Review Date:	12/09/2020
Validator's Name:	Marie Bevier	Reviewed By:	Denise King

Sample Summary:

Field Sample Identification	Collection Date and Time	Laboratory Sample Identification	Notes
CH-CCR-M44D-1020	10/24/2020 13:53	550-151754-1	
CH-CCR-M46-1020	10/25/2020 15:27	550-151754-2/3	
CH-CCR-M50-1020	10/25/2020 8:33	550-151754-4/5	
CH-CCR-M51-1020	10/25/2020 9:40	550-151754-6/7	
CH-CCR-M64-1020	10/24/2020 11:45	550-151754-8/9	
CH-CCR-M65-1020	10/25/2020 14:12	550-151754-10/11	
CH-CCR-M66-1020	10/25/2020 12:45	550-151754-12/13	
CH-CCR-M67-1020	10/25/2020 16:21	550-151754-14/15	
CH-CCR-W123-1020	10/26/2020 8:38	550-151754-16/17	
CH-CCR-W125-1020	10/24/2020 15:16	550-151754-18	
CH-CCR-W126-1020	10/25/2020 11:34	550-151754-19/20	
CH-CCR-FD05-1020	10/25/2020 9:40	550-151754-21/22	Field duplicate of CH-CCR-M51-1020

Analytical Methods:

Analyte	Analyte Group	Method
Beryllium, Boron, Calcium, Iron, Lithium, Manganese	Metals	EPA 200.7
Antimony, Arsenic, Cadmium, Chromium, Cobalt, lead, Molybdenum, Selenium, Thallium	Metals	EPA 200.8
Mercury	Metals	EPA 245.1
Chloride, Fluoride, Nitrate/Nitrite, Sulfate	Anions	EPA 300.0
Total Dissolved Solids (TDS)	General Chemistry	SM 2540C
pH	General Chemistry	SM 4500 H ⁺ B
Ammonia	General Chemistry	SM 4500 NH ₃ D
Total Organic Carbon (TOC) Dissolved Organic Carbon (DOC)	General Chemistry	SM 5310B

Cholla CCR Data Review

Qualifier Definitions:

- J** The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R** The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
- U** The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- UU** The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Sample Receipt Condition:

COC Signed and Complete?
If No, provide details.

Yes

No

Sample Login Matched COC?

Yes

No

If no, provide details.

Sample receipt temperature $\leq 6^{\circ}\text{C}$?

Yes

No

If no, provide details.

Cholla CCR Data Review

1. Samples analyzed for metals within 180 days of sampling? ☒ Yes ☐ No

2. Samples analyzed for ammonia, chloride, DOC, fluoride, mercury, nitrate/nitrite, sulfate, and TOC within 28 days of sampling? ☒ Yes ☐ No

3. Samples analyzed for TDS within 7 days of sampling? ☒ Yes ☐ No

4. Samples analyzed for pH within 15 minutes of sampling? ☐ Yes ☒ No N/A

If No:

Sample ID	Analysis	Time Between Collection and Analysis	Effect on Data Usability
CH-CCR-M44D-1020	pH	5 days, 22 hours, 37 minutes	J-HT
CH-CCR-M46-1020	pH	4 days, 21 hours, 3 minutes	J-HT
CH-CCR-M50-1020	pH	5 days, 3 hours, 57 minutes	J-HT
CH-CCR-M51-1020	pH	5 days, 2 hours, 50 minutes	J-HT
CH-CCR-M64-1020	pH	6 days, 45 minutes	J-HT
CH-CCR-M65-1020	pH	4 days, 22 hours, 18 minutes	J-HT
CH-CCR-M66-1020	pH	4 days, 23 hours, 45 minutes	J-HT
CH-CCR-M67-1020	pH	4 days, 20 hours, 9 minutes	J-HT
CH-CCR-W123-1020	pH	4 days, 3 hours, 52 minutes	J-HT
CH-CCR-W125-1020	pH	9 days, 2 hours, 44 minutes	J-HT
CH-CCR-W126-1020	pH	8 days, 6 hours, 26 minutes	J-HT
CH-CCR-FD05-1020	pH	8 days, 8 hours, 20 minutes	J-HT

Note:

HT = The maximum recommended hold time was exceeded, and the result should be considered an estimated value.

Cholla CCR Data Review

5. Target analytes detected in the blank?

☒ Yes

☐ No

If Yes:

Detected Analyte	Concentration	Samples with concentrations less than 5 times the blank detection
Beryllium	0.000740 mg/L	CH-CCR-M44D-1020 CH-CCR-W125-1020 (U-MB)
Boron	0.00509 mg/L	
Calcium	0.0263 mg/L	
Manganese	0.000420 mg/L	
Dissolved Arsenic	0.000513 mg/L	CH-CCR-M64-1020
Antimony	0.0000800 mg/L	CH-CCR-M46-1020 CH-CCR-M50-1020 CH-CCR-M51-1020 CH-CCR-M64-1020 CH-CCR-M65-1020 CH-CCR-M66-1020 CH-CCR-M67-1020 CH-CCR-W126-1020 CH-CCR-FD05-1020 (U-MB)
Thallium	0.0000160 mg/L	CH-CCR-M46-1020 CH-CCR-M50-1020 CH-CCR-M65-1020 CH-CCR-M67-1020 (U-MB)
Arsenic	0.000373 mg/L	
Selenium	0.000460 mg/L	CH-CCR-M44D-1020 CH-CCR-M67-1020 CH-CCR-W125-1020 (U-MB)

Note:

MB = The same analyte was detected in the sample and its associated blank and the concentration detected in the sample is less than five times the concentration detected in the blank.

6. LCS recoveries and/or precision within laboratory-specified limits?

☒ Yes

☐ No

If No:

Affected Sample(s)	Analyte	Recovery/Precision	Recovery/Precision Limits	Effect on Data Usability

Cholla CCR Data Review

7. MS performed on a project-specific sample?

Yes ☒ No ☐

If Yes:

Spiked Sample ID	Spiked Analyte(s)
CH-CCR-FD05-1020	Chloride, Fluoride, Sulfate
CH-CCR-M46-1020	Arsenic, Beryllium, Boron, Calcium, Cobalt, DOC, Iron, Manganese
CH-CCR-M50-1020	Iron, Manganese, Mercury
CH-CCR-M51-1020	DOC
CH-CCR-M64-1020	Mercury
CH-CCR-W126-1020	Antimony, Arsenic, Barium, Cadmium, Chromium, Cobalt, Lead, Molybdenum, Selenium, Thallium

a. Are MS recoveries and/or precision within laboratory specified limits?

Yes ☐ No ☒

If No:

Sample ID	Analyte	Recovery/ Precision	Recovery/ Precision Limits	Effect on Data Usability
CH-CCR-FD05-1020	Chloride	122% (MSD)	80 to 120%	CH-CCR-M51-1020 and CH-CCR-FD05-1020 (J-HM)
CH-CCR-M46-1020	Calcium	-314%, -292%	70 to 130%	None-NA4
CH-CCR-M46-1020	DOC	70%, 85%	90 to 110%	J-LM
CH-CCR-M51-1020	DOC	89% (MSD)	90 to 110%	CH-CCR-M51-1020 and CH-CCR-FD05-1020 (J-LM)
CH-CCR-W126-1020	Barium Cobalt	230%, 233% 189%, 189%	70 to 130%	J-HM

Notes:

HM = High matrix spike recovery. Result may be biased high.

LM = Low MS recovery. Result may be biased low.

NA4 = The concentration detected in the unspiked native sample is greater than four times the spike concentration and it is not possible to assess data usability for this analyte in this sample based on MS recovery.

Cholla CCR Data Review

8. Field duplicate collected?

Yes No

If Yes:

Parent Sample	Field Duplicate
CH-CCR-M51-1020	CH-CCR-FD05-1020

b. Is the RPD between primary and duplicate results $\leq 20\%$ or is the difference between analyte concentrations \leq the reporting limit?

Yes No N/A

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes
Samples CH-CCR-M51-1020 and CH-CCR-FD05-1020					
Chloride	400 mg/L	5,600	4,900	13%	
Fluoride	0.80 mg/L	5.9	6.0	1.7%	
Sulfate	400 mg/L	3,100	2,800	10%	
Lithium	0.020 mg/L	0.47	0.47	0.0%	
Boron	0.050 mg/L	30	30	0.0%	
Calcium	2.0 mg/L	840	850	1.2%	
Iron	0.10 mg/L	0.041 J	0.022 J	60%	± RL
Manganese	0.010 mg/L	0.92	0.95	3.2%	
Antimony	0.00020 mg/L	0.00010 J	0.00011 J	10%	
Arsenic	0.0020 mg/L	0.028	0.027	3.6%	
Barium	0.0010 mg/L	0.0085	0.0086	1.2%	
Cadmium	0.00020 mg/L	0.00017 J	0.00013 J	27%	± RL
Chromium	0.0020 mg/L	0.0060	0.0073	20%	
Cobalt	0.0010 mg/L	0.0015	0.0012	22%	± RL
Lead	0.0010 mg/L	0.00053 J	0.0010 U	NC	± RL
Molybdenum	0.0010 mg/L	0.12	0.12	0.0%	
Thallium	0.00020 mg/L	0.00019 J	0.00019 J	0.0%	
Total Dissolved Solids	200 mg/L	11,000	11,000	0.0%	
pH	1.7 SU	7.3	7.3	0.0%	
Ammonia	0.50 mg/L	0.50 U	0.36 J	NC	± RL
TOC	0.50 mg/L	1.5	1.5	0.0%	
Dissolved Iron	0.10 mg/L	0.10 U	0.024 J	NC	± RL
Dissolved Manganese	0.010 mg/L	0.97	1.0	3.0%	
Dissolved Arsenic	0.0010 mg/L	0.027	0.025	7.7%	
Dissolved Cobalt	0.0010 mg/L	0.0012	0.0011	8.7%	
DOC	0.50 mg/L	1.6	1.6	0.0%	

Cholla CCR Data Review

Notes:

± RL = The difference between analyte concentrations is less than the reporting limit, indicating acceptable sampling and analytical precision.

mg/L = milligrams per liter

NC = not calculable

SU = standard units

9. Did the laboratory perform duplicate analyses on project-specific samples?

Yes

No

If Yes:

Sample ID	Analysis
CH-CCR-M44D-1020	pH
CH-CCR-W125-1020	pH

c. Is the RPD between duplicate results within laboratory-specified limits or is the difference between analyte concentrations less than the reporting limit?

Yes

No

N/A

If No:

Sample ID	Analyte	Effect on Data Usability

Cholla CCR Data Review

10. Are non-detect results sufficiently low to meet EPA primary drinking water criteria?

Yes ☒ No ☐

Analyte	List	MCL	Alternative GWPS	Units
Antimony	Appendix IV	0.006	--	mg/L
Arsenic	Appendix IV	0.010	--	mg/L
Barium	Appendix IV	2	--	mg/L
Beryllium	Appendix IV	0.004	--	mg/L
Boron	Appendix III	--	--	mg/L
Cadmium	Appendix IV	0.005	--	mg/L
Calcium	Appendix III	--	--	mg/L
Chloride	Appendix III	--	--	mg/L
Chromium	Appendix IV	0.1	--	mg/L
Cobalt	Appendix IV	--	0.006	mg/L
Fluoride	Appendix III/IV	4.0	--	mg/L
Lead	Appendix IV	--	0.015	mg/L
Lithium	Appendix IV	--	0.040	mg/L
Mercury	Appendix IV	0.002	--	mg/L
Molybdenum	Appendix IV	--	0.1	mg/L
pH	Appendix III	--	--	s.u.
Radium 226 + Radium 228	Appendix IV	5	--	pCi/L
Selenium	Appendix IV	0.05	--	mg/L
Sulfate	Appendix III	--	--	mg/L
Total Dissolved Solids	Appendix III	--	--	mg/L
Thallium	Appendix IV	0.002	--	mg/L

If No, list affected samples and analytes.

Sample ID	Analyte	Reporting Limit

11. Are total analyte concentrations greater than dissolved analyte concentrations or are differences between total and dissolved results less than the reporting limit?

Yes ☐ No ☒ N/A ☐

If No, list affected samples and analytes.

Sample ID	Analyte	Total	Dissolved	Effect on Data Usability
CH-CCR-M66-1020	Arsenic	0.0019	0.0051	J-TD

Note:

TD = dissolved concentration is significantly higher than the total concentration.

Cholla CCR Data Review

12. Other quality control issues not addressed above?

☒ Yes

☐ No

According to the laboratory's notes, beryllium recovery was high in a continuing calibration verification (CCV) associated with the analysis of the samples reviewed in this report. Beryllium detections were U qualified as being not detected due to method blank detections and Wood did not qualify any results based on the high CCV recovery.

Cholla CCR Data Review

Laboratory Name:	Eurofins TestAmerica Phoenix		
Sample Delivery Group:	550-151757-1	Review Date:	12/09/2020
Validator's Name:	Marie Bevier	Reviewed By:	Denise King

Sample Summary:

Field Sample Identification	Collection Date and Time	Laboratory Sample Identification	Notes
CH-CCR-M54-1020	10/21/20 15:58	550-151757-1	
CH-CCR-M59-1020	10/21/20 15:08	550-151757-2	
CH-CCR-M60-1020	10/21/20 14:07	550-151757-3	
CH-CCR-M61-1020	10/21/20 13:20	550-151757-4	
CH-CCR-FD01-1020	10/21/20 14:07	550-151757-5	Field duplicate of CH-CCR-M60-1020

Analytical Methods:

Analyte	Analyte Group	Method
Boron, Calcium	Metals	EPA 200.7
Chloride, Fluoride, Sulfate	Anions	EPA 300.0
Total Dissolved Solids	General Chemistry	SM 2540C
pH	General Chemistry	SM 4500 H ⁺ B

Qualifier Definitions:

- J** The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R** The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
- U** The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- UJ** The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Cholla CCR Data Review

Sample Receipt Condition:

COC Signed and Complete?

Yes

No

If No, provide details.

The COC specifies MS and MSD analyses for samples CH-CCR-M54-1020 and CH-CCR-FD01-1020, but according to the case narrative there were no extra sample contains for MS and MSD analyses on sample CH-CCR-M54-1020. The COC has only two containers recorded for sample CH-CCR-FD01-1020 and indicates that the sample was field filtered.

Sample Login Matched COC?

Yes

No

If no, provide details.

Sample CH-CCR-M54-100 was not logged in for MS and MSD analyses because of insufficient sample volume.

Sample receipt temperature $\leq 6^{\circ}\text{C}$?

Yes

No

If no, provide details.

Cholla CCR Data Review

1. Samples analyzed for metals within 180 days of sampling? ☒ Yes ☐ No

2. Samples analyzed for chloride, fluoride, and sulfate within 28 days of sampling? ☒ Yes ☐ No

3. Samples analyzed for total dissolved solids within 7 days of sampling? ☒ Yes ☐ No

4. Samples analyzed for pH within 15 minutes of sampling? ☐ Yes ☒ No N/A

If No:

Sample ID	Analysis	Time Between Collection and Analysis	Effect on Data Usability
CH-CCR-M54-1020	pH	8 days, 20 hours, 32 minutes	J-HT
CH-CCR-M59-1020	pH	8 days, 21 hours, 22 minutes	J-HT
CH-CCR-M60-1020	pH	8 days, 22 hours, 23 minutes	J-HT
CH-CCR-M61-1020	pH	8 days, 23 hours, 10 minutes	J-HT
CH-CCR-FD01-1020	pH	8 days, 22 hours, 23 minutes	J-HT

Note:

HT = The maximum recommended hold time was exceeded, and the result should be considered an estimated value.

5. Target analytes detected in the blank? ☐ Yes ☒ No

If Yes:

Detected Analyte	Concentration	Samples with concentrations less than 5 times the blank detection

6. LCS recoveries and/or precision within laboratory-specified limits? ☒ Yes ☐ No

If No:

Affected Sample(s)	Analyte	Recovery/Precision	Recovery/Precision Limits	Effect on Data Usability

Cholla CCR Data Review

7. MS performed on a project-specific sample?

Yes

No

If Yes:

Spiked Sample ID	Spiked Analyte(s)
CH-CCR-FD01-1020	Chloride, Fluoride, Sulfate, Boron, Calcium

a. Are MS recoveries and/or precision within laboratory specified limits?

Yes

No

If No:

Sample ID	Analyte	Recovery/ Precision	Recovery/Precision Limits	Effect on Data Usability
CH-CCR-FD01-1020	Fluoride	124% (MS)	80 to 120%	J qualify the fluoride results from samples CH-CCR-M60-1020 and CH-CCR-FD01-1020 (J-HM)

Notes:

HM = High matrix spike recovery. Result may be biased high.

MS = matrix spike

Cholla CCR Data Review

8. Field duplicate collected?

Yes No

If Yes:

Parent Sample	Field Duplicate
CH-CCR-M60-1020	CH-CCR-FD01-1020

a. Is the RPD between primary and duplicate results $\leq 20\%$ or is the difference between analyte concentrations \leq the reporting limit?

Yes No N/A

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes
Samples CH-CCR-M60-1020 and CH-CCR-FD01-1020					
Chloride	300 mg/L	1,400	1,200	15%	
Fluoride	0.60 mg/L	1.4	1.5	6.9%	
Sulfate	150 mg/L	340	340	0.0%	
Boron	0.050 mg/L	0.48	0.48	0.0%	
Calcium	2.0 mg/L	82	83	1.2%	
TDS	100 mg/L	2,900	2,900	0.0%	
pH	1.7 SU	7.5	7.4	1.3%	

Notes:

mg/L = milligrams per liter

SU = standard units

9. Did the laboratory perform duplicate analyses on project-specific samples?

Yes No

If Yes:

Sample ID	Analysis
CH-CCR-FD01-1020	Fluoride, Chloride, Sulfate, TDS
CH-CCR-M54-1020	pH

a. Is the RPD between duplicate results within laboratory-specified limits or is the difference between analyte concentrations less than the reporting limit?

Yes No N/A

If No:

Sample ID	Analyte	Effect on Data Usability

Cholla CCR Data Review

10. Are non-detect results sufficiently low to meet EPA primary drinking water criteria?

Yes

No

Analyte	List	MCL	Alternative GWPS	Units
Antimony	Appendix IV	0.006	--	mg/L
Arsenic	Appendix IV	0.010	--	mg/L
Barium	Appendix IV	2	--	mg/L
Beryllium	Appendix IV	0.004	--	mg/L
Boron	Appendix III	--	--	mg/L
Cadmium	Appendix IV	0.005	--	mg/L
Calcium	Appendix III	--	--	mg/L
Chloride	Appendix III	--	--	mg/L
Chromium	Appendix IV	0.1	--	mg/L
Cobalt	Appendix IV	--	0.006	mg/L
Fluoride	Appendix III/IV	4.0	--	mg/L
Lead	Appendix IV	--	0.015	mg/L
Lithium	Appendix IV	--	0.040	mg/L
Mercury	Appendix IV	0.002	--	mg/L
Molybdenum	Appendix IV	--	0.1	mg/L
pH	Appendix III	--	--	s.u.
Radium 226 + Radium 228	Appendix IV	5	--	pCi/L
Selenium	Appendix IV	0.05	--	mg/L
Sulfate	Appendix III	--	--	mg/L
Total Dissolved Solids	Appendix III	--	--	mg/L
Thallium	Appendix IV	0.002	--	mg/L

If No, list affected samples and analytes.

Sample ID	Analyte	Reporting Limit

11. Are total analyte concentrations greater than dissolved analyte concentrations or are differences between total and dissolved results less than the reporting limit?

Yes

No

N/A

If No, list affected samples and analytes.

Sample ID	Analyte	Total	Dissolved	Effect on Data Usability

Cholla CCR Data Review

Laboratory Name:	Eurofins TestAmerica Phoenix/Eurofins TestAmerica Denver		
Sample Delivery Group:	550-151758-1	Review Date:	12/10/2020
Validator's Name:	Marie Bevier	Reviewed By:	Denise King

Sample Summary:

Field Sample Identification	Collection Date and Time	Laboratory Sample Identification	Notes
CH-CCR-M52-1020	10/22/2020 15:14	550-151758-1/2	
CH-CCR-M53-1020	10/22/2020 11:33	550-151758-3/4	
CH-CCR-M55-1020	10/24/2020 9:02	550-151758-5/6	
CH-CCR-M69-1020	10/23/2020 9:47	550-151758-7/8	
CH-CCR-M70-1020	10/23/2020 7:57	550-151758-9/10	
CH-CCR-W301-1020	10/22/2020 9:05	550-151758-11/12	
CH-CCR-W302-1020	10/23/2020 12:50	550-151758-13/14	
CH-CCR-W303-1020	10/22/2020 10:16	550-151758-15/16	
CH-CCR-W304-1020	10/23/2020 14:05	550-151758-17/18	
CH-CCR-FD03-1020	10/23/2020 7:57	550-151758-19/20	Field duplicate of CH-CCR-M70-1020
CH-CCR-W305-1020	10/22/2020 12:47	550-151758-21/22	
CH-CCR-W306-1020	10/22/2020 13:55	550-151758-23/24	
CH-CCR-W307-1020	10/23/2020 15:20	550-151758-25/26	
CH-CCR-W308-1020	10/24/2020 8:04	550-151758-27/28	
CH-CCR-W309-1020	10/24/2020 10:10	550-151758-29/30	
CH-CCR-W314-1020	10/23/2020 11:17	550-151758-31/32	
CH-CCR-W317-1020	10/21/2020 11:27	550-151758-33	
CH-CCR-FD04-1020	10/23/2020 15:20	550-151758-34/35	Field duplicate of CH-CCR-W307-1020

Analytical Methods:

Analyte	Analyte Group	Method
Beryllium, Boron, Calcium, Iron, Lithium, Manganese	Metals	EPA 200.7
Antimony, Arsenic, Cadmium, Chromium, Cobalt, lead, Molybdenum, Selenium, Thallium	Metals	EPA 200.8
Mercury	Metals	EPA 245.1
Chloride, Fluoride, Nitrate/Nitrite, Sulfate	Anions	EPA 300.0
Total Dissolved Solids (TDS)	General Chemistry	SM 2540C
pH	General Chemistry	SM 4500 H ⁺ B
Ammonia	General Chemistry	SM 4500 NH ₃ D
Total Organic Carbon (TOC) Dissolved Organic Carbon (DOC)	General Chemistry	SM 5310B

Cholla CCR Data Review

Qualifier Definitions:

- J** The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R** The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
- U** The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- UU** The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Sample Receipt Condition:

COC Signed and Complete?
If No, provide details.

Yes

No

Sample Login Matched COC?

Yes

No

If no, provide details.

Sample receipt temperature $\leq 6^{\circ}\text{C}$?

Yes

No

If no, provide details.

Cholla CCR Data Review

1. Samples analyzed for metals within 180 days of sampling? ☒ Yes ☐ No

2. Samples analyzed for ammonia, chloride, DOC, fluoride, mercury, nitrate/nitrite, sulfate, and TOC within 28 days of sampling? ☒ Yes ☐ No

3. Samples analyzed for TDS within 7 days of sampling? ☒ Yes ☐ No

4. Samples analyzed for pH within 15 minutes of sampling? ☐ Yes ☒ No N/A

If No:

Sample ID	Analysis	Time Between Collection and Analysis	Effect on Data Usability
CH-CCR-M52-1020	pH	11 days, 2 hours, 46 minutes	J-HT
CH-CCR-M53-1020	pH	11 days, 6 hours, 27 minutes	J-HT
CH-CCR-M55-1020	pH	11 days, 7 hours, 8 minutes	J-HT
CH-CCR-M69-1020	pH	12 days, 6 hours, 23 minutes	J-HT
CH-CCR-M70-1020	pH	12 days, 8 hours, 13 minutes	J-HT
CH-CCR-W301-1020	pH	13 days, 7 hours, 5 minutes	J-HT
CH-CCR-W302-1020	pH	12 days, 3 hours, 20 minutes	J-HT
CH-CCR-W303-1020	pH	13 days, 5 hours, 54 minutes	J-HT
CH-CCR-W304-1020	pH	12 days, 2 hours, 5 minutes	J-HT
CH-CCR-FD03-1020	pH	12 days, 8 hours, 13 minutes	J-HT
CH-CCR-W305-1020	pH	13 days, 3 hours, 23 minutes	J-HT
CH-CCR-W306-1020	pH	13 days, 2 hours, 15 minutes	J-HT
CH-CCR-W307-1020	pH	12 days, 50 minutes	J-HT
CH-CCR-W308-1020	pH	11 days, 8 hours, 6 minutes	J-HT
CH-CCR-W309-1020	pH	11 days, 6 hours	J-HT
CH-CCR-W314-1020	pH	12 days, 4 hours, 53 minutes	J-HT
CH-CCR-W317-1020	pH	14 days, 4 hours, 43 minutes	J-HT
CH-CCR-FD04-1020	pH	12 days, 50 minutes	J-HT

Note:

HT = The maximum recommended hold time was exceeded, and the result should be considered an estimated value.

Cholla CCR Data Review

5. Target analytes detected in the blank?

Yes

☒ No

If Yes:

Detected Analyte	Concentration	Samples with concentrations less than 5 times the blank detection

Note:

MB = The same analyte was detected in the sample and its associated blank and the concentration detected in the sample is less than five times the concentration detected in the blank.

6. LCS recoveries and/or precision within laboratory-specified limits?

☒ Yes

No

If No:

Affected Sample(s)	Analyte	Recovery/Precision	Recovery/Precision Limits	Effect on Data Usability

Cholla CCR Data Review

7. MS performed on a project-specific sample?

Yes

No

If Yes:

Spiked Sample ID	Spiked Analyte(s)
CH-CCR-M52-1020	Nitrate/Nitrite, Dissolved Arsenic and Cobalt
CH-CCR-W303-1020	Lithium
CH-CCR-W309-1020	Nitrate/Nitrite, Dissolved Arsenic and Cobalt
CH-CCR-W317-1020	Beryllium, Boron, Calcium, Iron, Manganese
CH-CCR-FD04-1020	Iron, Manganese, TOC
CH-CCR-W305-1020	DOC

a. Are MS recoveries and/or precision within laboratory specified limits?

Yes

No

If No:

Sample ID	Analyte	Recovery/ Precision	Recovery/ Precision Limits	Effect on Data Usability
CH-CCR-W317-1020	Calcium	44%, 63%, 64%, 68%	70 to 130%	NA4
CH-CCR-FD04-1020	TOC	88%, 88%	90 to 110%	CH-CCR-FD04-1020 CH-CCR-W307-1020 (J-LM)
CH-CCR-W305-1020	DOC	85% (MSD)	90 to 110%	J-LM

Notes:

LM = Low MS recovery. Result may be biased low.

NA4 = The concentration detected in the unspiked native sample is greater than four times the spike concentration and it is not possible to assess data usability for this analyte in this sample based on MS recovery.

Cholla CCR Data Review

8. Field duplicate collected?

Yes No

If Yes:

Parent Sample	Field Duplicate
CH-CCR-M70-1020	CH-CCR-FD03-1020
CH-CCR-W307-1020	CH-CCR-FD04-1020

b. Is the RPD between primary and duplicate results $\leq 20\%$ or is the difference between analyte concentrations \leq the reporting limit?

Yes No N/A

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes
Samples CH-CCR-M70-1020 and CH-CCR-FD03-1020					
Chloride	400 mg/L	2,200	2,200	0.0%	
Fluoride	0.80 mg/L	1.1	1.1	0.0%	
Nitrate Nitrite	0.25 mg/L	0.40	0.25 U	NC	\pm RL
Sulfate	400 mg/L	2,600	2,600	0.0%	
Lithium	0.020 mg/L	0.20	0.19	5.1%	
Boron	0.050 mg/L	2.1	2.1	0.0%	
Calcium	2.0 mg/L	660	680	3.0%	
Manganese	0.010 mg/L	1.8	1.8	0.0%	
Arsenic	0.0010 mg/L	0.0013	0.0020	42%	\pm RL
Barium	0.0010 mg/L	0.013	0.013	0.0%	
Cadmium	0.00020 mg/L	0.00038	0.00042	10%	
Cobalt	0.0010 mg/L	0.022	0.022	0.0%	
Lead	0.0010 mg/L	0.0025	0.0022	13%	
Molybdenum	0.0010 mg/L	0.031	0.030	3.3%	
Selenium	0.0015 mg/L	0.0028	0.0027	3.6%	
Total Dissolved Solids	100 mg/L	6,900	6,900	0.0%	
pH	1.7 SU	7.4	7.4	0.0%	
TOC	0.50 mg/L	1.1	1.0	9.5%	
Dissolved Manganese	0.010 mg/L	1.7	1.6	6.1%	
Dissolved Arsenic	0.0020 mg/L	0.0032	0.0020 U	NC	\pm RL
Dissolved Cobalt	0.0020 mg/L	0.023	0.021	9.1%	
DOC	0.50 mg/L	1.2	1.1	8.7%	

Cholla CCR Data Review

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes
Samples CH-CCR-W307-1020 and CH-CCR-FD04-1020					
Chloride	400 mg/L	3,100	3,100	0.0%	
Sulfate	400 mg/L	2,800	2,800	0.0%	
Lithium	0.020 mg/L	0.26	0.26	0.0%	
Boron	0.050 mg/L	2.5	2.5	0.0%	
Calcium	2.0 mg/L	810	790	2.5%	
Iron	0.10 mg/L	0.17	0.18	5.7%	
Manganese	0.010 mg/L	0.042	0.042	0.0%	
Arsenic	0.0010 mg/L	0.0014	0.0014	0.0%	
Barium	0.0010 mg/L	0.013	0.013	0.0%	
Cadmium	0.00020 mg/L	0.00064	0.00056	13%	
Chromium	0.0020 mg/L	0.013	0.013	0.0%	
Cobalt	0.0010 mg/L	0.069	0.070	1.4%	
Lead	0.0010 mg/L	0.0011	0.0011	0.0%	
Molybdenum	0.0010 mg/L	0.018	0.017	5.7%	
Selenium	0.0010 mg/L	0.0024	0.0024	0.0%	
Total Dissolved Solids	100 mg/L	8,100	8,000	1.2%	
pH	1.7 SU	7.2	7.3	1.4%	
TOC	0.50 mg/L	1.1	1.1	0.0%	
Dissolved Iron	0.10 mg/L	0.16	0.17	6.1%	
Dissolved Manganese	0.010 mg/L	0.041	0.041	0.0%	
Dissolved Arsenic	0.0020 mg/L	0.0022	0.0020	9.5%	
Dissolved Cobalt	0.0010 mg/L	0.069	0.074	7.0%	
DOC	0.50 mg/L	1.3	1.2	8.0%	

Notes:

± RL = The difference between analyte concentrations is less than the reporting limit, indicating acceptable sampling and analytical precision.

mg/L = milligrams per liter

NC = not calculable

SU = standard units

Cholla CCR Data Review

9. Did the laboratory perform duplicate analyses on project-specific samples?

☒ Yes

☐ No

If Yes:

Sample ID	Analysis
CH-CCR-W317-1020	TDS
CH-CCR-M55-1020	TDS, pH
CH-CCR-W307-1020	pH

c. Is the RPD between duplicate results within laboratory-specified limits or is the difference between analyte concentrations less than the reporting limit?

☒ Yes

☐ No

☐ N/A

If No:

Sample ID	Analyte	Effect on Data Usability

Cholla CCR Data Review

10. Are non-detect results sufficiently low to meet EPA primary drinking water criteria?

☒ Yes ☐ No

Analyte	List	MCL	Alternative GWPS	Units
Antimony	Appendix IV	0.006	--	mg/L
Arsenic	Appendix IV	0.010	--	mg/L
Barium	Appendix IV	2	--	mg/L
Beryllium	Appendix IV	0.004	--	mg/L
Boron	Appendix III	--	--	mg/L
Cadmium	Appendix IV	0.005	--	mg/L
Calcium	Appendix III	--	--	mg/L
Chloride	Appendix III	--	--	mg/L
Chromium	Appendix IV	0.1	--	mg/L
Cobalt	Appendix IV	--	0.006	mg/L
Fluoride	Appendix III/IV	4.0	--	mg/L
Lead	Appendix IV	--	0.015	mg/L
Lithium	Appendix IV	--	0.040	mg/L
Mercury	Appendix IV	0.002	--	mg/L
Molybdenum	Appendix IV	--	0.1	mg/L
pH	Appendix III	--	--	s.u.
Radium 226 + Radium 228	Appendix IV	5	--	pCi/L
Selenium	Appendix IV	0.05	--	mg/L
Sulfate	Appendix III	--	--	mg/L
Total Dissolved Solids	Appendix III	--	--	mg/L
Thallium	Appendix IV	0.002	--	mg/L

If No, list affected samples and analytes.

Sample ID	Analyte	Reporting Limit

11. Are total analyte concentrations greater than dissolved analyte concentrations or are differences between total and dissolved results less than the reporting limit?

☒ Yes ☐ No ☐ N/A

If No, list affected samples and analytes.

Sample ID	Analyte	Total	Dissolved	Effect on Data Usability
CH-CCR-M70-1020	Arsenic	0.0013	0.0032	J-TD

Note:

TD = dissolved concentration is significantly high than the total concentration.

APS Cholla CCR Data Review

Laboratory Name:	Radiation Safety Engineering		
Sample Delivery Group:	N/A	Review Date:	12/10/2020
Validator's Name:	Marie Bevier	Reviewed By:	Denise King

Sample Summary:

Field Sample Identification	Collection Date and Time	Laboratory Sample Identification	Notes
CH-CCR-M44D-1020	10/24/2020 13:53	63542	
CH-CCR-M46-1020	10/25/2020 15:27	63543	
CH-CCR-M50-1020	10/25/2020 8:33	63544	
CH-CCR-M51-1020	10/25/2020 9:40	63545	
CH-CCR-M64-1020	10/24/2020 11:45	63546	
CH-CCR-M65-1020	10/25/2020 14:12	63547	
CH-CCR-M66-1020	10/25/2020 12:45	63548	
CH-CCR-M67-1020	10/25/2020 16:21	63549	
CH-CCR-W123-1020	10/26/2020 8:38	63550	
CH-CCR-W125-1020	10/24/2020 15:16	63551	
CH-CCR-W126-1020	10/25/2020 11:34	63552	
CH-CCR-FD05-1020	10/25/2020 9:40	63553	Field duplicate of CH-CCR-M51-1020

Analytical Methods:

Analyte	Analyte Group	Method
Radium 226, Radium 228, Total Radium	Rad	Gamma Ray HPGE

Qualifier Definitions:

- J** The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R** The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
- U** The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- UJ** The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

APS Cholla CCR Data Review

Sample Receipt Condition:

COC Signed and Complete?

☒ Yes

☐ No

If No, provide details.

Sample Login Matched COC?

☒ Yes

☐ No

If no, provide details.

Sample receipt temperature $\leq 6^{\circ}\text{C}$?

☐ Yes

☐ No

☒ Not Applicable

1. Samples analyzed for RAD within 180 days of sampling?

☒ Yes

☐ No

If No:

Sample ID	Analysis	Time Between Collection And Analysis	Effect on data usability

Note:

HT = The maximum recommended hold time was exceeded, and the result should be considered an estimated value.

APS Cholla CCR Data Review

2. Field duplicates collected?

☒ Yes
 ☐ No

If Yes:

Parent Sample	Field Duplicate
CH-CCR-M51-1020	CH-CCR-FD05-1020

a. Is the RPD between primary and duplicate results $\leq 20\%$ or is the difference between analyte concentrations \leq the reporting limit?

☒ Yes
 ☐ No
 ☐ Not Applicable

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes
CH-CCR-M51-1020 and CH-CCR-FD05-1020					
Radium 226	0.4 pCi/L	0.4 U	0.4 ± 0.2	NC	\pm RL
Total Radium	0.4 pCi/L	0.4 U	0.4 ± 0.2	NC	\pm RL

Notes:

\pm RL = The difference between analyte concentrations is less than the reporting limit, indicating acceptable sampling and analytical precision.

NC = not calculable

pCi/L = picoCuries per liter

APS Cholla CCR Data Review

3. Are non-detect results sufficiently low to meet EPA primary drinking water criteria and/or Alternative GWPS?

Yes

No

Analyte	List	MCL	Alternative GWPS	Units
Antimony	Appendix IV	0.006	--	mg/L
Arsenic	Appendix IV	0.010	--	mg/L
Barium	Appendix IV	2	--	mg/L
Beryllium	Appendix IV	0.004	--	mg/L
Boron	Appendix III	--	--	mg/L
Cadmium	Appendix IV	0.005	--	mg/L
Calcium	Appendix III	--	--	mg/L
Chloride	Appendix III	--	--	mg/L
Chromium	Appendix IV	0.1	--	mg/L
Cobalt	Appendix IV	--	0.006	mg/L
Fluoride	Appendix III/IV	4.0	--	mg/L
Lead	Appendix IV	--	0.015	mg/L
Lithium	Appendix IV	--	0.040	mg/L
Mercury	Appendix IV	0.002	--	mg/L
Molybdenum	Appendix IV	--	0.1	mg/L
pH	Appendix III	--	--	s.u.
Radium 226 + Radium 228	Appendix IV	5	--	pCi/L
Selenium	Appendix IV	0.05	--	mg/L
Sulfate	Appendix III	--	--	mg/L
Total Dissolved Solids	Appendix III	--	--	mg/L
Thallium	Appendix IV	0.002	--	mg/L

If No, list affected samples and analytes.

Sample ID	Analyte	Reporting Limit

APS Cholla CCR Data Review

Laboratory Name:	Radiation Safety Engineering		
Sample Delivery Group:	N/A	Review Date:	12/10/2020
Validator's Name:	Marie Bevier	Reviewed By:	Denise King

Sample Summary:

Field Sample Identification	Collection Date and Time	Laboratory Sample Identification	Notes
CH-CCR-M52-1020	10/22/2020 15:14	65324	
CH-CCR-M53-1020	10/22/2020 11:33	65325	
CH-CCR-M55-1020	10/24/2020 9:02	65326	
CH-CCR-M69-1020	10/23/2020 9:47	65327	
CH-CCR-M70-1020	10/23/2020 7:57	65328	
CH-CCR-W301-1020	10/22/2020 9:05	65329	
CH-CCR-W302-1020	10/23/2020 12:50	65330	
CH-CCR-W303-1020	10/22/2020 10:16	65331	
CH-CCR-W304-1020	10/23/2020 14:05	65332	
CH-CCR-FD03-1020	10/23/2020 7:57	65333	Field duplicate of CH-CCR-M70-1020
CH-CCR-W305-1020	10/22/2020 12:47	65334	
CH-CCR-W306-1020	10/22/2020 13:55	65335	
CH-CCR-W307-1020	10/23/2020 15:20	65336	
CH-CCR-W308-1020	10/24/2020 8:04	65337	
CH-CCR-W309-1020	10/24/2020 10:10	65338	
CH-CCR-W314-1020	10/23/2020 11:17	65339	
CH-CCR-W317-1020	10/21/2020 11:27	65340	
CH-CCR-FD04-1020	10/23/2020 15:20	65341	Field duplicate of CH-CCR-W307-1020

Analytical Methods:

Analyte	Analyte Group	Method
Radium 226, Radium 228, Total Radium	Rad	Gamma Ray HPGE

Qualifier Definitions:

- J** The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R** The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
- U** The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- UJ** The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

APS Cholla CCR Data Review

Sample Receipt Condition:

COC Signed and Complete?
If No, provide details.

Yes No

Sample Login Matched COC?
If no, provide details.

Yes No

Sample receipt temperature ≤ 6°C?

Yes No Not Applicable

1. Samples analyzed for RAD within 180 days of sampling?

Yes No

If No:

Sample ID	Analysis	Time Between Collection And Analysis	Effect on data usability

Note:

HT = The maximum recommended hold time was exceeded, and the result should be considered an estimated value.

APS Cholla CCR Data Review

2. Field duplicates collected?

☒ Yes

☐ No

If Yes:

Parent Sample	Field Duplicate
CH-CCR-M70-1020	CH-CCR-FD03-1020
CH-CCR-W307-1020	CH-CCR-FD04-1020

a. Is the RPD between primary and duplicate results $\leq 20\%$ or is the difference between analyte concentrations \leq the reporting limit? ☒ Yes ☐ No ☐ Not Applicable

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes
CH-CCR-M70-1020 and CH-CCR-FD03-1020					
No detections					
CH-CCR-W307-1020 and CH-CCR-FD04-1020					
No detections					

APS Cholla CCR Data Review

3. Are non-detect results sufficiently low to meet EPA primary drinking water criteria and/or Alternative GWPS?

Yes

No

Analyte	List	MCL	Alternative GWPS	Units
Antimony	Appendix IV	0.006	--	mg/L
Arsenic	Appendix IV	0.010	--	mg/L
Barium	Appendix IV	2	--	mg/L
Beryllium	Appendix IV	0.004	--	mg/L
Boron	Appendix III	--	--	mg/L
Cadmium	Appendix IV	0.005	--	mg/L
Calcium	Appendix III	--	--	mg/L
Chloride	Appendix III	--	--	mg/L
Chromium	Appendix IV	0.1	--	mg/L
Cobalt	Appendix IV	--	0.006	mg/L
Fluoride	Appendix III/IV	4.0	--	mg/L
Lead	Appendix IV	--	0.015	mg/L
Lithium	Appendix IV	--	0.040	mg/L
Mercury	Appendix IV	0.002	--	mg/L
Molybdenum	Appendix IV	--	0.1	mg/L
pH	Appendix III	--	--	s.u.
Radium 226 + Radium 228	Appendix IV	5	--	pCi/L
Selenium	Appendix IV	0.05	--	mg/L
Sulfate	Appendix III	--	--	mg/L
Total Dissolved Solids	Appendix III	--	--	mg/L
Thallium	Appendix IV	0.002	--	mg/L

If No, list affected samples and analytes.

Sample ID	Analyte	Reporting Limit

Cholla CCR Data Review

Laboratory Name:	Eurofins TestAmerica Phoenix/Eurofins TestAmerica Denver (Eurofins)/ Radiation Safety Engineering (RSE)		
Sample Delivery Group:	550-151756-1	Review Date:	01/06/2021
Validator's Name:	Marie Bevier	Reviewed By:	Denise King

Sample Summary:

Field Sample Identification	Collection Date and Time	Laboratory Sample Identification		Notes
		Eurofins	RSE	
CH-CCR-M56-1020	10/21/20 08:18	550-151756-1	65354	
CH-CCR-M57-1020	10/21/20 09:28	550-151756-2	65355	
CH-CCR-M58-1020	10/21/20 10:19	550-151756-3	65356	
CH-CCR-M62-1020	10/20/20 16:48	550-151756-4	65357	
CH-CCR-FD02-1020	10/21/20 08:18	550-151756-5	65358	Field duplicate of CH-CCR-M56-1020

Analytical Methods:

Analyte	Analyte Group	Method
Beryllium, Lithium, Boron, Calcium, Cobalt	Metals	EPA 200.7
Antimony, Arsenic, Barium, Cadmium, Chromium, Cobalt, Lead, Molybdenum, Selenium, Thallium	Metals	EPA 200.8
Mercury	Metals	EPA 245.1
Chloride, Fluoride, Sulfate	Anions	EPA 300.0
Total Dissolved Solids	General Chemistry	SM 2540C
pH	General Chemistry	SM 4500 H ⁺ B
Radium 226, Radium 228, Total Radium	Rad	Gamma Ray HPGE

Qualifier Definitions:

- J** The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R** The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
- U** The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- UJ** The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Cholla CCR Data Review

Sample Receipt Condition:

COCs Signed and Complete?

Yes

No

If No, provide details.

Sample Login Matched COC?

Yes

No

If no, provide details.

Eurofins recorded the time for sample CH-CCR-M57-1020 as 9:25, most likely due to difficulty in interpreting the hand-written COC.

RSE recorded the collection time for CH-CCR-M58-1020 as 10:39.

Sample receipt temperature $\leq 6^{\circ}\text{C}$? (Not applicable for rad analyses)

Yes

No

If no, provide details.

Cholla CCR Data Review

1. Samples analyzed for metals and rad within 180 days of sampling?

☒ Yes

☐ No

2. Samples analyzed for chloride, fluoride, and sulfate within 28 days of sampling?

☒ Yes

☐ No

3. Samples analyzed for total dissolved solids within 7 days of sampling?

☒ Yes

☐ No

4. Samples analyzed for pH within 15 minutes of sampling?

☐ Yes

☒ No

N/A

If No:

Sample ID	Analysis	Time Between Collection and Analysis	Effect on Data Usability
CH-CCR-M56-1020	pH	12 days, 9 hours, 42 minutes	J-HT
CH-CCR-M57-1020	pH	12 days, 8 hours, 32 minutes	J-HT
CH-CCR-M58-1020	pH	12 days, 7 hours, 41 minutes	J-HT
CH-CCR-M62-1020	pH	13 days, 1 hour, 12 minutes	J-HT
CH-CCR-FD02-1020	pH	12 days, 9 hours, 42 minutes	J-HT

Note:

HT = The maximum recommended hold time was exceeded, and the result should be considered an estimated value.

5. Target analytes detected in the blanks?

☒ Yes

☐ No

If Yes:

Detected Analyte	Concentration	Samples with concentrations less than 5 times the blank detection
Beryllium	0.000740 mg/L	CH-CCR-M56-1020 and CH-CCR-M62-1020 (U-MB)
Boron	0.00509 mg/L	--
Calcium	0.0263 mg/L	--

Notes:

mg/L = milligrams per liter

MB = The analyte was detected in both the sample and an associated blank and the concentration detected in the sample is less than five times the concentration detected in the blank.

Cholla CCR Data Review

6. LCS recoveries and/or precision within laboratory-specified limits?

☒ Yes ☐ No

If No:

Affected Sample(s)	Analyte	Recovery/Precision	Recovery/Precision Limits	Effect on Data Usability

7. MS performed on a project-specific sample?

☒ Yes ☐ No

If Yes:

Spiked Sample ID	Spiked Analyte(s)
CH-CCR-M58-1020	Lithium
CH-CCR-FD02-1020	Lithium
CH-CCR-M56-1020	Mercury

a. Are MS recoveries and/or precision within laboratory specified limits?

☒ Yes ☐ No

If No:

Sample ID	Analyte	Recovery/Precision	Recovery/Precision Limits	Effect on Data Usability

Cholla CCR Data Review

8. Field duplicate collected?

Yes ☒ No ☐

If Yes:

Parent Sample	Field Duplicate
CH-CCR-M56-1020	CH-CCR-FD02-1020

a. Is the RPD between primary and duplicate results $\leq 20\%$ or is the difference between analyte concentrations \leq the reporting limit?

Yes ☐ No ☒ N/A

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes
Samples CH-CCR-M60-1020 and CH-CCR-FD01-1020					
Chloride	400 mg/L	1,900	1,800	5.4%	
Sulfate	400 mg/L	940	910	3.2%	
Lithium	0.020 mg/L	0.097	0.097	0.0%	
Boron	0.050 mg/L	0.37	0.31	18%	
Calcium	2.0 mg/L	300	300	0.0%	
Arsenic	0.0020 mg/L	0.0044	0.0021	71%	J-FD
Barium	0.0010 mg/L	0.050	0.049	2.0%	
Chromium	0.0020 mg/L	0.0041	0.0026	45%	\pm RL
Molybdenum	0.0010 mg/L	0.0080	0.0076	5.1%	
Total Dissolved Solids	100 mg/L	4,300	4,400	2.3%	
pH	1.7 SU	7.5	7.6	1.3%	
Radium 226	0.4 pCi/L	0.4 U	0.4 \pm 0.2	NC	\pm RL
Total Radium	0.8 pCi/L	0.8 U	0.4 \pm 0.2	NC	\pm RL

Notes:

\pm RL = The difference between concentrations is less than the reporting limit, indicating acceptable sampling and analytical precision.

FD = Imprecision between primary and field duplicate results.

NC = not calculable

pCi/L = picoCuries per liter

SU = standard units

Cholla CCR Data Review

9. Did the laboratory perform duplicate analyses on project-specific samples?

Yes

☒ No

If Yes:

Sample ID	Analysis

a. Is the RPD between duplicate results within laboratory-specified limits or is the difference between analyte concentrations less than the reporting limit?

Yes

No

☒ N/A

If No:

Sample ID	Analyte	Effect on Data Usability

10. Are total analyte concentrations greater than dissolved analyte concentrations or are differences between total and dissolved results less than the reporting limit?

Yes

No

☒ N/A

If No, list affected samples and analytes.

Sample ID	Analyte	Total	Dissolved	Effect on Data Usability

Cholla CCR Data Review

11. Are non-detect results sufficiently low to meet EPA primary drinking water criteria?

Yes

No

Analyte	List	MCL	Alternative GWPS	Units
Antimony	Appendix IV	0.006	--	mg/L
Arsenic	Appendix IV	0.010	--	mg/L
Barium	Appendix IV	2	--	mg/L
Beryllium	Appendix IV	0.004	--	mg/L
Boron	Appendix III	--	--	mg/L
Cadmium	Appendix IV	0.005	--	mg/L
Calcium	Appendix III	--	--	mg/L
Chloride	Appendix III	--	--	mg/L
Chromium	Appendix IV	0.1	--	mg/L
Cobalt	Appendix IV	--	0.006	mg/L
Fluoride	Appendix III/IV	4.0	--	mg/L
Lead	Appendix IV	--	0.015	mg/L
Lithium	Appendix IV	--	0.040	mg/L
Mercury	Appendix IV	0.002	--	mg/L
Molybdenum	Appendix IV	--	0.1	mg/L
pH	Appendix III	--	--	s.u.
Radium 226 + Radium 228	Appendix IV	5	--	pCi/L
Selenium	Appendix IV	0.05	--	mg/L
Sulfate	Appendix III	--	--	mg/L
Total Dissolved Solids	Appendix III	--	--	mg/L
Thallium	Appendix IV	0.002	--	mg/L

If No, list affected samples and analytes.

Sample ID	Analyte	Reporting Limit

12. Other quality control issues

The laboratory report contains cobalt results from EPA Methods 200.7 and 200.8, but the electronic data deliverable (EDD) only contains cobalt results from the 200.8 analyses. Reporting limits from the 200.8 analyses are an order of magnitude lower than the limits from the 200.7 analyses and lower than applicable screening criteria. The 200.8 data may be considered the more conservative dataset for reporting purposes and overall data usability is not adversely affected by the EDD not matching the laboratory report.

The beryllium detections in samples CH-CCR-M56-1020 and CH-CCR-M62-1020 are listed as a non-detections at the reporting limit in the EDD. These beryllium results would have been U qualified as being not detected at the reporting limit due to a detection in the associated laboratory blank and overall data usability is not adversely affected by the EDD not matching the laboratory report.

Cholla CCR Data Review

Laboratory Name:	Radiation Safety Engineering, Inc.		
Sample Delivery Group:	Samples Received 8 May 2020	Review Date:	10 July 2020
Validator's Name:	Marie Bevier	Reviewed By:	Denise King

Sample Summary:

Field Sample Identification	Collection Date and Time	Laboratory Sample Identification	Notes
CH-CCR-M46-0520	5/5/2020 1001	64371	
CH-CCR-M50-0520	5/6/2020 1346	64372	
CH-CCR-M51-0520	5/6/2020 1515	64373	
CH-CCR-M64-0520	5/6/2020 0813	64374	
CH-CCR-M65-0520	5/5/2020 0816	64375	
CH-CCR-M66-0520	5/5/2020 1246	64376	
CH-CCR-M67-0520	5/5/2020 1122	64377	
CH-CCR-W123-0520	5/6/2020 1114	64378	
CH-CCR-W126-0520	5/5/2020 1409	64379	
CH-CCR-FD05-0520	5/6/2020 0813	64380	Field duplicate of CH-CCR-M64-0520
CH-CCR-W309-0520	5/4/2020 1424	64381	

Analytical Methods:

Analyte	Analyte Group	Method
Radium 226, Radium 228, Total Radium	Radionuclides	GammaRay HPGE

Qualifier Definitions:

- J** The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
- R** The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
- U** The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
- UJ** The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Cholla CCR Data Review

Sample Receipt Condition:

COC Signed and Complete?

Yes

No

If No, provide details.

Sample Login Matched COC?

Yes

No

If no, provide details.

Sample receipt temperature $\leq 6^{\circ}\text{C}$?

Yes

No

N/A

If no, provide details.

1. Samples analyzed for radionuclides within 180 days of sampling?

Yes

No

If No:

Sample ID	Analysis	Time Between Collection And Analysis	Effect on data usability

Cholla CCR Data Review

2. Target analytes detected in the blank? Yes No N/A
3. LCS recoveries within laboratory-specified limits? Yes No N/A
4. MS performed on a project-specific sample? Yes No N/A
5. Field duplicate collected? Yes No

If Yes:

Parent Sample	Field Duplicate
CH-CCR-M64-0520	CH-CCR-FD05-0520

- a. Is the RPD between primary and duplicate detections $\leq 20\%$ or is the difference between analyte concentrations \leq the reporting limit?

Yes No N/A

Analyte	Reporting Limit	Primary Result	Duplicate Result	RPD	Notes
Samples CH-CCR-M64-0520 and CH-CCR-FD05-0520					
No detections					

6. Did the laboratory perform duplicate analyses on project-specific samples?

Yes No

If Yes:

Sample ID	Analysis

- a. Is the RPD between duplicate results within laboratory-specified limits or is the difference between analyte concentrations less than the reporting limit?

Yes No N/A

If No:

Sample ID	Analyte	Effect on Data Usability

Cholla CCR Data Review

7. Are non-detect results sufficiently low to meet EPA primary drinking water criteria?

Yes

No

Analyte	List	MCL	Alternative GWPS	Units
Antimony	Appendix IV	0.006	--	mg/L
Arsenic	Appendix IV	0.010	--	mg/L
Barium	Appendix IV	2	--	mg/L
Beryllium	Appendix IV	0.004	--	mg/L
Boron	Appendix III	--	--	mg/L
Cadmium	Appendix IV	0.005	--	mg/L
Calcium	Appendix III	--	--	mg/L
Chloride	Appendix III	--	--	mg/L
Chromium	Appendix IV	0.1	--	mg/L
Cobalt	Appendix IV	--	0.006	mg/L
Fluoride	Appendix III/IV	4.0	--	mg/L
Lead	Appendix IV	--	0.015	mg/L
Lithium	Appendix IV	--	0.040	mg/L
Mercury	Appendix IV	0.002	--	mg/L
Molybdenum	Appendix IV	--	0.1	mg/L
pH	Appendix III	--	--	s.u.
Radium 226 + Radium 228	Appendix IV	5	--	pCi/L
Selenium	Appendix IV	0.05	--	mg/L
Sulfate	Appendix III	--	--	mg/L
Total Dissolved Solids	Appendix III	--	--	mg/L
Thallium	Appendix IV	0.002	--	mg/L

If No, list affected samples and analytes.

Sample ID	Analyte	Reporting Limit

APPENDIX D

GROUNDWATER QUALITY DATA TABLES

Groundwater Quality Data for the BAM Monitoring Wells

Constituent:				Appendix III Constituents							Appendix IV Constituents														
				Boron	Calcium	Chloride	Fluoride	pH (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Fluoride	Lead	Lithium	Molybdenum	Mercury	Selenium	Thallium	Total Radium
Filtered:	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N			
Units:				mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L		
BTV				0.55	100	1,600	1.4 / 1.5*	7.3 - 7.8	380	3,200	--	--	--	--	--	--	--	--	--	--	--	--	--		
M-54	Background	Coconino Sandstone	12/03/2015	0.52	100	1,500	1.2	7.34	380	3,000	< 0.0025	0.0041	0.052	< 0.0010	< 0.00010	< 0.00050	< 0.00050	1.2	< 0.00050	< 0.20	0.0086	< 0.00020	0.00018	0.000	4.0
M-54	Background	Coconino Sandstone	03/10/2016	0.53	100	1,600	1.3	7.56	360	2,900	< 0.015	0.0073 j	0.045	< 0.0010	< 0.00046	< 0.0087	0.0013 j	1.3	< 0.0044	< 0.20	0.0067 j	< 0.00020	< 0.0015	0.000	5.5
M-54	Background	Coconino Sandstone	05/20/2016	0.51	100	1,500	1.4	--	350	3,000	0.00015	0.0067	0.032	< 0.0010	< 0.00010	< 0.00050	0.00058	1.4	0.00065	< 0.20	0.0055	< 0.00020	< 0.00050	0.000	6.3
M-54	Background	Coconino Sandstone	08/27/2016	0.53	110	1,600	1.4	7.5	370	3,100	< 0.00010	0.0077	0.032	< 0.0010	< 0.00010	0.00056	0.00057	1.4	< 0.00050	< 0.20	0.0060	< 0.00020	< 0.00050	0.000	7.5
M-54	Background	Coconino Sandstone	09/22/2016	0.52	99	1,400	1.3	7.7	350	3,200	< 0.00050	0.0074	0.030	< 0.0010	< 0.00010	< 0.00050	0.00055	1.3	< 0.00010	< 0.20	0.0064	< 0.00020	< 0.00060	0.000	6.3
M-54	Background	Coconino Sandstone	02/21/2017	0.52	100	1,300	1.3	7.7	350	2,900	< 0.0010	0.0072	0.027	< 0.0010	< 0.00010	< 0.00050	< 0.00050	1.3	< 0.00050	< 0.20	0.0056	< 0.00020	< 0.00050	0.000	6.6
M-54	Background	Coconino Sandstone	04/11/2017	0.51	100	1,500	1.3	7.7	360	3,100	< 0.0010	0.0077	0.028	< 0.0010	< 0.00010	< 0.00050	< 0.00050	1.3	< 0.00050	< 0.20	0.0058	< 0.00020	< 0.00050	0.000	8.1
M-54	Background	Coconino Sandstone	04/24/2017	0.53	95	1,500	1.3	7.6	370	3,000	< 0.0010	0.0075	0.027	< 0.0010	< 0.00010	< 0.00050	< 0.00050	1.3	< 0.00050	< 0.20	0.0058	< 0.00020	< 0.00050	0.000	5.6
M-54	Background	Coconino Sandstone	05/19/2017	0.50	99	1,600	1.3	7.8	380	3,200	< 0.0010	0.0068	0.026	< 0.0010	< 0.00010	< 0.00050	< 0.00050	1.3	< 0.00050	< 0.20	0.0054	< 0.00020	< 0.00050	0.000	8.4
M-54	Background	Coconino Sandstone	05/25/2017	0.52	100	1,500	1.4	7.7	370	3,200	< 0.0010	0.0079	0.026	< 0.0010	< 0.00010	< 0.00050	< 0.00050	1.4	< 0.00050	< 0.20	0.0056	< 0.00020	< 0.00050	0.000	9.6
M-54	Background	Coconino Sandstone	06/29/2017	0.51	97	1,600	1.4	7.6	380	2,900	< 0.0010	0.0074	0.027	< 0.0010	< 0.00010	< 0.00050	< 0.00050	1.4	< 0.00050	< 0.20	0.0059	< 0.00020	< 0.00050	0.000	9.0
M-54	Background	Coconino Sandstone	07/29/2017	0.56	100	1,500	1.4	7.4	350	3,100	< 0.0020	0.0074	0.027	< 0.0010	< 0.00020	< 0.0010	< 0.0010	1.4	< 0.0010	< 0.20	0.0057	< 0.00020	< 0.0010	0.000	6.5
M-54	Background	Coconino Sandstone	09/05/2017	0.55	100	1,500	1.4	7.5	370	3,100	< 0.0040	0.0076	0.028	< 0.0010	< 0.00040	< 0.0040	< 0.0020	1.4	< 0.0020	< 0.20	0.0059	< 0.00020	< 0.0020	0.000	6.4
M-54	Background	Coconino Sandstone	12/07/2017	0.51	97	1,600	1.4	7.6	360	3,000	--	--	--	--	--	--	--	1.4	--	--	--	--	--	--	--
M-54	Background	Coconino Sandstone	05/25/2018	0.50	96	1,500	1.4	7.4	350	3,000	--	--	--	--	--	--	--	1.4	--	--	--	--	--	--	--
M-54	Background	Coconino Sandstone	10/26/2018	0.50	100	1,500	1.4	7.5	360	2,900	--	--	--	--	--	--	--	1.4	--	--	--	--	--	--	--
M-54	Background	Coconino Sandstone	04/09/2019	0.53	98	1,400	1.3	7.7	340	3,100	--	--	--	--	--	--	--	1.3	--	--	--	--	--	--	--
M-54	Background	Coconino Sandstone	10/22/2019	0.49	95	1,500	1.3	7.4 J	350	2,900	--	--	--	--	--	--	--	1.3	--	--	--	--	--	--	--
M-54	Background	Coconino Sandstone	05/07/2020	0.51	98	1,400	1.8	7.6 J	360	3,100	--	--	--	--	--	--	--	1.8	--	--	--	--	--	--	--
M-54	Background	Coconino Sandstone	10/21/2020	0.48	92	1,500	1.3	7.3 J	350	2,900	--	--	--	--	--	--	--	1.3	--	--	--	--	--	--	--
M-59	Downgradient	Coconino Sandstone	12/03/2015	0.50	87	1,300	1.3	7.53	340	2,700	< 0.0025	0.0049	0.051	< 0.0010	< 0.00010	< 0.00050	0.0013	1.3	< 0.00050	< 0.20	0.0063	< 0.00020	0.00013	0.000	5.4
M-59	Downgradient	Coconino Sandstone	03/10/2016	0.48	85	1,400	1.3	7.57	350	2,700	< 0.015	0.0069 j	0.032	< 0.0010	< 0.00046	< 0.0087	< 0.0013	1.3	< 0.0044	< 0.20	0.0058 j	< 0.00020	< 0.0015	0.000	5.4
M-59	Downgradient	Coconino Sandstone	05/20/2016	0.49	86	1,400	1.4	--	340	2,700	< 0.00010	0.0073	0.031	< 0.0010	< 0.00010	0.00063	0.00085	1.4	0.00068	< 0.20	0.0059	< 0.00020	< 0.00050	0.000	7.4
M-59	Downgradient	Coconino Sandstone	08/27/2016	0.50	89	1,400	1.4	7.6	350	2,700	< 0.00010	0.0082	0.030	< 0.0010	< 0.00010	< 0.00050	0.00062	1.4	< 0.00050	< 0.20	0.0065	< 0.00020	< 0.00050	0.000	8.1
M-59	Downgradient	Coconino Sandstone	09/22/2016	0.50	88	1,300	1.4	7.8	340	2,900	< 0.00050	0.0085	0.028	< 0.0010	< 0.00010	< 0.00050	0.00055	1.4	< 0.00010	< 0.20	0.0063	< 0.00020	< 0.00060	0.000	7.2
M-59	Downgradient	Coconino Sandstone	02/22/2017	0.48	86	1,200	1.3	7.8	330	2,800	< 0.0010	0.0081	0.025	< 0.0010	< 0.00010	< 0.00050	< 0.00050	1.3	< 0.00050	< 0.20	0.0058	< 0.00020	< 0.00050	0.000	7.7
M-59	Downgradient	Coconino Sandstone	04/11/2017	0.49	90	1,400	1.3	8.1	350	2,800	< 0.0010	0.0083	0.025	< 0.0010	< 0.00010	< 0.00050	< 0.00050	1.3	< 0.00050	< 0.20	0.0063	< 0.00020	< 0.00050	0.000	7.7
M-59	Downgradient	Coconino Sandstone	04/24/2017	0.52	89	1,300	1.4	7.7	350	2,800	< 0.0010	0.0082	0.025	< 0.0010	< 0.00010	< 0.00050	< 0.00050	1.4	< 0.00050	< 0.20	0.0058	< 0.00020	< 0.00050	0.000	8.0
M-59	Downgradient	Coconino Sandstone	05/19/2017	0.50	93	1,400	1.4	7.8	360	2,700	< 0.0010	0.0077	0.023	< 0.0010	< 0.00010	< 0.00050	< 0.00050	1.4	< 0.00050	< 0.20	0.0056	< 0.00020	< 0.00050	0.000	7.1
M-59	Downgradient	Coconino Sandstone	05/25/2017	0.50	88	1,300	1.4	7.6	350	2,700	< 0.0010	0.0073	0.024	< 0.0010	< 0.00010	< 0.00050	< 0.00050	1.4	0.00061	< 0.20	0.0059	< 0.00020	< 0.00050	0.000	8.0
M-59	Downgradient	Coconino Sandstone	06/29/2017	0.49	84	1,400	1.5	7.8	370	2,500	< 0.0010	0.0086	0.025	< 0.0010	< 0.00010	< 0.00050	< 0.00050	1.5	< 0.00050	< 0.20	0.0058	< 0.00020	< 0.000500		

Groundwater Quality Data for the BAM Monitoring Wells

Constituent: Filtered: Units:				Appendix III Constituents							Appendix IV Constituents														
				Boron	Calcium	Chloride	Fluoride	pH (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Fluoride	Lead	Lithium	Molybdenum	Mercury	Selenium	Thallium	Total Radium
				N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
				mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L
BTV				0.55	100	1,600	1.4 / 1.5*	7.3 - 7.8	380	3,200	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M-60	Downgradient	Coconino Sandstone	05/25/2018	0.50	83	1,400	1.5	7.5	350	2,800	--	--	--	--	--	--	--	1.5	--	--	--	--	--	--	--
M-60	Downgradient	Coconino Sandstone	10/26/2018	0.49	88	1,400	1.4	7.7	350	2,600	--	--	--	--	--	--	--	1.4	--	--	--	--	--	--	--
M-60	Downgradient	Coconino Sandstone	04/09/2019	0.51	84	1,300	1.4	7.7 J	350	2,800	--	--	--	--	--	--	--	1.4	--	--	--	--	--	--	--
M-60	Downgradient	Coconino Sandstone	10/22/2019	0.50	85	1,400	1.4	7.6 J	360	2,800	--	--	--	--	--	--	--	1.4	--	--	--	--	--	--	--
M-60	Downgradient	Coconino Sandstone	05/07/2020	0.50	88	1,200	1.7	7.7 J	350	2,900	--	--	--	--	--	--	--	1.7	--	--	--	--	--	--	--
M-60	Downgradient	Coconino Sandstone	10/21/2020	0.48	82	1,400	1.4 J	7.5 J	340	2,900	--	--	--	--	--	--	--	1.4 J	--	--	--	--	--	--	--
M-60	Downgradient	Coconino Sandstone	10/21/2020	0.48	83	1,200	1.5 J	7.4 J	340	2,900	--	--	--	--	--	--	--	1.5 J	--	--	--	--	--	--	--
M-61	Downgradient	Coconino Sandstone	12/03/2015	0.51	90	1,400	1.3	7.22	350	2,800	< 0.0025	0.0063	0.039	< 0.0010	< 0.00010	0.00093	0.00098	1.3	< 0.00050	< 0.20	0.0064	< 0.00020	0.00019	0.000	7.1
M-61	Downgradient	Coconino Sandstone	03/10/2016	0.49	90	1,400	1.4	7.59	340	2,800	< 0.015	0.010	0.030	< 0.0010	< 0.00046	< 0.0087	< 0.0013	1.4	< 0.0044	< 0.20	0.0063 j	< 0.00020	< 0.0015	0.000	7.3
M-61	Downgradient	Coconino Sandstone	05/20/2016	0.49	89	1,400	1.4	--	350	2,800	< 0.00010	0.0081	0.025	< 0.0010	< 0.00010	< 0.00050	< 0.00050	1.4	< 0.00050	< 0.20	0.0053	< 0.00020	< 0.00050	0.000	7.7
M-61	Downgradient	Coconino Sandstone	08/27/2016	0.50	90	1,400	1.5	7.5	360	2,900	< 0.00010	0.0091	0.027	< 0.0010	< 0.00010	< 0.00050	< 0.00050	1.5	< 0.00050	< 0.20	0.0061	< 0.00020	< 0.00050	0.000	9.8
M-61	Downgradient	Coconino Sandstone	09/22/2016	0.50	90	1,300	1.4	7.9	350	3,000	< 0.00050	0.0086	0.023	< 0.0010	< 0.00010	< 0.00050	0.00037	1.4	< 0.00010	< 0.20	0.0059	< 0.00020	< 0.00060	0.000	8.3
M-61	Downgradient	Coconino Sandstone	02/22/2017	0.50	92	1,100	1.4	7.8	340	2,700	< 0.0010	0.0079	0.023	< 0.0010	< 0.00010	< 0.00050	< 0.00050	1.4	< 0.00050	< 0.20	0.0057	< 0.00020	< 0.00050	0.000	7.5
M-61	Downgradient	Coconino Sandstone	04/11/2017	0.50	93	1,700	1.4	8.0	420	3,000	< 0.0010	0.012	0.023	< 0.0010	< 0.00010	< 0.00050	< 0.00050	1.4	< 0.00050	< 0.20	0.0059	< 0.00020	< 0.00050	0.000	7.8
M-61	Downgradient	Coconino Sandstone	04/24/2017	0.52	88	1,400	1.4	7.7	360	2,700	< 0.0010	0.0084	0.022	< 0.0010	< 0.00010	< 0.00050	< 0.00050	1.4	< 0.00050	< 0.20	0.0056	< 0.00020	< 0.00050	0.000	8.6
M-61	Downgradient	Coconino Sandstone	05/19/2017	0.50	92	1,400	1.3	7.8	370	2,800	< 0.0010	0.0077	0.020	< 0.0010	< 0.00010	< 0.00050	< 0.00050	1.3	< 0.00050	< 0.20	0.0052	< 0.00020	< 0.00050	0.000	8.6
M-61	Downgradient	Coconino Sandstone	05/25/2017	0.51	92	1,400	1.4	7.7	370	2,800	< 0.0010	0.0098	0.023	< 0.0010	< 0.00010	< 0.00050	< 0.00050	1.4	< 0.00050	< 0.20	0.0062	< 0.00020	< 0.00050	0.000	8.7
M-61	Downgradient	Coconino Sandstone	06/29/2017	0.50	86	1,500	1.5	7.8	380	2,700	< 0.0010	0.0086	0.022	< 0.0010	< 0.00010	< 0.00050	< 0.00050	1.5	< 0.00050	< 0.20	0.0056	< 0.00020	< 0.00050	0.000	8.1
M-61	Downgradient	Coconino Sandstone	07/29/2017	0.52	94	1,300	1.5	7.6	360	2,900	< 0.0020	0.0086	0.022	< 0.0010	< 0.00020	< 0.0010	< 0.0010	1.5	< 0.0010	< 0.20	0.0056	< 0.00020	< 0.0010	0.000	8.0
M-61	Downgradient	Coconino Sandstone	09/05/2017	0.50	91	1,400	1.5	7.6	360	2,800	< 0.0040	0.0096	0.026	< 0.0010	< 0.00040	< 0.0040	< 0.0020	1.5	< 0.0020	< 0.20	0.0064	< 0.00020	< 0.0020	0.000	8.3
M-61	Downgradient	Coconino Sandstone	12/07/2017	0.49	88	1,500	1.4	7.6	360	2,900	--	--	--	--	--	--	--	1.4	--	--	--	--	--	--	--
M-61	Downgradient	Coconino Sandstone	05/25/2018	0.48	87	1,400	1.5	7.5	390	2,800	--	--	--	--	--	--	--	1.5	--	--	--	--	--	--	--
M-61	Downgradient	Coconino Sandstone	10/26/2018	0.48	91	1,400	1.4	7.5	360	2,600	--	--	--	--	--	--	--	1.4	--	--	--	--	--	--	--
M-61	Downgradient	Coconino Sandstone	04/09/2019	0.50	88	1,300	1.4	7.7 J	340	2,800	--	--	--	--	--	--	--	1.4	--	--	--	--	--	--	--
M-61	Downgradient	Coconino Sandstone	10/22/2019	0.48	87	1,400	1.4	7.8 J	350	2,700	--	--	--	--	--	--	--	1.4	--	--	--	--	--	--	--
M-61	Downgradient	Coconino Sandstone	05/07/2020	0.51	93	1,300	1.6	7.7 J	350	3,000	--	--	--	--	--	--	--	1.6	--	--	--	--	--	--	--
M-61	Downgradient	Coconino Sandstone	05/07/2020	0.51	93	1,200	1.7	7.6 J	350	2,900	--	--	--	--	--	--	--	1.7	--	--	--	--	--	--	--
M-61	Downgradient	Coconino Sandstone	10/21/2020	0.48	88	1,400	1.4	7.5 J	350	2,700	--	--	--	--	--	--	--	1.4	--	--	--	--	--	--	--

Groundwater Quality Data for the BAM Monitoring Wells

				Additional Analyses									
				Constituent:	Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Magnesium	Potassium	Radium 226	Radium 228	SiO2, Silica	Sodium
					Filtered:	N	N	N	N	N	N	N	N
				Units:	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L	mg/L	
BTV				--	--	--	--	--	--	--	--	--	
M-54	Background	Coconino Sandstone	12/03/2015	220	< 6.0	< 6.0	36	4.5	2.6	1.4	10	1,000	
M-54	Background	Coconino Sandstone	03/10/2016	--	--	--	--	--	3.6	1.9	--	--	
M-54	Background	Coconino Sandstone	05/20/2016	210	< 6.0	< 6.0	34	4.1	3.6	2.7	8.8	990	
M-54	Background	Coconino Sandstone	08/27/2016	--	--	--	--	--	4.3	3.2	--	--	
M-54	Background	Coconino Sandstone	09/22/2016	--	--	--	--	--	3.7	2.6	--	--	
M-54	Background	Coconino Sandstone	02/21/2017	210	< 6.0	< 6.0	36	4.4	4.1	2.5	--	1,000	
M-54	Background	Coconino Sandstone	04/11/2017	220	< 6.0	< 6.0	34	4.1	5.1	3.0	--	950	
M-54	Background	Coconino Sandstone	04/24/2017	220	< 6.0	< 6.0	35	4.3	3.3	2.3	--	1,000	
M-54	Background	Coconino Sandstone	05/19/2017	220	< 6.0	< 6.0	35	4.0	5.7	2.7	--	950	
M-54	Background	Coconino Sandstone	05/25/2017	220	< 6.0	< 6.0	36	4.2	5.9	3.7	--	1,000	
M-54	Background	Coconino Sandstone	06/29/2017	220	< 6.0	< 6.0	35	4.1	6.1	2.9	--	970	
M-54	Background	Coconino Sandstone	07/29/2017	220	< 6.0	< 6.0	37	4.2	3.8	2.7	--	990	
M-54	Background	Coconino Sandstone	09/05/2017	220	< 6.0	< 6.0	36	4.2	3.9	2.5	--	1,000	
M-54	Background	Coconino Sandstone	12/07/2017	220	< 6.0	< 6.0	33	4.1	--	--	--	940	
M-54	Background	Coconino Sandstone	05/25/2018	220	< 6.0	< 6.0	33	3.9	--	--	--	920	
M-54	Background	Coconino Sandstone	10/26/2018	--	--	--	--	--	--	--	--	--	
M-54	Background	Coconino Sandstone	04/09/2019	--	--	--	--	--	--	--	--	--	
M-54	Background	Coconino Sandstone	10/22/2019	--	--	--	--	--	--	--	--	--	
M-54	Background	Coconino Sandstone	05/07/2020	--	--	--	--	--	--	--	--	--	
M-54	Background	Coconino Sandstone	10/21/2020	--	--	--	--	--	--	--	--	--	
M-59	Downgradient	Coconino Sandstone	12/03/2015	210	< 6.0	< 6.0	32	4.3	3.2	2.2	9.5	910	
M-59	Downgradient	Coconino Sandstone	03/10/2016	--	--	--	--	--	3.1	2.3	--	--	
M-59	Downgradient	Coconino Sandstone	05/20/2016	210	< 6.0	< 6.0	31	4.0	4.6	2.8	8.9	870	
M-59	Downgradient	Coconino Sandstone	08/27/2016	--	--	--	--	--	5.2	2.9	--	--	
M-59	Downgradient	Coconino Sandstone	09/22/2016	--	--	--	--	--	4.2	3.0	--	--	
M-59	Downgradient	Coconino Sandstone	02/22/2017	210	< 6.0	< 6.0	31	4.1	5.2	2.5	--	880	
M-59	Downgradient	Coconino Sandstone	04/11/2017	220	< 6.0	< 6.0	31	4.0	5.4	2.3	--	870	
M-59	Downgradient	Coconino Sandstone	04/24/2017	220	< 6.0	< 6.0	32	4.2	4.6	3.4	--	950	
M-59	Downgradient	Coconino Sandstone	05/19/2017	220	< 6.0	< 6.0	32	4.2	5.1	2.0	--	920	
M-59	Downgradient	Coconino Sandstone	05/25/2017	220	< 6.0	< 6.0	32	4.1	4.9	3.1	--	910	
M-59	Downgradient	Coconino Sandstone	06/29/2017	220	< 6.0	< 6.0	31	3.9	5.2	3.8	--	860	
M-59	Downgradient	Coconino Sandstone	07/29/2017	220	< 6.0	< 6.0	33	4.1	4.5	3.4	--	900	
M-59	Downgradient	Coconino Sandstone	09/05/2017	220	< 6.0	< 6.0	32	4.1	4.6	3.0	--	910	
M-59	Downgradient	Coconino Sandstone	12/07/2017	220	< 6.0	< 6.0	30	3.9	--	--	--	860	
M-59	Downgradient	Coconino Sandstone	05/25/2018	220	< 6.0	< 6.0	30	3.9	--	--	--	850	
M-59	Downgradient	Coconino Sandstone	10/26/2018	--	--	--	--	--	--	--	--	--	
M-59	Downgradient	Coconino Sandstone	04/09/2019	--	--	--	--	--	--	--	--	--	
M-59	Downgradient	Coconino Sandstone	10/23/2019	--	--	--	--	--	--	--	--	--	
M-59	Downgradient	Coconino Sandstone	05/07/2020	--	--	--	--	--	--	--	--	--	
M-59	Downgradient	Coconino Sandstone	10/21/2020	--	--	--	--	--	--	--	--	--	
M-60	Downgradient	Coconino Sandstone	12/03/2015	210	< 6.0	< 6.0	32	4.2	4.0	3.8	9.4	960	
M-60	Downgradient	Coconino Sandstone	03/09/2016	--	--	--	--	--	< 0.2	2.6	--	--	
M-60	Downgradient	Coconino Sandstone	05/20/2016	210	< 6.0	< 6.0	30	3.9	4.2	3.7	8.7	950	
M-60	Downgradient	Coconino Sandstone	08/27/2016	--	--	--	--	--	5.4	3.3	--	--	
M-60	Downgradient	Coconino Sandstone	09/22/2016	--	--	--	--	--	5.2	3.1	--	--	
M-60	Downgradient	Coconino Sandstone	02/22/2017	210	< 6.0	< 6.0	31	4.2	4.3	3.9	--	960	
M-60	Downgradient	Coconino Sandstone	04/11/2017	220	< 6.0	< 6.0	29	3.8	4.4	2.5	--	890	
M-60	Downgradient	Coconino Sandstone	04/11/2017	220	< 6.0	< 6.0	29	3.7	4.8	4.0	--	880	
M-60	Downgradient	Coconino Sandstone	04/24/2017	220	< 6.0	< 6.0	32	4.1	4.8	2.4	--	970	
M-60	Downgradient	Coconino Sandstone	05/19/2017	220	< 6.0	< 6.0	32	4.0	6.1	2.5	--	950	
M-60	Downgradient	Coconino Sandstone	05/25/2017	220	< 6.0	< 6.0	31	3.9	4.8	5.4	--	950	
M-60	Downgradient	Coconino Sandstone	06/29/2017	220	< 6.0	< 6.0	31	3.8	5.0	3.1	--	910	
M-60	Downgradient	Coconino Sandstone	06/29/2017	220	< 6.0	< 6.0	30	3.9	4.8	4.2	--	930	
M-60	Downgradient	Coconino Sandstone	07/29/2017	220	< 6.0	< 6.0	31	3.8	5.0	3.4	--	900	
M-60	Downgradient	Coconino Sandstone	09/05/2017	220	< 6.0	< 6.0	32	4.2	4.9	3.6	--	970	
M-60	Downgradient	Coconino Sandstone	09/05/2017	220	< 6.0	< 6.0	31	4.0	4.4	3.2	--	930	
M-60	Downgradient	Coconino Sandstone	12/07/2017	220	< 6.0	< 6.0	29	3.8	--	--	--	890	
M-60	Downgradient	Coconino Sandstone	12/07/2017	220	< 6.0	< 6.0	29	3.9	--	--	--	900	

Groundwater Quality Data for the BAM Monitoring Wells

					Additional Analyses									
					Constituent:	Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Magnesium	Potassium	Radium 226	Radium 228	SiO2, Silica	Sodium
						Filtered:	N	N	N	N	N	N	N	N
					Units:	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L	mg/L	
BTV					--	--	--	--	--	--	--	--	--	
M-60	Downgradient	Coconino Sandstone	05/25/2018	230	< 6.0	< 6.0	29	3.6	--	--	--	--	870	
M-60	Downgradient	Coconino Sandstone	10/26/2018	--	--	--	--	--	--	--	--	--	--	
M-60	Downgradient	Coconino Sandstone	04/09/2019	--	--	--	--	--	--	--	--	--	--	
M-60	Downgradient	Coconino Sandstone	10/22/2019	--	--	--	--	--	--	--	--	--	--	
M-60	Downgradient	Coconino Sandstone	05/07/2020	--	--	--	--	--	--	--	--	--	--	
M-60	Downgradient	Coconino Sandstone	10/21/2020	--	--	--	--	--	--	--	--	--	--	
M-60	Downgradient	Coconino Sandstone	10/21/2020	--	--	--	--	--	--	--	--	--	--	
M-61	Downgradient	Coconino Sandstone	12/03/2015	210	< 6.0	< 6.0	33	4.0	3.8	3.3	9.3	950		
M-61	Downgradient	Coconino Sandstone	03/10/2016	--	--	--	--	--	4.5	2.8	--	--		
M-61	Downgradient	Coconino Sandstone	05/20/2016	210	< 6.0	< 6.0	31	3.7	4.3	3.4	8.8	890		
M-61	Downgradient	Coconino Sandstone	08/27/2016	--	--	--	--	--	5.7	4.1	--	--		
M-61	Downgradient	Coconino Sandstone	09/22/2016	--	--	--	--	--	5.2	3.1	--	--		
M-61	Downgradient	Coconino Sandstone	02/22/2017	210	< 6.0	< 6.0	32	4.2	4.2	3.3	--	930		
M-61	Downgradient	Coconino Sandstone	04/11/2017	220	< 6.0	< 6.0	32	3.8	5.4	2.4	--	910		
M-61	Downgradient	Coconino Sandstone	04/24/2017	220	< 6.0	< 6.0	33	4.0	5.0	3.6	--	960		
M-61	Downgradient	Coconino Sandstone	05/19/2017	220	< 6.0	< 6.0	32	3.8	4.9	3.7	--	910		
M-61	Downgradient	Coconino Sandstone	05/25/2017	220	< 6.0	< 6.0	33	3.9	5.2	3.5	--	960		
M-61	Downgradient	Coconino Sandstone	06/29/2017	220	< 6.0	< 6.0	32	3.8	4.6	3.5	--	910		
M-61	Downgradient	Coconino Sandstone	07/29/2017	220	< 6.0	< 6.0	33	3.9	4.8	3.2	--	920		
M-61	Downgradient	Coconino Sandstone	09/05/2017	220	< 6.0	< 6.0	32	3.9	4.9	3.4	--	910		
M-61	Downgradient	Coconino Sandstone	12/07/2017	220	< 6.0	< 6.0	31	3.9	--	--	--	910		
M-61	Downgradient	Coconino Sandstone	05/25/2018	230	< 6.0	< 6.0	30	3.6	--	--	--	860		
M-61	Downgradient	Coconino Sandstone	10/26/2018	--	--	--	--	--	--	--	--	--		
M-61	Downgradient	Coconino Sandstone	04/09/2019	--	--	--	--	--	--	--	--	--		
M-61	Downgradient	Coconino Sandstone	10/22/2019	--	--	--	--	--	--	--	--	--		
M-61	Downgradient	Coconino Sandstone	05/07/2020	--	--	--	--	--	--	--	--	--		
M-61	Downgradient	Coconino Sandstone	05/07/2020	--	--	--	--	--	--	--	--	--		
M-61	Downgradient	Coconino Sandstone	10/21/2020	--	--	--	--	--	--	--	--	--		

Notes:
BTV exceedances are shown in grey shaded cells.
Duplicate sample dates under the same locations are either field duplicates or are instances of samples with multiple filed/lab sample IDs on the same date.
*Fluoride BTV for M-60 and M-61 is 1.5 mg/L.

Abbreviations and Data Qualifiers:
< = less than
BTV = Background Threshold Value
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
mg/L = milligrams per liter
pCi/L = Picocuries per liter
su = standard units

Groundwater Quality Data for the SEDI Monitoring Wells

				Appendix III Constituents							Appendix IV Constituents															
				Boron	Calcium	Chloride	Fluoride	pH (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Chromium	Cobalt	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Total Radium
Filtered:				N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	N	
Units:				mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	
BTV				0.23	600	3,700	0.8	7.5	630	7,800	0.05	0.004	0.08	0.001	0.002	0.004	0.004	0.002	0.8	0.01	0.2	0.002	0.011	0.01	0.0004	1.1
GWPS				--	--	--	--	--	--	--	0.05	0.01	2	0.004	0.005	0.1	0.1	0.006	4	0.015	0.2	0.002	0.1	0.05	0.002	5
M-62A	Background	LCR Alluvium	11/30/2015	0.14	280	2,000	< 0.40	7.68	610	4,300	< 0.0025	0.0020	0.082	< 0.0010	< 0.00010	0.00078	--	0.00054	< 0.40	< 0.00050	< 0.20	< 0.00020	0.011	0.00071	< 0.00010	< 0.7
M-62A	Background	LCR Alluvium	03/08/2016	0.20	380	2,500	< 0.80	7.6	510	5,100	< 0.015	< 0.0049	0.16	< 0.0010	< 0.00046	< 0.0087	--	0.0022 j	< 0.80	< 0.0044	< 0.20	< 0.00020	0.0044 j	< 0.0015	0.00050 j	1.0
M-62A	Background	LCR Alluvium	03/08/2016	0.20	380	2,500	< 0.80	7.59	520	5,100	< 0.015	< 0.0049	0.15	< 0.0010	< 0.00046	< 0.0087	--	0.0020 j	< 0.80	< 0.0044	< 0.20	< 0.00020	0.0040 j	< 0.0015	0.00028 j	1.2
M-62A	Background	LCR Alluvium	05/05/2016	0.22	420	2,600	< 0.40	--	510	5,100	< 0.00010	0.0030	0.084	< 0.0010	< 0.00010	0.0014	--	0.0012	< 0.40	< 0.00050	< 0.20	< 0.00020	0.0026	< 0.00050	< 0.00010	0.5
M-62A	Background	LCR Alluvium	08/29/2016	0.21	410	2,500	< 0.80	7.4	550	6,100	< 0.00010	0.0031	0.082	< 0.0010	< 0.00010	< 0.00050	--	< 0.00050	< 0.80	< 0.00050	< 0.20	< 0.00020	0.0023	< 0.00050	< 0.00010	0.9
M-62A	Background	LCR Alluvium	09/21/2016	0.21	400	2,600	< 0.80	7.6	520	4,300	< 0.00050	0.0028	0.075	< 0.0010	< 0.00010	0.00099	--	0.00046	< 0.80	< 0.00010	< 0.20	< 0.00020	0.0022	0.00078	< 0.00010	2.0
M-62A	Background	LCR Alluvium	02/20/2017	0.22	420	2,800	< 0.40	7.4	570	5,100	< 0.0010	0.0029	0.064	< 0.0010	< 0.00010	0.0020	--	< 0.00050	< 0.40	< 0.00050	< 0.20	< 0.00020	0.0019	< 0.00050	< 0.00010	1.4
M-62A	Background	LCR Alluvium	04/13/2017	0.21	460	3,000	< 0.40	7.8	540	5,600	< 0.0010	0.0021	0.074	< 0.0010	< 0.00010	0.0015	--	< 0.00050	< 0.40	< 0.00050	< 0.20	< 0.00020	0.0023	< 0.00050	< 0.00010	1.2
M-62A	Background	LCR Alluvium	04/25/2017	0.22	450	2,800	< 0.80	7.4	550	5,800	< 0.0010	0.0017	0.079	< 0.0010	< 0.00010	0.0017	--	< 0.00050	< 0.80	< 0.00050	< 0.20	< 0.00020	0.0022	< 0.00050	< 0.00010	0.9
M-62A	Background	LCR Alluvium	04/25/2017	0.22	450	2,800	< 0.80	7.5	540	5,600	< 0.0010	0.0018	0.080	< 0.0010	< 0.00010	0.0010	--	< 0.00050	< 0.80	< 0.00050	< 0.20	< 0.00020	0.0022	< 0.00050	< 0.00010	2.6
M-62A	Background	LCR Alluvium	05/18/2017	0.21	490	3,000	< 0.40	7.6	550	5,500	< 0.0010	0.0016	0.072	< 0.0010	< 0.00010	0.00063	--	< 0.00050	< 0.40	< 0.00050	< 0.20	< 0.00020	0.0020	< 0.00050	< 0.00010	1.2
M-62A	Background	LCR Alluvium	05/25/2017	0.22	500	3,100	< 0.40	7.5	550	6,100	< 0.0010	0.0019	0.077	< 0.0010	< 0.00010	0.00096	--	< 0.00050	< 0.40	< 0.00050	< 0.20	< 0.00020	0.0022	< 0.00050	< 0.00010	1.5
M-62A	Background	LCR Alluvium	07/01/2017	0.23	450	3,100	< 0.40	7.4	580	6,400	< 0.0010	0.0026	0.076	< 0.0010	< 0.00010	0.0011	--	< 0.00050	< 0.40	< 0.00050	< 0.20	< 0.00020	0.0022	< 0.00050	< 0.00010	< 0.7
M-62A	Background	LCR Alluvium	07/26/2017	0.23	480	3,000	< 0.40	7.5	580	6,800	< 0.0020	0.0024	0.075	< 0.0010	< 0.00020	< 0.0010	--	< 0.0010	< 0.40	< 0.0010	< 0.20	< 0.00020	0.0021	< 0.0010	< 0.00020	1.3
M-62A	Background	LCR Alluvium	09/07/2017	0.22	480	3,000	< 0.40	7.4	560	6,500	< 0.0040	0.0031	0.079	< 0.0010	< 0.00040	< 0.0040	--	< 0.0020	< 0.40	< 0.0020	< 0.20	< 0.00020	0.003	< 0.0020	< 0.00040	0.9
M-62A	Background	LCR Alluvium	12/08/2017	0.22	460	3,000	< 0.40	7.4	550	5,400	--	--	--	--	--	--	--	--	< 0.40	--	--	--	--	--	--	--
M-62A	Background	LCR Alluvium	05/21/2018	0.22	450	3,000	< 0.40	7.4	560	5,500	< 0.0020	0.0029	0.072	< 0.0010	< 0.00020	< 0.0020	--	< 0.0010	< 0.40	< 0.0010	< 0.20	< 0.00020	0.0024	< 0.0010	< 0.00020	0.7
M-62A	Background	LCR Alluvium	08/28/2018	--	--	--	--	--	--	--	--	0.0029	0.074	--	--	< 0.0010	--	< 0.00050	--	--	--	--	0.0023	--	< 0.00010	0.5
M-62A	Background	LCR Alluvium	10/24/2018	0.21	460	2,900	< 0.40	7.5	570	5,300	--	--	--	--	--	--	--	--	< 0.40	--	--	--	--	--	--	--
M-62A	Background	LCR Alluvium	02/15/2019	0.23	490	2,900	< 0.40	7.3 J	560	--	--	0.0030	0.068	--	--	< 0.0010	--	< 0.00050	< 0.40	--	--	--	0.0024	--	< 0.00010	< 0.7
M-62A	Background	LCR Alluvium	04/18/2019	--	--	--	0.47	--	--	--	< 0.0010	0.0033	0.068	< 0.0010	< 0.00010	< 0.0010	--	< 0.00050	0.47	< 0.00050	< 0.20	< 0.00020	0.0026	< 0.00050	< 0.00010	< 0.7
M-62A	Background	LCR Alluvium	04/18/2019	--	--	--	< 0.40	--	--	--	< 0.0010	0.0031	0.068	< 0.0010	< 0.00010	< 0.0010	--	< 0.00050	< 0.40	< 0.00050	< 0.20	< 0.00020	0.0025	< 0.00050	< 0.00010	< 0.7
M-62A	Background	LCR Alluvium	08/09/2019	0.21	450	2,900	< 0.4	7.3 J	590	5,300	--	0.0031	0.067	--	--	0.0037	--	< 0.0005	< 0.4	--	< 0.2	--	0.0028	--	< 0.0001	0.8
M-62A	Background	LCR Alluvium	08/09/2019	0.55	450	1,900	< 0.4	7.0 J	1,300	5,000	--	0.0021	0.040	--	--	0.043	--	0.0039	< 0.4	--	< 0.2	--	0.0071	--	< 0.0001	< 0.7
M-62A	Background	LCR Alluvium	11/25/2019	0.22	450	2,800	< 0.4	7.3 J	590	5,900	--	0.0048	0.15 J	--	--	0.0044	--	0.0012	< 0.4	--	--	--	0.0091	--	0.00016	--
M-62A	Background	LCR Alluvium	04/16/2020	< 0.25	430	3,000	< 0.8	7.4 J	650	5,400	< 0.005	0.0043	0.078	< 0.001	< 0.0005	0.0053	--	< 0.0025	< 0.8	< 0.0025	< 1	< 0.0002	0.0040	< 0.0025	< 0.0005	--
M-62A	Background	LCR Alluvium	10/20/2020	0.20	440	2,900	< 0.8	7.4 J	610	5,400	< 0.002	0.0048	0.12	< 0.001	< 0.0002	0.0059	--	0.0011	< 0.8	0.0020	0.090	< 0.0002	0.015	< 0.001	< 0.0002	< 0.8
M-56A	Downgradient	LCR Alluvium	11/30/2015	0.18	260	1,900	< 0.40	7.58	590	4,000	< 0.0025	0.0019	0.081	< 0.0010	< 0.00010	0.00051	--	0.0012	< 0.40	< 0.00050	< 0.20	< 0.00020	0.0096	0.00033	< 0.00010	< 0.9
M-56A	Downgradient	LCR Alluvium	03/08/2016	0.25	200	1,700	0.43	7.68	570	3,600	< 0.015	< 0.0049	0.084	< 0.0010	< 0.00046	< 0.0087	--	0.0020 j	0.43	< 0.0044	< 0.20	< 0.00020	0.029	< 0.0015	< 0.00026	< 0.4
M-56A																										

Groundwater Quality Data for the SEDI Monitoring Wells

				Appendix III Constituents							Appendix IV Constituents															
				Boron	Calcium	Chloride	Fluoride	pH (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Chromium	Cobalt	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Total Radium
Filtered:				N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	N	
Units:				mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	
BTV				0.23	600	3,700	0.8	7.5	630	7,800	0.05	0.004	0.08	0.001	0.002	0.004	0.004	0.002	0.8	0.01	0.2	0.002	0.011	0.01	0.0004	1.1
GWPS				--	--	--	--	--	--	--	0.05	0.01	2	0.004	0.005	0.1	0.1	0.006	4	0.015	0.2	0.002	0.1	0.05	0.002	5
M-56A	Downgradient	LCR Alluvium	05/21/2018	0.25	270	1,900	< 0.40	7.4	710	4,100	< 0.0010	0.00081	0.061	< 0.0010	< 0.00010	0.0046	--	< 0.00050	< 0.40	< 0.00050	< 0.20	< 0.00020	0.0079	< 0.00050	0.00012	1.4
M-56A	Downgradient	LCR Alluvium	08/28/2018	--	--	--	--	--	--	--	--	0.0013	0.065	--	--	0.0042	--	< 0.00050	--	--	--	0.0057	--	< 0.00010	0.5	
M-56A	Downgradient	LCR Alluvium	10/24/2018	0.24	280	2,000	< 0.40	7.5	630	4,100	--	--	--	--	--	--	--	< 0.40	--	--	--	--	--	--	--	
M-56A	Downgradient	LCR Alluvium	02/15/2019	0.30	300	2,000	< 0.40	7.3 J	850	--	--	0.0082	0.067	--	--	0.0052	--	0.00073	< 0.40	--	--	--	0.0074	--	< 0.00010	0.9
M-56A	Downgradient	LCR Alluvium	02/15/2019	0.23	490	3,000	< 0.40	7.3 J	590	--	--	0.0032	0.071	--	--	< 0.0010	--	< 0.00050	< 0.40	--	--	--	0.0025	--	< 0.00010	--
M-56A	Downgradient	LCR Alluvium	04/18/2019	--	--	--	< 0.40	--	--	--	< 0.0010	0.0011	0.055	< 0.0010	< 0.00010	0.076	--	0.0013	< 0.40	< 0.00050	< 0.20	< 0.00020	0.014	0.00062	< 0.00010	< 0.7
M-56A	Downgradient	LCR Alluvium	08/09/2019	0.33	300	1,700	< 0.8	7.3 J	1,100	4,200	--	0.0085	0.078	--	--	0.023	--	0.0012	< 0.8	--	< 0.2	--	0.011	--	< 0.0001	0.6
M-56A	Downgradient	LCR Alluvium	11/25/2019	0.32	300	1,700	< 0.4	7.3 J	880	4,500	--	0.0088	0.063	--	--	0.0086	--	0.00064	< 0.4	--	--	--	0.0087	--	< 0.0001	--
M-56A	Downgradient	LCR Alluvium	04/16/2020	0.38	300	1,800	< 0.8	7.5 J	1,000	4,600	< 0.005	< 0.0025	0.052	< 0.001	< 0.0005	0.034	--	< 0.0025	< 0.8	< 0.0025	< 1	< 0.0002	0.012	< 0.0025	< 0.0005	--
M-56A	Downgradient	LCR Alluvium	04/16/2020	0.37	290	1,800	< 0.8	7.4 J	1,000	4,500	< 0.005	< 0.0025	0.052	< 0.001	< 0.0005	0.028	--	< 0.0025	< 0.8	< 0.0025	< 1	< 0.0002	0.012	< 0.0025	< 0.0005	--
M-56A	Downgradient	LCR Alluvium	10/21/2020	0.37	300	1,900	< 0.8	7.5 J	940	4,300	< 0.002	0.0044 J	0.050	< 0.001	< 0.0002	0.0041	--	< 0.001	< 0.8	< 0.001	0.097	< 0.0002	0.0080	< 0.001	< 0.0002	< 0.8
M-56A	Downgradient	LCR Alluvium	10/21/2020	0.31	300	1,800	< 0.8	7.6 J	910	4,400	< 0.002	0.0021 J	0.049	< 0.001	< 0.0002	0.0026	--	< 0.001	< 0.8	< 0.001	0.097	< 0.0002	0.0076	< 0.001	< 0.0002	0.4
M-57A	Downgradient	LCR Alluvium	11/30/2015	0.42	280	1,500	< 0.40	7.39	1,000	3,900	< 0.0025	0.0048	0.072	< 0.0010	< 0.00010	0.00074	--	0.0077	< 0.40	0.00086	< 0.20	< 0.00020	0.008	0.00029	< 0.00010	< 0.9
M-57A	Downgradient	LCR Alluvium	11/30/2015	0.42	280	1,500	< 0.40	7.35	1,000	3,800	< 0.0025	0.0047	0.078	< 0.0010	< 0.00010	0.00077	--	0.0079	< 0.40	0.00095	< 0.20	< 0.00020	0.0079	0.00035	< 0.00010	1.0
M-57A	Downgradient	LCR Alluvium	03/08/2016	0.42	290	1,600	< 0.40	7.56	1,000	4,200	< 0.015	0.0064 j	0.063	< 0.0010	< 0.00046	< 0.0087	--	0.0082 j	< 0.40	< 0.0044	< 0.20	< 0.00020	0.0040 j	< 0.0015	< 0.00026	< 0.4
M-57A	Downgradient	LCR Alluvium	05/11/2016	0.46	320	1,600	< 0.40	--	1,000	4,100	< 0.00010	0.0027	0.047	< 0.0010	< 0.00010	< 0.00050	--	0.0065	< 0.40	< 0.00050	< 0.20	< 0.00020	0.0011	< 0.00050	< 0.00010	< 0.6
M-57A	Downgradient	LCR Alluvium	08/25/2016	0.49	340	1,600	< 0.40	7.2	1,100	4,400	0.00012	0.0042	0.055	< 0.0010	< 0.00010	0.00066	--	0.0078	< 0.40	< 0.00050	< 0.20	< 0.00020	0.022	< 0.00050	< 0.00010	< 0.6
M-57A	Downgradient	LCR Alluvium	09/21/2016	0.51	340	1,600	< 0.40	7.6	1,100	3,900	< 0.00050	0.0019	0.051	< 0.0010	< 0.00010	0.016	--	0.0067	< 0.40	0.00021	< 0.20	< 0.00020	0.0029	< 0.00060	< 0.00010	< 0.7
M-57A	Downgradient	LCR Alluvium	09/21/2016	0.52	340	1,600	< 0.40	7.5	1,100	--	< 0.0025	0.0019	0.051	< 0.0010	< 0.00050	0.030	--	0.0071	< 0.40	< 0.00050	< 0.20	< 0.00020	0.0028	< 0.0030	< 0.00050	< 0.7
M-57A	Downgradient	LCR Alluvium	02/20/2017	0.60	380	1,700	< 0.40	7.1	1,400	4,400	< 0.0010	0.0051	0.041	< 0.0010	< 0.00010	0.042	--	0.0086	< 0.40	< 0.00050	< 0.20	< 0.00020	0.0048	< 0.00050	< 0.00010	1.1
M-57A	Downgradient	LCR Alluvium	04/12/2017	0.60	410	1,800	< 0.40	7.4	1,400	4,800	< 0.0010	0.0042	0.042	< 0.0010	< 0.00010	0.031	--	0.0087	< 0.40	< 0.00050	< 0.20	< 0.00020	0.0047	< 0.00050	< 0.00010	< 0.6
M-57A	Downgradient	LCR Alluvium	04/25/2017	0.60	380	1,600	< 0.40	7.1	1,300	4,600	< 0.0010	0.0039	0.042	< 0.0010	< 0.00010	0.019	--	0.0077	< 0.40	< 0.00050	< 0.20	< 0.00020	0.0042	< 0.00050	< 0.00010	< 0.6
M-57A	Downgradient	LCR Alluvium	05/18/2017	0.62	410	1,800	< 0.40	7.4	1,400	4,800	< 0.0010	0.0098	0.038	< 0.0010	< 0.00010	0.024	--	0.0076	< 0.40	< 0.00050	< 0.20	< 0.00020	0.0041	< 0.00050	< 0.00010	1.5
M-57A	Downgradient	LCR Alluvium	05/25/2017	0.59	400	1,700	< 0.40	7.3	1,400	4,900	< 0.0010	0.0066	0.044	< 0.0010	< 0.00010	0.035	--	0.0083	< 0.40	< 0.00050	< 0.20	< 0.00020	0.0063	< 0.00050	< 0.00010	0.5
M-57A	Downgradient	LCR Alluvium	07/01/2017	0.57	380	1,800	0.42	7.1	1,400	4,500	< 0.0010	0.0038	0.043	< 0.0010	< 0.00010	0.012	--	0.0075	0.42	< 0.00050	< 0.20	< 0.00020	0.0037	< 0.00050	< 0.00010	< 0.7
M-57A	Downgradient	LCR Alluvium	07/26/2017	0.64	420	1,800	< 0.40	7.1	1,600	5,000	< 0.0020	0.0027	0.042	< 0.0010	< 0.00020	0.028	--	0.0088	< 0.40	< 0.0010	< 0.20	< 0.00020	0.0058	< 0.0010	< 0.00020	< 0.7
M-57A	Downgradient	LCR Alluvium	09/08/2017	0.63	420	1,800	< 0.40	7.1	1,400	4,800	< 0.0040	0.0027	0.045	< 0.0010	< 0.00040	0.015	--	0.0082	< 0.40	< 0.0020	< 0.20	< 0.00020	0.0046	< 0.0020	< 0.00040	0.6
M-57A	Downgradient	LCR Alluvium	12/08/2017	0.63	420	1,900	< 0.40	7.2	1,300	4,800	--	--	--	--	--	--	--	--	< 0.40	--	--	--	--	--	--	--
M-																										

Groundwater Quality Data for the SEDI Monitoring Wells

				Appendix III Constituents								Appendix IV Constituents														
				Boron	Calcium	Chloride	Fluoride	pH (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Chromium	Cobalt	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Total Radium
Filtered:				N	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N	
Units:				mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	
BTV				0.23	600	3,700	0.8	7.5	630	7,800	0.05	0.004	0.08	0.001	0.002	0.004	0.004	0.002	0.8	0.01	0.2	0.002	0.011	0.01	0.0004	1.1
GWPS				--	--	--	--	--	--	--	0.05	0.01	2	0.004	0.005	0.1	0.1	0.006	4	0.015	0.2	0.002	0.1	0.05	0.002	5
M-58A	Downgradient	LCR Alluvium	05/25/2017	0.21	270	1,800	< 0.40	7.7	550	3,700	< 0.0010	0.0051	0.055	< 0.0010	< 0.00010	0.00055	--	< 0.00050	< 0.40	< 0.00050	< 0.20	< 0.00020	0.0016	< 0.00050	< 0.00010	2.2
M-58A	Downgradient	LCR Alluvium	05/25/2017	0.21	280	1,800	< 0.40	7.7	540	3,700	< 0.0010	0.0050	0.052	< 0.0010	< 0.00010	0.00054	--	< 0.00050	< 0.40	< 0.00050	< 0.20	< 0.00020	0.0016	< 0.00050	< 0.00010	< 0.6
M-58A	Downgradient	LCR Alluvium	07/01/2017	0.28	270	2,000	< 0.40	7.5	540	4,100	< 0.0010	0.0047	0.063	< 0.0010	< 0.00010	< 0.00050	--	< 0.00050	< 0.40	< 0.00050	< 0.20	< 0.00020	0.0018	< 0.00050	< 0.00010	< 0.7
M-58A	Downgradient	LCR Alluvium	07/26/2017	0.23	300	1,900	< 0.40	7.6	560	4,100	< 0.0020	0.0057	0.11	< 0.0010	< 0.00020	0.0030	--	0.0010	< 0.40	0.0011	< 0.20	< 0.00020	0.0021	< 0.0010	< 0.00020	< 0.7
M-58A	Downgradient	LCR Alluvium	09/08/2017	0.22	300	2,000	< 0.40	7.5	520	4,300	< 0.0040	0.0048	0.080	< 0.0010	< 0.00040	< 0.0040	--	< 0.0020	< 0.40	< 0.0020	< 0.20	< 0.00020	0.0022	< 0.0020	< 0.00040	< 0.7
M-58A	Downgradient	LCR Alluvium	12/08/2017	0.21	290	2,100	< 0.40	7.6	530	4,000	--	--	--	--	--	--	--	--	< 0.40	--	--	--	--	--	--	--
M-58A	Downgradient	LCR Alluvium	12/08/2017	0.20	280	2,100	< 0.40	7.6	530	3,900	--	--	--	--	--	--	--	--	< 0.40	--	--	--	--	--	--	--
M-58A	Downgradient	LCR Alluvium	05/21/2018	0.21	290	2,000	< 0.40	7.4	520	3,900	< 0.0020	0.0042	0.071	< 0.0010	< 0.00020	< 0.0020	--	< 0.0010	< 0.40	< 0.0010	< 0.20	< 0.00020	0.0018	< 0.0010	< 0.00020	0.7
M-58A	Downgradient	LCR Alluvium	08/28/2018	--	--	--	--	--	--	--	--	0.0037	0.075	--	--	< 0.0010	--	< 0.00050	--	--	--	--	0.0017	--	< 0.00010	< 0.6
M-58A	Downgradient	LCR Alluvium	08/28/2018	--	--	--	--	--	--	--	--	0.0037	0.076	--	--	< 0.0010	--	< 0.00050	--	--	--	--	0.0017	--	< 0.00010	< 0.6
M-58A	Downgradient	LCR Alluvium	10/24/2018	0.21	290	2,000	< 0.40	7.5	530	3,900	--	--	--	--	--	--	--	--	< 0.40	--	--	--	--	--	--	--
M-58A	Downgradient	LCR Alluvium	02/15/2019	0.23	310	2,100	< 0.40	7.5 J	540	--	--	0.0043	0.063	--	--	< 0.0010	--	< 0.00050	< 0.40	--	--	--	0.0018	--	< 0.00010	< 0.7
M-58A	Downgradient	LCR Alluvium	04/17/2019	--	--	--	< 0.40	--	--	--	< 0.0010	0.0039	0.059	< 0.0010	< 0.00010	< 0.0010	--	< 0.00050	< 0.40	< 0.00050	< 0.20	< 0.00020	0.0018	< 0.00050	< 0.00010	< 0.7
M-58A	Downgradient	LCR Alluvium	08/09/2019	0.22	300	2,100	< 0.8	7.4 J	530	4,200	--	0.0038	0.066	--	--	< 0.001	--	< 0.0005	< 0.8	--	< 0.2	--	0.0018	--	< 0.0001	< 0.7
M-58A	Downgradient	LCR Alluvium	11/25/2019	0.22	300	2,000	< 0.4	7.4 J	530	4,000	--	0.0046	0.079	--	--	< 0.001	--	< 0.0005	< 0.4	--	--	--	0.0018	--	< 0.0001	--
M-58A	Downgradient	LCR Alluvium	04/16/2020	< 0.25	280	2,100	< 0.8	7.5 J	590	4,300	< 0.005	0.0042	0.069	< 0.001	< 0.0005	< 0.005	--	< 0.0025	< 0.8	< 0.0025	< 1	< 0.0002	< 0.0025	< 0.0025	< 0.0005	--
M-58A	Downgradient	LCR Alluvium	10/21/2020	0.21	300	2,100	< 0.8	7.6 J	540	4,300	< 0.002	0.0066	0.073	< 0.001	< 0.0002	< 0.002	--	< 0.001	< 0.8	< 0.001	0.070	< 0.0002	0.0017	< 0.001	< 0.0002	0.5
CR-1	Supplementary	LCR Alluvium	10/09/2012	--	--	--	--	--	--	--	--	--	--	--	--	< 0.010	--	--	--	--	--	--	--	--	--	--
CR-1	Supplementary	LCR Alluvium	10/09/2012	0.146	225	--	--	7.42	--	2,890	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CR-1	Supplementary	LCR Alluvium	10/09/2012	--	--	1,100	0.80	--	270	--	--	--	--	--	--	--	--	--	0.80	--	--	--	--	--	--	--
CR-1	Supplementary	LCR Alluvium	10/09/2012	--	--	1,300	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CR-1	Supplementary	LCR Alluvium	06/04/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.010	--	--	--	--	--	--	--	--	--
CR-1	Supplementary	LCR Alluvium	06/04/2013	0.139	215	--	0.43	7.32	--	2,380	--	--	--	--	--	--	--	--	0.43	--	--	--	--	--	--	--
CR-1	Supplementary	LCR Alluvium	06/04/2013	--	--	1,100	--	--	250	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CR-1	Supplementary	LCR Alluvium	06/10/2014	0.128	229	1,100	0.48	7.79	240	2,960	--	--	--	--	--	--	< 0.01	--	0.48	--	--	--	--	--	--	--
CR-1	Supplementary	LCR Alluvium	10/30/2014	--	--	--	--	--	262	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CR-1	Supplementary	LCR Alluvium	06/16/2015	0.157	214	1,110	0.46	7.59	211	2,490	--	--	--	--	--	--	< 0.01	--	0.46	--	--	--	--	--	--	--
CR-1	Supplementary	LCR Alluvium	10/04/2016	0.18	--	1,400	0.68	7.5	300	3,100	--	--	--	--	--	--	< 0.010	--	0.68	--	--	--	--	--	--	--
CR-1	Supplementary	LCR Alluvium	11/01/2016	--	--	1,300	--	7.4	--	3,300	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CR-1	Supplementary	LCR Alluvium	06/06/2017	0.16	--	1,300	< 0.40	7.6	280	2,600	--	--	--	--	--	< 0.010	< 0.010	--	< 0.40	--	--	--	--	--	--	--
CR-1	Supplementary	LCR Alluvium	09/13/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.010	--	--	--	--	--	--	--	--	--

				Groundwater Quality Data for the SEDI Monitoring Wells																	
				Additional Analyses																	
				Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Iron	Magnesium	Manganese	Methane	Nitrate as N	Nitrate-Nitrite as N	Nitrite (as N)	Nitrogen	Nitrogen, Kjeldahl, Total	Potassium	Radium 226	Radium 228	SiO2, Silica	Sodium	Total Organic Carbon
Filtered:	N	N	N	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N			
Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L	mg/L	mg/L			
BTV				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
GWPS				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
M-62A	Background	LCR Alluvium	11/30/2015	140	< 6.0	< 6.0	--	130	--	--	--	--	--	9.5	< 0.4	< 0.7	10	1,200	--		
M-62A	Background	LCR Alluvium	03/08/2016	--	--	--	--	--	--	--	--	--	--	--	0.4	0.6	--	--	--		
M-62A	Background	LCR Alluvium	03/08/2016	--	--	--	--	--	--	--	--	--	--	--	0.5	0.7	--	--	--		
M-62A	Background	LCR Alluvium	05/05/2016	--	--	--	--	--	--	--	--	--	--	--	0.5	< 0.8	--	--	--		
M-62A	Background	LCR Alluvium	08/29/2016	--	--	--	--	--	--	--	--	--	--	--	< 0.4	0.9	--	--	--		
M-62A	Background	LCR Alluvium	09/21/2016	--	--	--	--	--	--	--	--	--	--	--	0.5	1.5	--	--	--		
M-62A	Background	LCR Alluvium	02/20/2017	190	< 6.0	< 6.0	--	150	--	--	--	--	--	7.9	0.7	0.7	--	1,200	--		
M-62A	Background	LCR Alluvium	04/13/2017	190	< 6.0	< 6.0	--	150	--	--	--	--	--	7.7	< 0.5	1.2	--	1,200	--		
M-62A	Background	LCR Alluvium	04/25/2017	190	< 6.0	< 6.0	--	160	--	--	--	--	--	8.4	< 0.4	0.9	--	1,300	--		
M-62A	Background	LCR Alluvium	04/25/2017	190	< 6.0	< 6.0	--	160	--	--	--	--	--	8.5	1.0	1.6	--	1,300	--		
M-62A	Background	LCR Alluvium	05/18/2017	190	< 6.0	< 6.0	--	160	--	--	--	--	--	8.5	< 0.5	1.2	--	1,300	--		
M-62A	Background	LCR Alluvium	05/25/2017	190	< 6.0	< 6.0	--	170	--	--	--	--	--	8.6	0.4	1.1	--	1,400	--		
M-62A	Background	LCR Alluvium	07/01/2017	190	< 6.0	< 6.0	--	160	--	--	--	--	--	8.1	< 0.5	< 0.7	--	1,300	--		
M-62A	Background	LCR Alluvium	07/26/2017	190	< 6.0	< 6.0	--	160	--	--	--	--	--	8.3	< 0.4	1.3	--	1,300	--		
M-62A	Background	LCR Alluvium	09/07/2017	210	< 6.0	< 6.0	--	170	--	--	--	--	--	8.7	< 0.5	0.9	--	1,400	--		
M-62A	Background	LCR Alluvium	12/08/2017	190	< 6.0	< 6.0	--	160	--	--	--	--	--	8.2	--	--	--	1,200	--		
M-62A	Background	LCR Alluvium	05/21/2018	190	< 6.0	< 6.0	--	160	--	--	--	--	--	7.9	< 0.4	0.7	--	1,200	--		
M-62A	Background	LCR Alluvium	08/28/2018	--	--	--	--	--	--	--	--	--	--	--	0.5	< 0.6	--	--	--		
M-62A	Background	LCR Alluvium	10/24/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
M-62A	Background	LCR Alluvium	02/15/2019	--	--	--	--	--	--	--	--	--	--	--	< 0.5	< 0.7	--	--	--		
M-62A	Background	LCR Alluvium	04/18/2019	--	--	--	--	--	--	--	--	--	--	--	< 0.5	< 0.7	--	--	--		
M-62A	Background	LCR Alluvium	04/18/2019	--	--	--	--	--	--	--	--	--	--	--	< 0.5	< 0.7	--	--	--		
M-62A	Background	LCR Alluvium	08/09/2019	--	--	--	--	--	--	--	--	--	--	--	0.8	< 0.7	--	--	--		
M-62A	Background	LCR Alluvium	08/09/2019	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.7	--	--	--		
M-62A	Background	LCR Alluvium	11/25/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
M-62A	Background	LCR Alluvium	04/16/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
M-62A	Background	LCR Alluvium	10/20/2020	--											< 0.3	< 0.8					
M-56A	Downgradient	LCR Alluvium	11/30/2015	160	< 6.0	< 6.0	--	110	--	--	--	--	--	10	< 0.5	< 0.9	16	1,100	--		
M-56A	Downgradient	LCR Alluvium	03/08/2016	--	--	--	--	--	--	--	--	--	--	--	< 0.2	< 0.4	--	--	--		
M-56A	Downgradient	LCR Alluvium	05/10/2016	--	--	--	--	--	--	--	--	--	--	--	< 0.2	0.6	--	--	--		
M-56A	Downgradient	LCR Alluvium	08/29/2016	--	--	--	--	--	--	--	--	--	--	--	< 0.4	1.6	--	--	--		
M-56A	Downgradient	LCR Alluvium	09/21/2016	--	--	--	--	--	--	--	--	--	--	--	0.6	< 0.7	--	--	--		
M-56A	Downgradient	LCR Alluvium	09/21/2016	--	--	--	--	--	--	--	--	--	--	--	< 0.4	1.6	--	--	--		
M-56A	Downgradient	LCR Alluvium	02/20/2017	180	< 6.0	< 6.0	--	71	--	--	--	--	--	7.1	0.7	1.1	--	1,100	--		
M-56A	Downgradient	LCR Alluvium	04/13/2017	190	< 6.0	< 6.0	--	74	--	--	--	--	--	7.3	< 0.5	1.2	--	1,100	--		
M-56A	Downgradient	LCR Alluvium	04/25/2017	190	< 6.0	< 6.0	--	76	--	--	--	--	--	7.7	< 0.4	1.9	--	1,200	--		
M-56A	Downgradient	LCR Alluvium	05/18/2017	200	< 6.0	< 6.0	--	77	--	--	--	--	--	7.6	< 0.8	< 1.2	--	1,100	--		
M-56A	Downgradient	LCR Alluvium	05/18/2017	190	< 6.0	< 6.0	--	78	--	--	--	--	--	7.6	0.6	1.1	--	1,100	--		
M-56A	Downgradient	LCR Alluvium	05/25/2017	200	< 6.0	< 6.0	--	74	--	--	--	--	--	7.2	0.4	1.1	--	1,100	--		
M-56A	Downgradient	LCR Alluvium	07/01/2017	200	< 6.0	< 6.0	--	79	--	--	--	--	--	7.6	< 0.5	< 0.7	--	1,100	--		
M-56A	Downgradient	LCR Alluvium	07/26/2017	190	< 6.0	< 6.0	--	81	--	--	--	--	--	7.5	0.7	1.0	--	1,100	--		
M-56A	Downgradient	LCR Alluvium	09/08/2017	200	< 6.0	< 6.0	--	82	--	--	--	--	--	7.8	0.5	< 0.6	--	1,100	--		
M-56A	Downgradient	LCR Alluvium	12/08/2017	190	< 6.0	< 6.0	--	79	--	--	--	--	--	7.3	--	--	--	1,000	--		

				Additional Analyses																
				Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Iron	Magnesium	Manganese	Methane	Nitrate as N	Nitrate-Nitrite as N	Nitrite (as N)	Nitrogen	Nitrogen, Kjeldahl, Total	Potassium	Radium 226	Radium 228	SiO2, Silica	Sodium
Filtered:				N	N	N	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N
Units:				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L	mg/L	mg/L
BTV				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
GWPS				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
M-56A	Downgradient	LCR Alluvium	05/21/2018	200	< 6.0	< 6.0	--	87	--	--	--	--	--	7.4	< 0.4	1.4	--	1,100	--	
M-56A	Downgradient	LCR Alluvium	08/28/2018	--	--	--	--	--	--	--	--	--	--	--	0.5	< 0.6	--	--	--	
M-56A	Downgradient	LCR Alluvium	10/24/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
M-56A	Downgradient	LCR Alluvium	02/15/2019	--	--	--	--	--	--	--	--	--	--	--	< 0.4	0.9	--	--	--	
M-56A	Downgradient	LCR Alluvium	02/15/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
M-56A	Downgradient	LCR Alluvium	04/18/2019	--	--	--	--	--	--	--	--	--	--	--	< 0.5	< 0.7	--	--	--	
M-56A	Downgradient	LCR Alluvium	08/09/2019	--	--	--	--	--	--	--	--	--	--	--	0.6	< 0.7	--	--	--	
M-56A	Downgradient	LCR Alluvium	11/25/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
M-56A	Downgradient	LCR Alluvium	04/16/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
M-56A	Downgradient	LCR Alluvium	04/16/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
M-56A	Downgradient	LCR Alluvium	10/21/2020	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.8	--	--	--	
M-56A	Downgradient	LCR Alluvium	10/21/2020	--	--	--	--	--	--	--	--	--	--	--	0.4	< 0.8	--	--	--	
M-57A	Downgradient	LCR Alluvium	11/30/2015	230	< 6.0	< 6.0	--	96	--	--	--	--	--	7.5	< 0.5	< 0.9	19	1,100	--	
M-57A	Downgradient	LCR Alluvium	11/30/2015	230	< 6.0	< 6.0	--	97	--	--	--	--	--	7.8	< 0.5	1.0	19	1,000	--	
M-57A	Downgradient	LCR Alluvium	03/08/2016	--	--	--	--	--	--	--	--	--	--	--	< 0.2	< 0.4	--	--	--	
M-57A	Downgradient	LCR Alluvium	05/11/2016	--	--	--	--	--	--	--	--	--	--	--	< 0.2	< 0.6	--	--	--	
M-57A	Downgradient	LCR Alluvium	08/25/2016	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.6	--	--	--	
M-57A	Downgradient	LCR Alluvium	09/21/2016	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.7	--	--	--	
M-57A	Downgradient	LCR Alluvium	09/21/2016	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.7	--	--	--	
M-57A	Downgradient	LCR Alluvium	02/20/2017	260	< 6.0	< 6.0	--	110	--	--	--	--	--	6.3	< 0.4	1.1	--	1,100	--	
M-57A	Downgradient	LCR Alluvium	04/12/2017	260	< 6.0	< 6.0	--	110	--	--	--	--	--	6.0	< 0.5	< 0.6	--	1,000	--	
M-57A	Downgradient	LCR Alluvium	04/25/2017	260	< 6.0	< 6.0	--	110	--	--	--	--	--	6.5	< 0.4	< 0.6	--	1,100	--	
M-57A	Downgradient	LCR Alluvium	05/18/2017	270	< 6.0	< 6.0	--	120	--	--	--	--	--	6.3	0.8	0.7	--	1,100	--	
M-57A	Downgradient	LCR Alluvium	05/25/2017	260	< 6.0	< 6.0	--	120	--	--	--	--	--	6.3	0.5	< 0.6	--	1,100	--	
M-57A	Downgradient	LCR Alluvium	07/01/2017	270	< 6.0	< 6.0	--	110	--	--	--	--	--	6.2	< 0.5	< 0.7	--	1,100	--	
M-57A	Downgradient	LCR Alluvium	07/26/2017	270	< 6.0	< 6.0	--	120	--	--	--	--	--	6.0	< 0.4	< 0.7	--	1,100	--	
M-57A	Downgradient	LCR Alluvium	09/08/2017	270	< 6.0	< 6.0	--	120	--	--	--	--	--	6.4	0.6	< 0.6	--	1,100	--	
M-57A	Downgradient	LCR Alluvium	12/08/2017	270	< 6.0	< 6.0	--	110	--	--	--	--	--	6.2	--	--	--	1,100	--	
M-57A	Downgradient	LCR Alluvium	05/21/2018	270	< 6.0	< 6.0	--	120	--	--	--	--	--	6.2	< 0.4	< 0.7	--	1,100	--	
M-57A	Downgradient	LCR Alluvium	05/21/2018	270	< 6.0	< 6.0	--	120	--	--	--	--	--	6.3	< 0.4	< 0.6	--	1,100	--	
M-57A	Downgradient	LCR Alluvium	08/28/2018	--	--	--	--	--	--	--	--	--	--	--	< 0.4	0.7	--	--	--	
M-57A	Downgradient	LCR Alluvium	10/24/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
M-57A	Downgradient	LCR Alluvium	02/15/2019	--	--	--	--	--	--	--	--	--	--	--	< 0.5	< 0.7	--	--	--	
M-57A	Downgradient	LCR Alluvium	04/17/2019	--	--	--	--	--	--	--	--	--	--	--	< 0.5	< 0.7	--	--	--	
M-57A	Downgradient	LCR Alluvium	08/09/2019	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.7	--	--	--	
M-57A	Downgradient	LCR Alluvium	11/25/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
M-57A	Downgradient	LCR Alluvium	11/25/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
M-57A	Downgradient	LCR Alluvium	04/16/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
M-57A	Downgradient	LCR Alluvium	10/21/2020	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.8	--	--	--	
M-58A	Downgradient	LCR Alluvium	11/30/2015	190	< 6.0	< 6.0	--	110	--	--	--	--	--	9.7	< 0.5	< 0.9	15	1,000	--	
M-58A	Downgradient	LCR Alluvium	03/08/2016	--	--	--	--	--	--	--	--	--	--	--	< 0.2	< 0.6	--	--	--	
M-58A	Downgradient	LCR Alluvium	05/11/2016	--	--	--	--	--	--	--	--	--	--	--	< 0.2	0.9	--	--	--	
M-58A	Downgradient	LCR Alluvium	08/25/2016	--	--	--	--	--	--	--	--	--	--	--	1.2	1.4	--	--	--	
M-58A	Downgradient	LCR Alluvium	09/21/2016	--	--	--	--	--	--	--	--	--	--	--	< 0.4	1.2	--	--	--	
M-58A	Downgradient	LCR Alluvium	02/20/2017	210	< 6.0	< 6.0	--	110	--	--	--	--	--	7.5	< 0.4	0.8	--	1,000	--	
M-58A	Downgradient	LCR Alluvium	04/12/2017	210	< 6.0	< 6.0	--	110	--	--	--	--	--	7.1	0.6	1.3	--	880	--	
M-58A	Downgradient	LCR Alluvium	04/25/2017	210	< 6.0	< 6.0	--	120	--	--	--	--	--	7.4	< 0.4	0.9	--	930	--	
M-58A	Downgradient	LCR Alluvium	05/18/2017	210	< 6.0	< 6.0	--	120	--	--	--	--	--	6.9	< 0.5	< 0.6	--	900	--	

Groundwater Quality Data for the SEDI Monitoring Wells

Constituent:				Additional Analyses																	
				Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Iron	Magnesium	Manganese	Methane	Nitrate as N	Nitrate-Nitrite as N	Nitrite (as N)	Nitrogen	Nitrogen, Kjeldahl, Total	Potassium	Radium 226	Radium 228	SiO2, Silica	Sodium	Total Organic Carbon
Filtered:				N	N	N	Y	N	Y	N	N	N	N	N	N	N	N	N	N		
Units:				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	ug/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L	mg/L	mg/L	
BTV				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
GWPS				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
M-58A	Downgradient	LCR Alluvium	05/25/2017	200	< 6.0	< 6.0	--	120	--	--	--	--	--	7.4	0.6	1.6	--	920	--		
M-58A	Downgradient	LCR Alluvium	05/25/2017	200	< 6.0	< 6.0	--	120	--	--	--	--	--	7.4	< 0.4	< 0.6	--	940	--		
M-58A	Downgradient	LCR Alluvium	07/01/2017	190	< 6.0	< 6.0	--	110	--	--	--	--	--	7.5	< 0.4	< 0.7	--	900	--		
M-58A	Downgradient	LCR Alluvium	07/26/2017	190	< 6.0	< 6.0	--	120	--	--	--	--	--	8.4	< 0.4	< 0.7	--	940	--		
M-58A	Downgradient	LCR Alluvium	09/08/2017	190	< 6.0	< 6.0	--	120	--	--	--	--	--	7.9	< 0.6	< 0.7	--	960	--		
M-58A	Downgradient	LCR Alluvium	12/08/2017	190	< 6.0	< 6.0	--	110	--	--	--	--	--	7.6	--	--	--	930	--		
M-58A	Downgradient	LCR Alluvium	12/08/2017	190	< 6.0	< 6.0	--	110	--	--	--	--	--	7.3	--	--	--	920	--		
M-58A	Downgradient	LCR Alluvium	05/21/2018	190	< 6.0	< 6.0	--	110	--	--	--	--	--	7.3	< 0.4	0.7	--	940	--		
M-58A	Downgradient	LCR Alluvium	08/28/2018	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.6	--	--	--		
M-58A	Downgradient	LCR Alluvium	08/28/2018	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.6	--	--	--		
M-58A	Downgradient	LCR Alluvium	10/24/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
M-58A	Downgradient	LCR Alluvium	02/15/2019	--	--	--	--	--	--	--	--	--	--	--	< 0.5	< 0.7	--	--	--		
M-58A	Downgradient	LCR Alluvium	04/17/2019	--	--	--	--	--	--	--	--	--	--	--	< 0.5	< 0.7	--	--	--		
M-58A	Downgradient	LCR Alluvium	08/09/2019	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.7	--	--	--		
M-58A	Downgradient	LCR Alluvium	11/25/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
M-58A	Downgradient	LCR Alluvium	04/16/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
M-58A	Downgradient	LCR Alluvium	10/21/2020	--	--	--	--	--	--	--	--	--	--	--	0.5	< 0.8	--	--	--		
CR-1	Supplementary	LCR Alluvium	10/09/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
CR-1	Supplementary	LCR Alluvium	10/09/2012	190	< 5.0	< 5.0	--	88.9	--	--	--	--	--	< 10	--	--	--	547	--		
CR-1	Supplementary	LCR Alluvium	10/09/2012	--	--	--	--	--	--	< 0.8	--	< 0.8	--	--	--	--	--	--	--		
CR-1	Supplementary	LCR Alluvium	10/09/2012	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
CR-1	Supplementary	LCR Alluvium	06/04/2013	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
CR-1	Supplementary	LCR Alluvium	06/04/2013	170	< 5.0	< 5.0	--	78.3	--	--	--	--	--	< 10	--	--	--	510	--		
CR-1	Supplementary	LCR Alluvium	06/04/2013	--	--	--	--	--	--	0.90	--	< 0.8	--	--	--	--	--	--	--		
CR-1	Supplementary	LCR Alluvium	06/10/2014	180	< 5.0	--	--	88.1	--	--	< 0.8	--	< 0.8	--	< 10	--	--	496	--		
CR-1	Supplementary	LCR Alluvium	10/30/2014	--	--	--	0.585	--	1.39	0.34 J	--	< 0.10 U	--	--	--	--	--	--	< 1.0 U		
CR-1	Supplementary	LCR Alluvium	06/16/2015	176	< 5.0	< 5.0	--	85.5	--	--	< 0.10	--	< 0.50	--	< 10	--	--	520	--		
CR-1	Supplementary	LCR Alluvium	10/04/2016	--	--	--	--	--	--	--	< 0.10	--	< 0.10	< 0.10	< 0.50	--	--	--	--		
CR-1	Supplementary	LCR Alluvium	11/01/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
CR-1	Supplementary	LCR Alluvium	06/06/2017	--	--	--	--	--	--	--	< 0.10	< 0.10	< 0.10	0.66	0.66	--	--	--	--		
CR-1	Supplementary	LCR Alluvium	09/13/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		

Notes:
BTV exceedances are shown in grey shaded cells. GWPS exceedence are shown in red text.
Duplicate sample dates under the same locations are either field duplicates or are instances of samples with multiple filed/lab sample IDs on the same date.

Abbreviations and Data Qualifiers:
< = less than
BTV = Background Threshold Value
GWPS = Groundwater Protection Standard
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
mg/L = milligrams per liter
pCi/L = Picocuries per liter
su = standard units
UJ = The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Groundwater Quality Data for FAP Monitoring Wells

Constituent:				Appendix III Constituents							Appendix IV Constituents																
				Boron	Calcium	Chloride	Fluoride	Ph (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Cobalt	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Total Radium
				Filtered:	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	Y	N	N	N	N	N	N	N
Units:				mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	
FAP BTV				1.3	740	5,700	0.8	7.4	5,100	15,000	0.004	0.004	0.004	0.05	0.001	0.0004	0.004	0.002	0.002	0.8	0.002	0.31	0.0002	0.0061	0.002	0.0014	1.6
FAP GWPS				--	--	--	--	--	--	0.006	0.01	0.01	2	0.004	0.005	0.1	0.006	0.006	4	0.015	0.31	0.002	0.1	0.05	0.002	5	
M-64A	Background	Alluvial	2/20/2017	1.1	570	4,000	< 8.0	7.4	4,100	11,000	< 0.0010	0.00087	--	0.036	< 0.0010	0.00011	0.0018	0.0024	--	< 8.0	< 0.00050	0.26	< 0.00020	0.0065	0.00074	< 0.00010	0.8
M-64A	Background	Alluvial	2/20/2017	1.2	520	4,500	< 0.80	7.4	4,400	10,000	< 0.0010	0.00094	--	0.034	< 0.0010	< 0.00010	0.0021	0.0015	--	< 0.80	< 0.00050	0.27	< 0.00020	0.0061	0.00082	< 0.00010	< 0.6
M-64A	Background	Alluvial	4/12/2017	1.2	550	4,200	< 2.0	7.7	4,300	13,000	< 0.0010	0.0026	--	0.019	< 0.0010	< 0.00010	0.00078	0.00082	--	< 2.0	< 0.00050	0.25	< 0.00020	0.0053	< 0.00050	< 0.00010	0.8
M-64A	Background	Alluvial	4/12/2017	1.2	500	4,200	< 0.80	7.6	4,200	13,000	< 0.0010	0.0026	--	0.019	< 0.0010	< 0.00010	0.0015	0.00068	--	< 0.80	0.00071	0.25	< 0.00020	0.0050	< 0.00050	< 0.00010	< 0.6
M-64A	Background	Alluvial	4/25/2017	1.3	490	4,100	< 0.80	7.5	4,300	11,000	< 0.0010	0.0017	--	0.015	< 0.0010	< 0.00010	< 0.00050	0.00056	--	< 0.80	< 0.00050	0.27	< 0.00020	0.0050	< 0.00050	< 0.00010	1.6
M-64A	Background	Alluvial	5/18/2017	1.3	510	4,400	< 0.80	7.6	4,400	12,000	< 0.0010	0.0016	--	0.012	< 0.0010	< 0.00010	< 0.00050	< 0.00050	--	< 0.80	< 0.00050	0.28	< 0.00020	0.0042	< 0.00050	< 0.00010	1.3
M-64A	Background	Alluvial	5/24/2017	1.2	520	4,000	< 0.80	7.4	4,100	12,000	< 0.0010	0.0023	--	0.014	< 0.0010	< 0.00010	0.00063	0.00052	--	< 0.80	< 0.0020	0.27	< 0.00020	0.0050	< 0.00050	< 0.00040	1.1
M-64A	Background	Alluvial	5/24/2017	1.3	520	4,200	< 0.80	7.4	4,400	12,000	< 0.0010	0.0019	--	0.014	< 0.0010	< 0.00010	< 0.00050	< 0.00050	--	< 0.80	< 0.0020	0.27	< 0.00020	0.0051	< 0.00050	< 0.00040	0.4
M-64A	Background	Alluvial	6/30/2017	1.2	600	5,100	< 0.80	7.3	4,700	13,000	< 0.0010	0.0033	--	0.017	< 0.0010	< 0.00010	< 0.00050	0.0011	--	< 0.80	< 0.00050	0.25	< 0.00020	0.0050	< 0.00050	< 0.00010	< 0.7
M-64A	Background	Alluvial	7/27/2017	1.3	620	4,700	< 0.80	7.4	4,600	13,000	< 0.0020	0.0027	--	0.017	< 0.0010	< 0.00020	< 0.0010	< 0.0010	--	< 0.80	< 0.0010	0.25	< 0.00020	0.0051	< 0.0010	< 0.00020	< 0.7
M-64A	Background	Alluvial	7/27/2017	1.3	640	4,900	< 0.80	7.4	4,800	13,000	< 0.0020	0.0028	--	0.017	< 0.0010	< 0.00020	< 0.0010	< 0.0010	--	< 0.80	< 0.0010	0.25	< 0.00020	0.0051	< 0.0010	< 0.00020	< 0.7
M-64A	Background	Alluvial	9/7/2017	1.2	620	4,700	< 0.80	7.3	4,300	12,000	< 0.0040	0.0025	--	0.017	< 0.0010	< 0.00040	< 0.0040	< 0.0020	--	< 0.80	< 0.0020	0.26	< 0.00020	0.0059	< 0.0020	< 0.00040	< 0.7
M-64A	Background	Alluvial	12/8/2017	1.2	500	3,500	< 0.80	7.4	4,400	12,000	--	--	--	--	--	--	--	--	--	< 0.80	--	--	--	--	--	--	--
M-64A	Background	Alluvial	2/15/2018	--	--	--	< 0.80	--	--	--	< 0.0020	< 0.0010	--	0.015	< 0.0010	< 0.00020	0.0022	< 0.00050	--	< 0.80	< 0.0010	0.27	< 0.00020	0.0058	< 0.00050	< 0.00020	1.0
M-64A	Background	Alluvial	2/15/2018	--	--	--	< 0.80	--	--	--	< 0.0020	< 0.0010	--	0.015	< 0.0010	< 0.00020	0.0022	< 0.00050	--	< 0.80	< 0.0010	0.27	< 0.00020	0.0058	< 0.00050	< 0.00020	0.966
M-64A	Background	Alluvial	5/19/2018	1.4	460	4,700	< 0.80	7.3	4,600	13,000	< 0.0020	0.0012	--	0.012	--	< 0.00020	< 0.0020	< 0.0010	--	< 0.80	< 0.0010	0.26	--	0.0055	< 0.0010	< 0.00020	< 0.7
M-64A	Background	Alluvial	10/22/2018	1.3	500	4,100	< 2.0	7.3	4,000	12,000	--	0.0011	--	0.011	--	< 0.00010	< 0.0010	< 0.00050	--	< 2.0	< 0.00050	0.25	--	0.0050	< 0.00050	< 0.00010	--
M-64A	Background	Alluvial	10/22/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.7
M-64A	Background	Alluvial	10/22/2018	1.3	510	3,900	< 0.80	7.4	3,700	13,000	--	0.0013	--	0.011	--	< 0.00010	< 0.0010	< 0.00050	--	< 0.80	< 0.00050	0.25	--	0.0052	< 0.00050	< 0.00010	--
M-64A	Background	Alluvial	10/22/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.7
M-64A	Background	Alluvial	2/13/2019	--	--	--	< 0.80	--	--	--	< 0.0010	0.00089	--	0.012	< 0.0010	< 0.00010	< 0.0010	< 0.00050	--	< 0.80	< 0.00050	0.29	< 0.00020	0.0049	0.00052	< 0.00010	< 0.6
M-64A	Background	Alluvial	4/11/2019	1.3	500	4,400	< 0.80	7.3 J	4,300	12,000	--	0.00058	--	0.011	--	< 0.0001	< 0.001	< 0.0005	--	< 0.80	< 0.0005	0.27	--	0.0050	0.00053	--	--
M-64A	Background	Alluvial	4/16/2019	--	--	--	< 0.80	--	--	--	--	0.00058	--	0.012	--	< 0.00010	< 0.0010	< 0.00050	--	< 0.80	< 0.00050	0.25	--	0.0050	0.00078	< 0.00010	< 0.7
M-64A	Background	Alluvial	8/1/2019	1.3	450	4,300	< 0.8	7.4 J	4,300	12,000	--	--	--	--	--	--	--	--	--	< 0.8	--	--	--	--	--	--	--
M-64A	Background	Alluvial	8/1/2019	1.3	450	4,200	< 0.8	7.4 J	4,300	12,000	--	--	--	--	--	--	--	--	--	< 0.8	--	--	--	--	--	--	--
M-64A	Background	Alluvial	10/24/2019	1.2	460	8,400	< 0.80	7.5 J	8,600	13,000	< 0.0020	0.0018	--	0.013 J	< 0.0010	< 0.00020	< 0.0020	< 0.0010	--	< 0.80	< 0.0010	0.26	< 0.00020	0.0059	< 0.0010	< 0.00020	--
M-64A	Background	Alluvial	5/6/2020	1.3	510	4,100	< 0.8	7.6 J	4,100	12,000	--	< 0.001	0.00093	0.012	< 0.001	< 0.0001	< 0.002	< 0.001	< 0.0005	< 0.8	< 0.0005	0.47	--	0.0043	< 0.001	--	< 0.8

Groundwater Quality Data for FAP Monitoring Wells

Constituent:				Appendix III Constituents								Appendix IV Constituents															
				Boron	Calcium	Chloride	Fluoride	Ph (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Cobalt	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Total Radium
				Filtered:	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	Y	N	N	N	N	N	N	N
Units:				mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	
FAP BTV				1.3	740	5,700	0.8	7.4	5,100	15,000	0.004	0.004	0.004	0.05	0.001	0.0004	0.004	0.002	0.002	0.8	0.002	0.31	0.0002	0.0061	0.002	0.0014	1.6
FAP GWPS				--	--	--	--	--	--	0.006	0.01	0.01	2	0.004	0.005	0.1	0.006	0.006	4	0.015	0.31	0.002	0.1	0.05	0.002	5	
M-50A	Downgradient	Alluvial	3/8/2016	2.9	660	5,300	2.0	7.37	5,700	8,300	< 0.015	< 0.0049	--	0.013	< 0.0010	< 0.00046	< 0.0087	< 0.0013	--	2.0	< 0.0044	0.47	< 0.00020	0.0059 J	0.0050 J	< 0.00026	< 0.5
M-50A	Downgradient	Alluvial	5/5/2016	3.0	680	2,500	2.2	--	2,700	8,300	0.00026	0.0025	--	0.011	< 0.0010	< 0.00010	< 0.00050	0.00051	--	2.2	< 0.00050	0.47	< 0.00020	0.0056	0.0054	< 0.00010	0.7
M-50A	Downgradient	Alluvial	8/25/2016	2.6	650	2,600	2.3	7.2	2,800	8,400	0.00018	0.0025	--	0.0084	< 0.0010	< 0.00010	< 0.00050	0.00056	--	2.3	< 0.00050	0.45	< 0.00020	0.0059	0.0049	< 0.00010	< 0.6
M-50A	Downgradient	Alluvial	9/23/2016	2.8	630	2,500	2.1	7.4	2,900	8,500	< 0.00050	0.0024	--	0.0093	< 0.0010	< 0.00010	0.0024	0.00084	--	2.1	0.00012	0.50	< 0.00020	0.0075	0.0046	0.00013	1.1
M-50A	Downgradient	Alluvial	2/21/2017	2.9	680	2,400	2.1	7.5	2,800	7,900	< 0.0010	0.0026	--	0.014	< 0.0010	< 0.00010	0.022	0.00090	--	2.1	< 0.00050	0.50	< 0.00020	0.0091	0.0043	< 0.00010	< 0.6
M-50A	Downgradient	Alluvial	4/13/2017	2.8	680	2,800	2.0	7.8	3,000	8,200	< 0.0010	0.0030	--	0.010	< 0.0010	< 0.00010	0.015	0.00093	--	2.0	< 0.00050	0.46	< 0.00020	0.0083	0.0040	< 0.00010	< 0.6
M-50A	Downgradient	Alluvial	4/26/2017	2.8	620	2,400	2.0	7.2	2,900	7,900	< 0.0010	0.0024	--	0.0084	< 0.0010	< 0.00010	0.0066	0.00069	--	2.0	< 0.00050	0.48	< 0.00020	0.0067	0.0042	< 0.00010	< 0.6
M-50A	Downgradient	Alluvial	5/18/2017	2.8	670	2,600	2.2	7.6	3,200	7,300	< 0.0010	0.0023	--	0.0081	< 0.0010	< 0.00010	0.0049	0.00056	--	2.2	< 0.00050	0.48	< 0.00020	0.0059	0.0037	< 0.00010	0.6
M-50A	Downgradient	Alluvial	5/24/2017	3.0	680	2,700	2.3	7.4	3,200	8,300	< 0.0010	0.0026	--	0.0085	< 0.0010	< 0.00010	0.0037	0.00067	--	2.3	< 0.00050	0.49	< 0.00020	0.0061	0.0044	< 0.00010	0.8
M-50A	Downgradient	Alluvial	6/30/2017	2.7	630	2,700	2.4	7.3	3,300	8,100	< 0.0010	0.0025	--	0.0084	< 0.0010	< 0.00010	0.0038	0.0014	--	2.4	< 0.00050	0.45	< 0.00020	0.028	0.0040	0.00011	< 0.7
M-50A	Downgradient	Alluvial	7/27/2017	2.8	660	2,600	2.5	7.4	3,100	8,400	< 0.0040	0.0025	--	0.0089	< 0.0010	< 0.00040	< 0.0020	< 0.0020	--	2.5	< 0.0020	0.46	< 0.00020	0.0077	0.0039	< 0.00040	< 0.7
M-50A	Downgradient	Alluvial	9/7/2017	3.0	660	2,500	2.2	7.2	3,100	8,400	< 0.0040	0.0026	--	0.0091	< 0.0010	< 0.00040	< 0.0040	< 0.0020	--	2.2	< 0.0020	0.48	< 0.00020	0.0091	0.0030	< 0.00040	< 0.6
M-50A	Downgradient	Alluvial	12/8/2017	2.9	650	2,600	2.2	7.4	3,000	8,000	--	--	--	--	--	--	--	--	--	2.2	--	--	--	--	--	--	--
M-50A	Downgradient	Alluvial	2/14/2018	--	--	--	2.4	--	--	--	< 0.0020	0.0026	--	0.0095	< 0.0010	< 0.00020	< 0.0020	< 0.0010	--	2.4	< 0.0010	0.43	< 0.00020	0.0088	0.0034	< 0.00020	0.2
M-50A	Downgradient	Alluvial	2/14/2018	--	--	--	2.6	--	--	--	< 0.0010	0.0027	--	0.0087	< 0.0010	< 0.00010	0.0010	0.00055	--	2.6	0.0012	0.44	< 0.00020	0.0085	0.0029	< 0.00010	0.5
M-50A	Downgradient	Alluvial	5/21/2018	3.0	610	2,400	2.4	7.2	3,100	7,900	--	0.0025	--	0.0086	--	< 0.00010	0.0012	0.00079	--	2.4	< 0.00050	0.43	--	0.0070	0.0027	--	0.4
M-50A	Downgradient	Alluvial	10/24/2018	3.1	630	2,200	1.9	7.4	3,100	8,100	--	0.0028	--	0.0092	--	< 0.00010	0.0046	0.00063	--	1.9	< 0.00050	0.43	--	0.0071	0.0026	--	< 0.6
M-50A	Downgradient	Alluvial	2/13/2019	--	--	--	< 0.80	--	--	--	< 0.0010	0.00076	--	0.012	< 0.0010	< 0.00010	< 0.0010	< 0.00050	--	< 0.80	< 0.00050	0.29	< 0.00020	0.0048	< 0.00050	< 0.00010	0.9
M-50A	Downgradient	Alluvial	2/13/2019	--	--	--	2.2	--	--	--	< 0.0010	0.0028	--	0.0086	< 0.0010	< 0.00010	0.0014	0.00069	--	2.2	< 0.00050	0.46	< 0.00020	0.0070	0.0027	< 0.00010	< 0.6
M-50A	Downgradient	Alluvial	4/11/2019	47	750	6,700	3.7	7.4	3,900	16,000	--	0.0016	--	0.0094	--	< 0.0001	0.0069	0.0041	--	3.7	< 0.0005	0.73	--	0.22	0.0019	--	--
M-50A	Downgradient	Alluvial	4/11/2019	3.1	610	2,200	2.0	7.4	3,000	7,700	--	0.0030	--	0.0088	--	< 0.0001	0.0011	0.00062	--	2.0	< 0.0005	0.44	--	0.0071	0.0025	--	< 0.7
M-50A	Downgradient	Alluvial	11/25/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.7
M-50A	Downgradient	Alluvial	11/25/2019	3.1	610	2,100	2.1	7.1 J	3,000	7,800	--	0.0027	--	0.010	--	< 0.00010	0.0071	0.00053	--	2.1	< 0.00050	0.43	--	0.0083	0.0022	--	--
M-50A	Downgradient	Alluvial	5/6/2020	3.0	600	1,900	2.3	7.5 J	3,000	7,700	--	0.0027	0.0024	0.0093	< 0.001	< 0.0001	0.0024	0.00066	< 0.0005	2.3	< 0.0005	0.55	--	0.0065	0.0018	--	< 0.8
M-50A	Downgradient	Alluvial	10/25/2020	2.9	560	2,100	2.2	7.3 J	3,200	7,400	< 0.002 U	0.0043	0.004	0.0096	< 0.001	0.00014	0.053	0.0016	0.0012	2.2	< 0.001	0.48	< 0.0002	0.014	0.0050	< 0.0002 U	< 0.8
M-51A	Downgradient	Alluvial	12/2/2015	33	940	6,700	4.8	7.29	2,800	13,000	< 0.0025	0.020	--	0.012	< 0.0010	< 0.00010	< 0.010	< 0.010	--	4.8	< 0.00050	0.60	< 0.00020	0.034	< 0.00010	0.00020	< 0.9
M-51A	Downgradient	Alluvial	3/9/2016	33	930	6,400	5.2	7.27	2,700	14,000	< 0.015	0.016 J	--	0.0095	< 0.0010	< 0.00046	< 0.022	< 0.0031	--	5							

Groundwater Quality Data for FAP Monitoring Wells

Constituent:				Appendix III Constituents							Appendix IV Constituents																
				Boron	Calcium	Chloride	Fluoride	Ph (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Cobalt	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Total Radium
Filtered:				N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	Y	N	N	N	N	N	N	N	
Units:				mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	
FAP BTV				1.3	740	5,700	0.8	7.4	5,100	15,000	0.004	0.004	0.004	0.05	0.001	0.0004	0.004	0.002	0.002	0.8	0.002	0.31	0.0002	0.0061	0.002	0.0014	1.6
FAP GWPS				--	--	--	--	--	--	--	0.006	0.01	0.01	2	0.004	0.005	0.1	0.006	0.006	4	0.015	0.31	0.002	0.1	0.05	0.002	5
W-125	Supplementary	Coconino	3/9/2016	0.15	120	780	0.48	7.63	330	1,800	< 0.015	< 0.0049	--	0.018	< 0.0010	< 0.00046	< 0.0087	< 0.0013	--	0.48	< 0.0044	< 0.20	< 0.00020	< 0.0040	< 0.0015	0.00040 J	2.0
W-125	Supplementary	Coconino	5/22/2016	0.16	120	810	0.53	--	320	1,900	0.00031	0.0087	--	0.019	< 0.0010	< 0.00010	< 0.00050	0.0016	--	0.53	< 0.00050	< 0.20	< 0.00020	0.0017	< 0.00050	< 0.00010	2.6
W-125	Supplementary	Coconino	8/26/2016	0.16	130	820	0.55	7.4	320	1,900	0.00018	0.0081	--	0.028	< 0.0010	< 0.00010	0.00060	0.0043	--	0.55	< 0.00050	< 0.20	< 0.00020	0.037	< 0.00050	< 0.00010	5.5
W-125	Supplementary	Coconino	9/23/2016	0.17	120	760	0.57	7.6	310	1,900	< 0.00050	0.0046	--	0.024	< 0.0010	< 0.00010	< 0.00050	0.0022	--	0.57	< 0.00010	< 0.20	< 0.00020	0.014	0.00069	< 0.00010	1.2
W-125	Supplementary	Coconino	2/20/2017	0.17	130	760	< 4.0	7.5	320	1,800	< 0.0010	0.0043	--	0.020	< 0.0010	< 0.00010	< 0.00050	0.0012	--	< 4.0	< 0.00050	< 0.20	< 0.00020	0.0024	< 0.00050	< 0.00010	3.0
W-125	Supplementary	Coconino	4/13/2017	0.16	130	810	0.52	7.9	320	1,900	< 0.0010	0.0039	--	0.020	< 0.0010	< 0.00010	< 0.00050	0.00097	--	0.52	< 0.00050	< 0.20	< 0.00020	0.0025	< 0.00050	< 0.00010	2.5
W-125	Supplementary	Coconino	4/26/2017	0.17	120	760	0.54	7.7	320	1,900	< 0.0010	0.0035	--	0.020	< 0.0010	< 0.00010	< 0.00050	0.00069	--	0.54	< 0.00050	< 0.20	< 0.00020	0.0026	< 0.00050	< 0.00010	3.5
W-125	Supplementary	Coconino	5/22/2017	0.17	130	790	0.53	7.7	320	1,800	< 0.0010	0.0024	--	0.017	< 0.0010	< 0.00010	< 0.00050	< 0.00050	--	0.53	< 0.00050	< 0.20	< 0.00020	0.0020	< 0.00050	< 0.00010	1.3
W-125	Supplementary	Coconino	5/22/2017	0.17	130	790	0.52	7.8	320	1,800	< 0.0010	0.0026	--	0.018	< 0.0010	< 0.00010	< 0.00050	< 0.00050	--	0.52	< 0.00050	< 0.20	< 0.00020	0.0022	< 0.00050	< 0.00010	2.7
W-125	Supplementary	Coconino	5/24/2017	0.17	130	800	0.55	7.7	330	1,800	< 0.0040	0.0022	--	0.020	< 0.0010	< 0.00040	< 0.0020	< 0.0020	--	0.55	< 0.0020	< 0.20	< 0.00020	0.0031	< 0.0020	< 0.00040	3.1
W-125	Supplementary	Coconino	6/29/2017	0.15	120	800	0.56	7.7	340	1,800	< 0.0010	0.0028	--	0.020	< 0.0010	< 0.00010	< 0.00050	0.00063	--	0.56	< 0.00050	< 0.20	< 0.00020	0.0024	< 0.00050	< 0.00010	2.6
W-125	Supplementary	Coconino	7/27/2017	0.18	130	780	< 0.80	7.6	330	1,900	< 0.0020	0.0030	--	0.021	< 0.0010	< 0.00020	< 0.0010	< 0.0010	--	< 0.80	< 0.0010	< 0.20	< 0.00020	0.0024	< 0.0010	< 0.00020	2.8
W-125	Supplementary	Coconino	9/6/2017	0.17	130	800	0.54	7.6	330	1,800	< 0.0040	0.0026	--	0.021	< 0.0010	< 0.00040	< 0.0040	< 0.0020	--	0.54	< 0.0020	< 0.20	< 0.00020	0.0026	< 0.0020	< 0.00040	1.2
W-125	Supplementary	Coconino	9/6/2017	0.17	130	800	0.54	7.6	330	1,900	< 0.0040	0.0027	--	0.020	< 0.0010	< 0.00040	< 0.0040	< 0.0020	--	0.54	< 0.0020	< 0.20	< 0.00020	0.0027	< 0.0020	< 0.00040	2.8
W-125	Supplementary	Coconino	5/6/2020	--	130	680	< 0.8	--	320	--	--	--	--	--	--	--	--	--	--	< 0.8	--	--	--	--	--	--	--
W-125	Supplementary	Coconino	10/24/2020	0.16	120	3,000	0.53	7.5 J	1,200	1,800	< 0.002	0.0073	--	0.022	< 0.001 U	< 0.0002	< 0.002	0.0012	--	0.53	< 0.001	0.029	< 0.0002	0.0026	< 0.001 U	< 0.0002	3.1
W-126	Downgradient	Moenkopi-Moqui	1/3/2018	--	--	6,100	3.7	--	3,800	--	--	--	--	--	--	--	--	--	--	3.7	--	--	--	--	--	--	--
W-126	Downgradient	Moenkopi-Moqui	12/5/2018	43	760	7,400	3.5 J,UJ	7.4 J	4,200	17,000	< 0.0010	0.0027 J	--	0.021 J	--	< 0.00010	0.0026 J	0.0049 J	--	3.5 J,UJ	0.00072	0.78 J	< 0.00020	0.20	0.0015 J	0.00015	< 0.6
W-126	Downgradient	Moenkopi-Moqui	4/11/2019	46	740	6,700	3.7	7.4 J	3,900	16,000	--	0.0017	--	0.011	--	< 0.0001	0.0085 J	0.0042	--	3.7	< 0.0005	0.73	--	0.22	0.0020	--	--
W-126	Downgradient	Moenkopi-Moqui	5/15/2019	--	--	--	4.0	--	--	--	--	--	--	--	--	--	--	--	--	4.0	--	--	--	--	--	--	--
W-126	Downgradient	Moenkopi-Moqui	6/24/2019	45	--	7,000	3.8	7.4	3,800	17,000	--	--	--	--	--	< 0.00010	0.012	--	--	3.8	< 0.00050	--	--	--	--	0.00012	--
W-126	Downgradient	Moenkopi-Moqui	7/11/2019	--	--	7,200	3.7	--	3,900	--	--	--	--	--	--	--	--	--	--	3.7	--	--	--	--	--	--	--
W-126	Downgradient	Moenkopi-Moqui	8/19/2019	--	--	7,200	2.8	--	4,200	--	--	--	--	--	--	--	--	--	--	2.8	--	--	--	--	--	--	--
W-126	Downgradient	Moenkopi-Moqui	11/14/2019	--	--	7,200	4.1	--	4,200	--	--	--	--	--	--	--	--	--	--	4.1	--	--	--	--	--	--	--
W-126	Downgradient	Moenkopi-Moqui	11/14/2019	--	--	7,000	4.0	--	4,200	--	--	--	--	--	--	--	--	--	--	4.0	--	--	--	--	--	--	--
W-126	Downgradient	Moenkopi-Moqui	11/26/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.7
W-126	Downgradient	Moenkopi-Moqui	11/26/2019	48	720	7,000	3.6	7.3 J	4,200	15,000	--	0.0023	--	0.010	--	< 0.00040	0.019	0.0040	--	3.6	< 0.00050	0.70	--	0.21	< 0.0020	--	--
W-126	Downgradient	Moenkopi-Moqui	5/5/2020	50	780	6,900	4.1	7.5 J	4,100	16,000	--	0.0014	0.0023	0.011	< 0.001	< 0.0002	0.0053	0.0038	0.0036	4.1	< 0.0005	1.1	--	0.22	0.0015	--	< 0.8
W-126	Downgradient	Moenkopi-Moqui	10/25/2020	43	720	6,900	4.2	7.5 J	4,500	15,000	< 0.004 U	0.002	0.0032	0.018 J	< 0.001	< 0.0004	0.011	0.0083 J	0.0041	4.2	< 0.002	0.74	< 0.0002	0.22	0.0049	0.00026	< 0.8

Constituent:				Additional Analyses																						
				Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Ammonia (as N)	Dissolved Organic Carbon	Iron	Iron	Magnesium	Manganese	Manganese	Nitrate as N	Nitrate-Nitrite as N	Nitrite (as N)	Nitrogen	Nitrogen, Kjeldahl, Total	Potassium	Radium 226	Radium 228	SiO2, Silica	Sodium	Total Organic Carbon	Uranium	
				N	N	N	N	Y	N	Y	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L	mg/L	mg/L	mg/L	mg/L
Filtered:				N	N	N	N	Y	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N			
Units:				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L	mg/L	mg/L	mg/L	mg/L		
FAP BTV				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
FAP GWPS				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
M-64A	Background	Alluvial	2/20/2017	520	< 6.0	< 6.0	--	--	--	--	220	--	--	--	--	--	--	17	0.8	< 0.6	--	3,600	--	--		
M-64A	Background	Alluvial	2/20/2017	520	< 6.0	< 6.0	--	--	--	--	220	--	--	--	--	--	--	17	< 0.4	< 0.6	--	3,600	--	--		
M-64A	Background	Alluvial	4/12/2017	520	< 6.0	< 6.0	--	--	--	--	220	--	--	--	--	--	--	14	< 0.4	0.8	--	3,700	--	--		
M-64A	Background	Alluvial	4/12/2017	520	< 6.0	< 6.0	--	--	--	--	210	--	--	--	--	--	--	14	< 0.5	< 0.6	--	3,800	--	--		
M-64A	Background	Alluvial	4/25/2017	530	< 6.0	< 6.0	--	--	--	--	220	--	--	--	--	--	--	14	0.8	0.8	--	3,600	--	--		
M-64A	Background	Alluvial	5/18/2017	530	< 6.0	< 6.0	--	--	--	--	230	--	--	--	--	--	--	14	< 0.5	1.3	--	3,600	--	--		
M-64A	Background	Alluvial	5/24/2017	530	< 6.0	< 6.0	--	--	--	--	220	--	--	--	--	--	--	13	< 0.3	1.1	--	3,600	--	--		
M-64A	Background	Alluvial	5/24/2017	530	< 6.0	< 6.0	--	--	--	--	220	--	--	--	--	--	--	14	0.4	< 0.6	--	3,700	--	--		
M-64A	Background	Alluvial	6/30/2017	450	< 6.0	< 6.0	--	--	--	--	210	--	--	--	--	--	--	14	< 0.4	< 0.7	--	3,700	--	--		
M-64A	Background	Alluvial	7/27/2017	470	< 6.0	< 6.0	--	--	--	--	220	--	--	--	--	--	--	14	< 0.4	< 0.7	--	3,600	--	--		
M-64A	Background	Alluvial	7/27/2017	470	< 6.0	< 6.0	--	--	--	--	220	--	--	--	--	--	--	15	< 0.4	< 0.7	--	3,700	--	--		
M-64A	Background	Alluvial	9/7/2017	460	< 6.0	< 6.0	--	--	--	--	210	--	--	--	--	--	--	14	< 0.5	< 0.7	--	3,700	--	--		
M-64A	Background	Alluvial	12/8/2017	540	< 6.0	< 6.0	--	--	--	--	210	--	--	--	--	--	--	14	--	--	--	3,000	--	--		
M-64A	Background	Alluvial	2/15/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3	0.7	--	--	--	--		
M-64A	Background	Alluvial	2/15/2018	520	< 6.0	< 6.0	--	--	--	--	200	--	--	--	--	--	--	13	< 0.5	< 0.7	--	4,000	--	--		
M-64A	Background	Alluvial	5/19/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
M-64A	Background	Alluvial	10/22/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	< 0.7	--	--	--	--		
M-64A	Background	Alluvial	10/22/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
M-64A	Background	Alluvial	10/22/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	< 0.7	--	--	--	--		
M-64A	Background	Alluvial	10/22/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	< 0.6	--	--	--	--		
M-64A	Background	Alluvial	2/13/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
M-64A	Background	Alluvial	4/11/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	< 0.7	--	--	--	--		
M-64A	Background	Alluvial	4/16/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
M-64A	Background	Alluvial	8/1/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
M-64A	Background	Alluvial	8/1/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
M-64A	Background	Alluvial	10/24/2019	470	< 6	< 6	0.75	5.5	5.5	4.8	220	2.3	1.9	--	< 0.5	--	--	19	< 0.4	< 0.8	--	3,800	5.5	--		
M-64A	Background	Alluvial	5/6/2020	490	< 6	< 6	0.73	5.0	5.5	5.0	230	2.2	1.9	--	< 0.5	--	--	20	< 0.4	< 0.8	--	3,400	5.1	--		
M-64A	Background	Alluvial	5/6/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.261	0.704	--	--	--	--		
M-64A	Background	Alluvial	10/24/2020	--	--	--	0.77	4.8	5.5	5.5	--	2	2.2	--	< 0.25	--	--	--	< 0.4	< 0.8	--	--	4.5	--		
M-44D	Supplementary	Coconino	12/2/2015	120	< 6.0	< 6.0	--	--	--	--	48	--	--	--	--	--	--	4.4	2.8	1.0	6.2	670	--	--		
M-44D	Supplementary	Coconino	3/10/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.8	1.3	--	--	--	--		
M-44D	Supplementary	Coconino	5/22/2016	120	< 6.0	< 6.0	--	--	--	--	47	--	--	--	--	--	--	4.1	2.7	1.2	5.6	670	--	--		
M-44D	Supplementary	Coconino	8/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.3	2.3	--	--	--	--		
M-44D	Supplementary	Coconino	9/23/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.3	2.1	--	--	--	--		
M-44D	Supplementary	Coconino	2/20/2017	120	< 6.0	< 6.0	--	--	--	--	48	--	--	--	--	--	--	4.6	2.6	1.0	--	680	--	--		
M-44D	Supplementary	Coconino	4/13/2017	120	< 6.0	< 6.0	--	--	--	--	47	--	--	--	--	--	--	4.3	2.0	2.2	--	640	--	--		
M-44D	Supplementary	Coconino	4/24/2017	120	< 6.0	< 6.0	--	--	--	--	48	--	--	--	--	--	--	4.5	2.0	< 0.6	--	680	--	--		
M-44D	Supplementary	Coconino	4/24/2017	120	< 6.0	< 6.0	--	--	--	--	48	--	--	--	--	--	--	4.5	1.7	0.7	--	670	--	--		
M-44D	Supplementary	Coconino	5/22/2017	120	< 6.0	< 6.0	--	--	--	--	49	--	--	--	--	--	--	4.5	2.5	1.1	--	680	--	--		
M-44D	Supplementary	Coconino	5/25/2017	120	< 6.0	< 6.0	--	--	--	--	50	--	--	--	--	--	--	4.7	2.1	2.6	--	700	--	--		
M-44D	Supplementary	Coconino	6/29/2017	100	< 6.0	< 6.0	--	--	--	--	47	--	--	--	--	--	--	4.1	3.1	1.5	--	640	--	--		
M-44D	Supplementary	Coconino	7/29/2017	120	< 6.0	< 6.0	--	--	--	--	50	--	--	--	--	--	--	4.5	2.2	1.0	--	670	--	--		
M-44D	Supplementary	Coconino	9/5/2017	120	< 6.0	< 6.0	--	--	--	--	49	--	--	--	--	--	--	4.5	2.9	1.4	--	680	--	--		
M-44D	Supplementary	Coconino	5/7/2020	100	< 6	< 6	--	--	--	--	49	--	--	--	--	--	--	4.8	--	--	--	630	--	--		
M-44D	Supplementary	Coconino	10/24/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.6	1.5	--	--	--	--		
M-46A	Supplementary	Alluvial	11/26/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5	1.0	--	--	--	--		
M-46A	Supplementary	Alluvial	11/26/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
M-46A	Supplementary	Alluvial	5/5/2020	200	< 6	< 6	0.82	3.8	1.0	0.68	240	3.8	3.6 J	--	< 0.5 UJ	--	--	21	< 0.4	< 0.8	--	2,700	3.2 J	--		
M-46A	Supplementary	Alluvial	10/25/2020	--	--	--	0.67	3.1 J	1.1	0.67	--	3.3	3.5	--	< 0.25	--	--	--	< 0.4	< 0.8	--	--	3.4	--		
M-50A	Downgradient	Alluvial	12/2/2015	170	< 6.0	< 6.0	--	--	--	--	250	--	--	--	--	--	--	8.8	< 0.4	< 0.7	16	1,900	--	--		
M-50A	Downgradient	Alluvial	12/2/2015	180	< 6.0	< 6.0	--	--	--	--	250	--	--	--	--	--	--	8.7	< 0.4	< 0.7	16	1,900	--	--		

Constituent:				Additional Analyses																						
				Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Ammonia (as N)	Dissolved Organic Carbon	Iron	Iron	Magnesium	Manganese	Manganese	Nitrate as N	Nitrate-Nitrite as N	Nitrite (as N)	Nitrogen	Nitrogen, Kjeldahl, Total	Potassium	Radium 226	Radium 228	SiO2, Silica	Sodium	Total Organic Carbon	Uranium	
				Filtered:	N	N	N	N	Y	N	Y	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N
				Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L	mg/L	mg/L	mg/L
FAP BTV				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
FAP GWPS				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
M-50A	Downgradient	Alluvial	3/8/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.2	< 0.5	--	--	--	--			
M-50A	Downgradient	Alluvial	5/5/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.7	< 0.8	--	--	--	--			
M-50A	Downgradient	Alluvial	8/25/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.6	--	--	--	--			
M-50A	Downgradient	Alluvial	9/23/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	1.1	--	--	--	--			
M-50A	Downgradient	Alluvial	2/21/2017	170	< 6.0	< 6.0	--	--	--	--	240	--	--	--	--	--	8.7	< 0.4	< 0.6	--	1,800	--	--			
M-50A	Downgradient	Alluvial	4/13/2017	180	< 6.0	< 6.0	--	--	--	--	230	--	--	--	--	--	7.9	< 0.6	< 0.6	--	1,700	--	--			
M-50A	Downgradient	Alluvial	4/26/2017	180	< 6.0	< 6.0	--	--	--	--	230	--	--	--	--	--	8.0	< 0.4	< 0.6	--	1,800	--	--			
M-50A	Downgradient	Alluvial	5/18/2017	180	< 6.0	< 6.0	--	--	--	--	240	--	--	--	--	--	8.1	0.6	< 0.6	--	1,800	--	--			
M-50A	Downgradient	Alluvial	5/24/2017	180	< 6.0	< 6.0	--	--	--	--	250	--	--	--	--	--	8.8	0.8	< 0.6	--	1,900	--	--			
M-50A	Downgradient	Alluvial	6/30/2017	180	< 6.0	< 6.0	--	--	--	--	230	--	--	--	--	--	7.8	< 0.5	< 0.7	--	1,800	--	--			
M-50A	Downgradient	Alluvial	7/27/2017	180	< 6.0	< 6.0	--	--	--	--	240	--	--	--	--	--	8.1	< 0.4	< 0.7	--	1,800	--	--			
M-50A	Downgradient	Alluvial	9/7/2017	180	< 6.0	< 6.0	--	--	--	--	240	--	--	--	--	--	8.3	< 0.4	< 0.6	--	1,800	--	--			
M-50A	Downgradient	Alluvial	12/8/2017	180	< 6.0	< 6.0	--	--	--	--	220	--	--	--	--	--	8.4	--	--	--	1,700	--	--			
M-50A	Downgradient	Alluvial	2/14/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2	0.1	--	--	--	--			
M-50A	Downgradient	Alluvial	2/14/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1	0.4	--	--	--	--			
M-50A	Downgradient	Alluvial	5/21/2018	180	< 6.0	< 6.0	--	--	--	--	210	--	--	--	--	--	7.5	0.4	< 0.6	--	1,700	--	--			
M-50A	Downgradient	Alluvial	10/24/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.6	--	--	--	--			
M-50A	Downgradient	Alluvial	2/13/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	0.9	--	--	--	--			
M-50A	Downgradient	Alluvial	2/13/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	< 0.6	--	--	--	--			
M-50A	Downgradient	Alluvial	4/11/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
M-50A	Downgradient	Alluvial	4/11/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.6	< 0.7	--	--	--	--			
M-50A	Downgradient	Alluvial	11/25/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.7	--	--	--	--			
M-50A	Downgradient	Alluvial	11/25/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
M-50A	Downgradient	Alluvial	5/6/2020	160	< 6	< 6	< 0.5	2.9 J	< 0.1	< 0.1	200	0.25	0.23	--	< 0.5	--	--	9.8	< 0.4	< 0.8	--	1,600	2.9	--		
M-50A	Downgradient	Alluvial	10/25/2020	--	--	--	< 0.5	2.9	0.28	0.21	--	0.24	0.22	--	< 0.25	--	--	--	< 0.4	< 0.8	--	--	2.6	--		
M-51A	Downgradient	Alluvial	12/2/2015	99	< 6.0	< 6.0	--	--	--	--	370	--	--	--	--	--	36	< 0.5	< 0.9	13	3,600	--	--			
M-51A	Downgradient	Alluvial	3/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.2	< 0.9	--	--	--	--			
M-51A	Downgradient	Alluvial	3/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.3	< 0.8	--	--	--	--			
M-51A	Downgradient	Alluvial	5/5/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.8	--	--	--	--			
M-51A	Downgradient	Alluvial	8/25/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.6	--	--	--	--			
M-51A	Downgradient	Alluvial	9/23/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.7	--	--	--	--			
M-51A	Downgradient	Alluvial	2/21/2017	94	< 6.0	< 6.0	--	--	--	--	330	--	--	--	--	--	33	< 0.4	0.6	--	3,500	--	--			
M-51A	Downgradient	Alluvial	4/13/2017	97	< 6.0	< 6.0	--	--	--	--	330	--	--	--	--	--	32	< 0.6	< 0.6	--	3,500	--	--			
M-51A	Downgradient	Alluvial	4/26/2017	97	< 6.0	< 6.0	--	--	--	--	330	--	--	--	--	--	34	< 0.4	< 0.6	--	3,500	--	--			
M-51A	Downgradient	Alluvial	5/18/2017	100	< 6.0	< 6.0	--	--	--	--	320	--	--	--	--	--	35	< 0.4	< 0.6	--	3,400	--	--			
M-51A	Downgradient	Alluvial	5/24/2017	100	< 6.0	< 6.0	--	--	--	--	360	--	--	--	--	--	38	< 0.4	0.6	--	3,600	--	--			
M-51A	Downgradient	Alluvial	6/30/2017	99	< 6.0	< 6.0	--	--	--	--	330	--	--	--	--	--	36	< 0.5	< 0.7	--	3,500	--	--			
M-51A	Downgradient	Alluvial	6/30/2017	99	< 6.0	< 6.0	--	--	--	--	340	--	--	--	--	--	37	< 0.5	< 0.7	--	3,500	--	--			
M-51A	Downgradient	Alluvial	7/27/2017	98	< 6.0	< 6.0	--	--	--	--	340	--	--	--	--	--	39	< 0.4	< 0.7	--	3,500	--	--			
M-51A	Downgradient	Alluvial	9/7/2017	99	< 6.0	< 6.0	--	--	--	--	340	--	--	--	--	--	38	< 0.4	< 0.6	--	3,500	--	--			
M-51A	Downgradient	Alluvial	12/8/2017	95	< 6.0	< 6.0	--	--	--	--	310	--	--	--	--	--	34	--	--	--	3,300	--	--			
M-51A	Downgradient	Alluvial	2/14/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1	0.1	--	--	--	--			
M-51A	Downgradient	Alluvial	5/21/2018	95	< 6.0	< 6.0	--	--	--	--	290	--	--	--	--	--	31	< 0.4	< 0.6	--	3,800	--	--			
M-51A	Downgradient	Alluvial	10/24/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.6	--	--	--	--			
M-51A	Downgradient	Alluvial	2/13/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	< 0.6	--	--	--	--			
M-51A	Downgradient	Alluvial	4/10/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.6	< 0.7	--	--	--	--			
M-51A	Downgradient	Alluvial	11/25/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.7	--	--	--	--			
M-51A	Downgradient	Alluvial	11/25/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
M-51A	Downgradient	Alluvial	5/6/2020	83	< 6	< 6	< 0.5	1.8	< 0.1	< 0.1	280	0.89	0.84	--	< 0.5	--	35	< 0.4	< 0.8	--	3,000	1.7	--			
M-51A	Downgradient	Alluvial	10/25/2020	--	--	--	< 0.5	1.6 J	0.041	< 0.1	--	0.92	0.97	--	< 0.25	--	--	< 0.4	< 0.8	--	--	1.5	--			
M-51A	Downgradient	Alluvial	10/25/2020	--	--	--	0.36	1.6 J	0.022	0.024	--	0.95	1	--	< 0.25	--	--	0.4	< 0.8	--	--	1.5	--			

Constituent:				Additional Analyses																						
				Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Ammonia (as N)	Dissolved Organic Carbon	Iron	Iron	Magnesium	Manganese	Manganese	Nitrate as N	Nitrate-Nitrite as N	Nitrite (as N)	Nitrogen	Nitrogen, Kjeldahl, Total	Potassium	Radium 226	Radium 228	SiO2, Silica	Sodium	Total Organic Carbon	Uranium	
				Filtered: N	N	N	N	Y	N	Y	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N
				Units: mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L	mg/L	mg/L	mg/L	mg/L
FAP BTV				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
FAP GWPS				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
MW-65A	Downgradient	Alluvial	12/5/2018	100	< 6.0	< 6.0	--	--	--	--	470	--	--	--	--	--	--	89	< 0.4	0.9	20	4,000	--	--		
MW-65A	Downgradient	Alluvial	12/5/2018	160	< 6.0	< 6.0	--	--	--	--	290	--	--	--	--	--	--	28	< 0.4	0.9	32	2,000	--	--		
MW-65A	Downgradient	Alluvial	2/14/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	< 0.6	--	--	--	--		
MW-65A	Downgradient	Alluvial	4/11/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
MW-65A	Downgradient	Alluvial	11/26/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.7	--	--	--	--		
MW-65A	Downgradient	Alluvial	11/26/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
MW-65A	Downgradient	Alluvial	5/5/2020	150	< 6	< 6	< 0.5	2.4	< 0.1	< 0.1	270	0.31	0.29	--	< 0.5	--	--	30	< 0.4	< 0.8	--	1,900	2.1	--		
MW-65A	Downgradient	Alluvial	10/25/2020	--	--	--	< 0.5	2.7	1.2	0.84	--	0.3	0.33	--	< 0.25	--	--	--	< 0.4	< 0.8	--	--	3.2	--		
MW-66A	Downgradient	Alluvial	12/5/2018	80	< 6.0	< 6.0	--	--	--	--	280	--	--	--	--	--	--	11	< 0.4	< 0.6	55	2,500	--	--		
MW-66A	Downgradient	Alluvial	2/14/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.6	--	--	--	--		
MW-66A	Downgradient	Alluvial	4/11/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
MW-66A	Downgradient	Alluvial	11/26/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.7	--	--	--	--		
MW-66A	Downgradient	Alluvial	11/26/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
MW-66A	Downgradient	Alluvial	11/26/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.7	--	--	--	--		
MW-66A	Downgradient	Alluvial	11/26/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
MW-66A	Downgradient	Alluvial	5/5/2020	150	< 6	< 6	< 0.5	2.3	0.23	0.15	280	4.3	4.1	--	< 0.5	--	--	14	< 0.4	< 0.8	--	2,400	2.7	--		
MW-66A	Downgradient	Alluvial	10/25/2020	--	--	--	< 0.5	2.3	0.27	0.25	--	3.8	4.1	--	< 0.25	--	--	--	< 0.4	< 0.8	--	--	2.3	--		
MW-67A	Downgradient	Alluvial	12/5/2018	180	< 6.0	< 6.0	--	--	--	--	270	--	--	--	--	--	--	12	< 0.4	< 0.6	41	1,400	--	--		
MW-67A	Downgradient	Alluvial	2/14/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	1.4	--	--	--	--		
MW-67A	Downgradient	Alluvial	4/11/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
MW-67A	Downgradient	Alluvial	11/26/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	0.9	--	--	--	--		
MW-67A	Downgradient	Alluvial	11/26/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
MW-67A	Downgradient	Alluvial	5/5/2020	170	< 6	< 6	1.4	2.2	8.0	7.8	290	5.1	4.9	--	< 0.5	--	--	14	< 0.4	< 0.8	--	1,500	2.3	--		
MW-67A	Downgradient	Alluvial	10/25/2020	--	--	--	1.4	2.2	8.2	8	--	4.7	5.1	--	< 0.25	--	--	--	< 0.4	< 0.8	--	--	2.1	--		
W-123	Downgradient	Moenkopi-Moqui	12/3/2015	59	< 6.0	< 6.0	--	--	--	--	310	--	--	--	--	--	--	34	0.7	< 0.7	15	4,000	--	--		
W-123	Downgradient	Moenkopi-Moqui	3/8/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.3	< 0.4	--	--	--	--		
W-123	Downgradient	Moenkopi-Moqui	5/6/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.8	--	--	--	--		
W-123	Downgradient	Moenkopi-Moqui	8/25/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5	< 0.6	--	--	--	--		
W-123	Downgradient	Moenkopi-Moqui	9/22/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.6	< 0.7	--	--	--	--		
W-123	Downgradient	Moenkopi-Moqui	2/20/2017	68	< 6.0	< 6.0	--	--	--	--	310	--	--	--	--	--	--	47	< 0.4	< 0.6	--	3,900	--	--		
W-123	Downgradient	Moenkopi-Moqui	4/13/2017	69	< 6.0	< 6.0	--	--	--	--	300	--	--	--	--	--	--	43	< 0.4	< 0.6	--	3,800	--	--		
W-123	Downgradient	Moenkopi-Moqui	4/26/2017	70	< 6.0	< 6.0	--	--	--	--	290	--	--	--	--	--	--	44	< 0.4	< 0.6	--	3,700	--	--		
W-123	Downgradient	Moenkopi-Moqui	5/22/2017	73	< 6.0	< 6.0	--	--	--	--	310	--	--	--	--	--	--	48	< 0.5	< 0.6	--	4,100	--	--		
W-123	Downgradient	Moenkopi-Moqui	5/24/2017	72	< 6.0	< 6.0	--	--	--	--	290	--	--	--	--	--	--	44	< 0.3	< 0.6	--	3,800	--	--		
W-123	Downgradient	Moenkopi-Moqui	6/30/2017	77	< 6.0	< 6.0	--	--	--	--	310	--	--	--	--	--	--	47	< 0.4	< 0.7	--	3,900	--	--		
W-123	Downgradient	Moenkopi-Moqui	7/27/2017	79	< 6.0	< 6.0	--	--	--	--	310	--	--	--	--	--	--	51	< 0.4	< 0.6	--	3,900	--	--		
W-123	Downgradient	Moenkopi-Moqui	9/7/2017	84	< 6.0	< 6.0	--	--	--	--	320	--	--	--	--	--	--	52	< 0.5	< 0.7	--	3,900	--	--		
W-123	Downgradient	Moenkopi-Moqui	12/8/2017	69	< 6.0	< 6.0	--	--	--	--	300	--	--	--	--	--	--	48	--	--	--	3,800	--	--		
W-123	Downgradient	Moenkopi-Moqui	2/14/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1	0.4	--	--	--	--		
W-123	Downgradient	Moenkopi-Moqui	5/21/2018	74	< 6.0	< 6.0	--	--	--	--	290	--	--	--	--	--	--	45	< 0.4	0.8	--	4,500	--	--		
W-123	Downgradient	Moenkopi-Moqui	10/24/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	< 0.7	--	--	--	--		
W-123	Downgradient	Moenkopi-Moqui	10/24/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.6	--	--	--	--		
W-123	Downgradient	Moenkopi-Moqui	2/13/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.6	--	--	--	--		
W-123	Downgradient	Moenkopi-Moqui	4/11/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.6	< 0.7	--	--	--	--		
W-123	Downgradient	Moenkopi-Moqui	4/11/2019	--	--	Downgradient	--	--	--	--	--	--	--	--	--	--	--	--	< 0.6	< 0.7	--	--	--	--		
W-123	Downgradient	Moenkopi-Moqui	8/1/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-123	Downgradient	Moenkopi-Moqui	11/25/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.7	--	--	--	--		
W-123	Downgradient	Moenkopi-Moqui	11/25/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-123	Downgradient	Moenkopi-Moqui	5/6/2020	54	< 6	< 6	< 0.5	1.9	0.16	< 0.1	270	< 0.01	< 0.01	--	0.83	--	--	48	< 0.4	< 0.8	--	3,500	2.1	--		
W-123	Downgradient	Moenkopi-Moqui	10/26/2020	--	--	--	< 0.5	1.7	0.3	0.075	--	0.12	0.022	--	0.79	--	--	--	< 0.4	< 0.8	--	--	1.5	--		
W-125	Supplementary	Coconino	12/2/2015	170	< 6.0	< 6.0	--	--	--	--	51	--	--	--	--	--	--	3.7	2.8	2.6	12	500	--	--		

				Groundwater Quality Data for FAP Monitoring Wells																						
				Additional Analyses																						
Constituent:				Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Ammonia (as N)	Dissolved Organic Carbon	Iron	Iron	Magnesium	Manganese	Manganese	Nitrate as N	Nitrate-Nitrite as N	Nitrite (as N)	Nitrogen	Nitrogen, Kjeldahl, Total	Potassium	Radium 226	Radium 228	SiO2, Silica	Sodium	Total Organic Carbon	Uranium	
Filtered:				N	N	N	N	Y	N	Y	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	
Units:				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L	mg/L	mg/L	mg/L
FAP BTV				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
FAP GWPS				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
W-125	Supplementary	Coconino	3/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.4	0.6	--	--	--	--	
W-125	Supplementary	Coconino	5/22/2016	170	< 6.0	< 6.0	--	--	--	--	48	--	--	--	--	--	--	--	3.5	1.3	1.3	11	460	--	--	
W-125	Supplementary	Coconino	8/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2.4	3.1	--	--	--	--	
W-125	Supplementary	Coconino	9/23/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.2	< 0.7	--	--	--	--	
W-125	Supplementary	Coconino	2/20/2017	170	< 6.0	< 6.0	--	--	--	--	49	--	--	--	--	--	--	--	3.7	1.7	1.3	--	490	--	--	
W-125	Supplementary	Coconino	4/13/2017	170	< 6.0	< 6.0	--	--	--	--	47	--	--	--	--	--	--	--	3.4	1.3	1.2	--	450	--	--	
W-125	Supplementary	Coconino	4/26/2017	180	< 6.0	< 6.0	--	--	--	--	48	--	--	--	--	--	--	--	3.6	1.3	2.2	--	480	--	--	
W-125	Supplementary	Coconino	5/22/2017	180	< 6.0	< 6.0	--	--	--	--	51	--	--	--	--	--	--	--	3.7	1.3	< 0.6	--	480	--	--	
W-125	Supplementary	Coconino	5/22/2017	180	< 6.0	< 6.0	--	--	--	--	50	--	--	--	--	--	--	--	3.6	1.0	1.7	--	470	--	--	
W-125	Supplementary	Coconino	5/24/2017	180	< 6.0	< 6.0	--	--	--	--	51	--	--	--	--	--	--	--	3.7	1.8	1.3	--	490	--	--	
W-125	Supplementary	Coconino	6/29/2017	180	< 6.0	< 6.0	--	--	--	--	48	--	--	--	--	--	--	--	3.4	1.1	1.5	--	440	--	--	
W-125	Supplementary	Coconino	7/27/2017	180	< 6.0	< 6.0	--	--	--	--	51	--	--	--	--	--	--	--	3.7	1.7	1.1	--	480	--	--	
W-125	Supplementary	Coconino	9/6/2017	180	< 6.0	< 6.0	--	--	--	--	50	--	--	--	--	--	--	--	3.7	< 0.5	1.2	--	470	--	--	
W-125	Supplementary	Coconino	9/6/2017	180	< 6.0	< 6.0	--	--	--	--	50	--	--	--	--	--	--	--	3.7	1.7	1.1	--	470	--	--	
W-125	Supplementary	Coconino	5/6/2020	160	< 6	< 6	--	--	--	--	51	--	--	--	--	--	--	--	4.3	--	--	--	450	--	--	
W-125	Supplementary	Coconino	10/24/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.7	1.4	--	--	--	--	
W-126	Downgradient	Moenkopi-Moqui	1/3/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
W-126	Downgradient	Moenkopi-Moqui	12/5/2018	100	< 6.0	< 6.0	--	--	--	--	470	--	--	--	--	--	--	--	91	< 0.4	< 0.6	24 J	4,000	--	--	
W-126	Downgradient	Moenkopi-Moqui	4/11/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
W-126	Downgradient	Moenkopi-Moqui	5/15/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
W-126	Downgradient	Moenkopi-Moqui	6/24/2019	--	--	--	--	--	--	--	--	--	--	< 0.10	< 0.10	< 0.10	< 0.10	< 0.50	--	--	--	--	--	--	--	
W-126	Downgradient	Moenkopi-Moqui	7/11/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
W-126	Downgradient	Moenkopi-Moqui	8/19/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
W-126	Downgradient	Moenkopi-Moqui	11/14/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
W-126	Downgradient	Moenkopi-Moqui	11/14/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
W-126	Downgradient	Moenkopi-Moqui	11/26/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.7	--	--	--	--	
W-126	Downgradient	Moenkopi-Moqui	11/26/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
W-126	Downgradient	Moenkopi-Moqui	5/5/2020	95	< 6	< 6	< 0.5	2.3	< 0.1	< 0.1	500	0.12	0.10	--	< 0.5	--	--	--	87	< 0.4	< 0.8	--	4,200	2.3	--	
W-126	Downgradient	Moenkopi-Moqui	10/25/2020	--	--	--	< 0.5	1.9	0.064	0.048	--	0.29	0.3	--	< 0.25	--	--	--	--	< 0.4	< 0.8	--	--	1.9	--	

Notes:

BTV exceedances are shown in grey shaded cells. GWPS exceedence are shown in red text.
Duplicate sample dates under the same location are either field duplicates or are instances of samples with multiple field/lab sample IDs on the same date.

Abbreviations and Data Qualifiers:

< = less than
BTV = Background Threshold Value
degrees C = degrees Celsius
FAP = Fly Ash Pond
GWPS = Groundwater Protection Standard
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
mg/L = milligrams per liter
pCi/L = Picocuries per liter
su = standard units
UJ = The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Groundwater Quality Data for BAP Monitoring Wells

Constituent:				Appendix III Constituents							Appendix IV Constituents																
				Boron	Calcium	Chloride	Fluoride	Ph (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Cobalt	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Total Radium
Filtered:	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	Y	N	N	N	N	N	N	N	N		
Units:	mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L		
BAP BTV				1.3	740	5,700	0.8	7.4	5,100	15,000	0.004	0.004	0.004	0.05	0.001	0.0004	0.004	0.002	0.002	0.8	0.002	0.31	0.0002	0.0061	0.002	0.0014	1.6
BAP GWPS				--	--	--	--	--	--	--	0.006	0.01	0.01	2	0.004	0.005	0.1	0.006	0.006	4	0.015	0.31	0.002	0.1	0.05	0.002	5
M-64A	Background	Alluvial	2/20/2017	1.1	570	4,000	< 8.0	7.4	4,100	11,000	< 0.0010	0.00087	--	0.036	< 0.0010	0.00011	0.0018	0.0024	--	< 8.0	< 0.00050	0.26	< 0.00020	0.0065	0.00074	< 0.00010	0.8
M-64A	Background	Alluvial	2/20/2017	1.2	520	4,500	< 0.80	7.4	4,400	10,000	< 0.0010	0.00094	--	0.034	< 0.0010	< 0.00010	0.0021	0.0015	--	< 0.80	< 0.00050	0.27	< 0.00020	0.0061	0.00082	< 0.00010	< 0.6
M-64A	Background	Alluvial	4/12/2017	1.2	550	4,200	< 2.0	7.7	4,300	13,000	< 0.0010	0.0026	--	0.019	< 0.0010	< 0.00010	0.00078	0.00082	--	< 2.0	< 0.00050	0.25	< 0.00020	0.0053	< 0.00050	< 0.00010	0.8
M-64A	Background	Alluvial	4/12/2017	1.2	500	4,200	< 0.80	7.6	4,200	13,000	< 0.0010	0.0026	--	0.019	< 0.0010	< 0.00010	0.0015	0.00068	--	< 0.80	0.00071	0.25	< 0.00020	0.0050	< 0.00050	< 0.00010	< 0.6
M-64A	Background	Alluvial	4/25/2017	1.3	490	4,100	< 0.80	7.5	4,300	11,000	< 0.0010	0.0017	--	0.015	< 0.0010	< 0.00010	< 0.00050	0.00056	--	< 0.80	< 0.00050	0.27	< 0.00020	0.0050	< 0.00050	< 0.00010	1.6
M-64A	Background	Alluvial	5/18/2017	1.3	510	4,400	< 0.80	7.6	4,400	12,000	< 0.0010	0.0016	--	0.012	< 0.0010	< 0.00010	< 0.00050	< 0.00050	--	< 0.80	< 0.00050	0.28	< 0.00020	0.0042	< 0.00050	< 0.00010	1.3
M-64A	Background	Alluvial	5/24/2017	1.2	520	4,000	< 0.80	7.4	4,100	12,000	< 0.0010	0.0023	--	0.014	< 0.0010	< 0.00010	0.00063	0.00052	--	< 0.80	< 0.0020	0.27	< 0.00020	0.0050	< 0.00050	< 0.00040	1.1
M-64A	Background	Alluvial	5/24/2017	1.3	520	4,200	< 0.80	7.4	4,400	12,000	< 0.0010	0.0019	--	0.014	< 0.0010	< 0.00010	< 0.00050	< 0.00050	--	< 0.80	< 0.0020	0.27	< 0.00020	0.0051	< 0.00050	< 0.00040	0.4
M-64A	Background	Alluvial	6/30/2017	1.2	600	5,100	< 0.80	7.3	4,700	13,000	< 0.0010	0.0033	--	0.017	< 0.0010	< 0.00010	< 0.00050	0.0011	--	< 0.80	< 0.00050	0.25	< 0.00020	0.0050	< 0.00050	< 0.00010	< 0.7
M-64A	Background	Alluvial	7/27/2017	1.3	620	4,700	< 0.80	7.4	4,600	13,000	< 0.0020	0.0027	--	0.017	< 0.0010	< 0.00020	< 0.0010	< 0.0010	--	< 0.80	< 0.0010	0.25	< 0.00020	0.0051	< 0.0010	< 0.00020	< 0.7
M-64A	Background	Alluvial	7/27/2017	1.3	640	4,900	< 0.80	7.4	4,800	13,000	< 0.0020	0.0028	--	0.017	< 0.0010	< 0.00020	< 0.0010	< 0.0010	--	< 0.80	< 0.0010	0.25	< 0.00020	0.0051	< 0.0010	< 0.00020	< 0.7
M-64A	Background	Alluvial	9/7/2017	1.2	620	4,700	< 0.80	7.3	4,300	12,000	< 0.0040	0.0025	--	0.017	< 0.0010	< 0.00040	< 0.0040	< 0.0020	--	< 0.80	< 0.0020	0.26	< 0.00020	0.0059	< 0.0020	< 0.00040	< 0.7
M-64A	Background	Alluvial	12/8/2017	1.2	500	3,500	< 0.80	7.4	4,400	12,000	--	--	--	--	--	--	--	--	--	< 0.80	--	--	--	--	--	--	--
M-64A	Background	Alluvial	2/15/2018	--	--	--	< 0.80	--	--	--	< 0.0020	< 0.0010	--	0.015	< 0.0010	< 0.00020	0.0022	< 0.00050	--	< 0.80	< 0.0010	0.27	< 0.00020	0.0058	< 0.00050	< 0.00020	1.0
M-64A	Background	Alluvial	5/19/2018	1.4	460	4,700	< 0.80	7.3	4,600	13,000	< 0.0020	0.0012	--	0.012	--	< 0.00020	< 0.0020	< 0.0010	--	< 0.80	< 0.0010	0.26	--	0.0055	< 0.0010	< 0.00020	< 0.7
M-64A	Background	Alluvial	10/22/2018	1.3	500	4,100	< 2.0	7.3	4,000	12,000	--	0.0011	--	0.011	--	< 0.00010	< 0.0010	< 0.00050	--	< 2.0	< 0.00050	0.25	--	0.0050	< 0.00050	< 0.00010	--
M-64A	Background	Alluvial	10/22/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.7
M-64A	Background	Alluvial	10/22/2018	1.3	510	3,900	< 0.80	7.4	3,700	13,000	--	0.0013	--	0.011	--	< 0.00010	< 0.0010	< 0.00050	--	< 0.80	< 0.00050	0.25	--	0.0052	< 0.00050	< 0.00010	--
M-64A	Background	Alluvial	10/22/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.7
M-64A	Background	Alluvial	2/13/2019	--	--	--	< 0.80	--	--	--	< 0.0010	0.00089	--	0.012	< 0.0010	< 0.00010	< 0.0010	< 0.00050	--	< 0.80	< 0.00050	0.29	< 0.00020	0.0049	0.00052	< 0.00010	< 0.6
M-64A	Background	Alluvial	4/11/2019	1.3	500	4,400	< 0.80	7.3 J	4,300	12,000	--	0.00058	--	0.011	--	< 0.0001	< 0.001	< 0.0005	--	< 0.80	< 0.0005	0.27	--	0.0050	0.00053	--	--
M-64A	Background	Alluvial	4/16/2019	--	--	--	< 0.80	--	--	--	--	0.00058	--	0.012	--	< 0.00010	< 0.0010	< 0.00050	--	< 0.80	< 0.00050	0.25	--	0.0050	0.00078	< 0.00010	< 0.7
M-64A	Background	Alluvial	8/1/2019	1.3	450	4,300	< 0.8	7.4 J	4,300	12,000	--	--	--	--	--	--	--	--	--	< 0.8	--	--	--	--	--	--	--
M-64A	Background	Alluvial	8/1/2019	1.3	450	4,200	< 0.8	7.4 J	4,300	12,000	--	--	--	--	--	--	--	--	--	< 0.8	--	--	--	--	--	--	--
M-64A	Background	Alluvial	10/24/2019	1.2	460	8,400	< 0.80	7.5 J	8,600	13,000	< 0.0020	0.0018	--	0.013 J	< 0.0010	< 0.00020	< 0.0020	< 0.0010	--	< 0.80	< 0.0010	0.26	< 0.00020	0.0059	< 0.0010	< 0.00020	--
M-64A	Background	Alluvial	5/6/2020	1.3	510	4,100	< 0.8	7.6 J	4,100	12,000	--	< 0.001	0.00093	0.012	< 0.001	< 0.0001	< 0.002	< 0.001	< 0.0005	< 0.8	< 0.0005	0.47	--	0.0043	< 0.001	--	< 0.8
M-64A	Background	Alluvial	5/6/2020	1.2	520	3,900	< 0.																				

Groundwater Quality Data for BAP Monitoring Wells

Constituent:				Appendix III Constituents							Appendix IV Constituents																
				Boron	Calcium	Chloride	Fluoride	Ph (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Cobalt	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Total Radium
Filtered:	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	Y	N	N	N	N	N	N	N	N			
Units:	mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L		
BAP BTV				1.3	740	5,700	0.8	7.4	5,100	15,000	0.004	0.004	0.004	0.05	0.001	0.0004	0.004	0.002	0.002	0.8	0.002	0.31	0.0002	0.0061	0.002	0.0014	1.6
BAP GWPS				--	--	--	--	--	--	--	0.006	0.01	0.01	2	0.004	0.005	0.1	0.006	0.006	4	0.015	0.31	0.002	0.1	0.05	0.002	5
M-52A	Downgradient	Alluvial/Moqui	10/24/2019	3.2	760	3,400	0.91	7.0 J	2,900	9,300	< 0.0020	0.0012	--	0.017	< 0.0010	0.0019	0.024	0.070	--	0.91	< 0.0010	0.22	< 0.00020	0.078	0.0011	< 0.00020	--
M-52A	Downgradient	Alluvial/Moqui	4/19/2020	4.1	700	4,300	0.88	7.2 J	3,400	11,000	--	< 0.0025	< 0.0025	0.014	0.00056 J	< 0.0005	0.018	0.039	0.042	0.88	< 0.0005	< 0.2	--	0.022	< 0.005	0.00010	--
M-52A	Downgradient	Alluvial/Moqui	10/22/2020	2.9	660	2,500	1.5	7.4 J	3,000	7,700	< 0.002 U	0.0012	0.0016 J	0.014	< 0.001	0.002	0.0087	0.067	0.070	1.5	0.00053 J	0.20	< 0.0002	0.086	0.0026	0.00008 J	< 0.8
M-53A	Downgradient	Alluvial	12/1/2015	2.9	740	2,600	0.87	7.57	2,900	8,100	< 0.0025	0.0014	--	0.021	< 0.0010	0.0013	0.0014	0.024	--	0.87	0.00058	0.21	< 0.00020	0.041	0.00071	< 0.00010	< 0.7
M-53A	Downgradient	Alluvial	3/9/2016	2.4	770	2,500	0.94	7.44	2,600	7,400	< 0.015	< 0.0049	--	0.024	< 0.0010	0.0024	< 0.0087	0.023	--	0.94	< 0.0044	< 0.20	< 0.00020	0.036	< 0.0015	< 0.00026	0.5
M-53A	Downgradient	Alluvial	5/10/2016	2.4	750	2,400	< 2.0	--	2,600	7,800	< 0.00020	0.0018	--	0.021	< 0.0010	0.0014	0.0010	0.022	--	< 2.0	< 0.0010	< 0.20	< 0.00020	0.037	< 0.0010	< 0.00020	< 0.5
M-53A	Downgradient	Alluvial	5/10/2016	2.4	750	2,400	< 2.0	--	2,500	7,800	< 0.00020	0.0018	--	0.021	< 0.0010	0.0014	0.0015	0.023	--	< 2.0	< 0.0010	< 0.20	< 0.00020	0.037	< 0.0010	< 0.00020	< 0.4
M-53A	Downgradient	Alluvial	8/26/2016	3.1	660	2,400	2.3	7.4	3,000	8,100	0.00010	0.0012	--	0.0092	< 0.0010	0.0017	0.00090	0.016	--	2.3	0.00057	0.20	< 0.00020	0.049	< 0.00050	< 0.00010	< 0.6
M-53A	Downgradient	Alluvial	8/26/2016	3.0	660	2,400	2.3	7.4	3,000	8,000	< 0.00010	0.0012	--	0.0094	< 0.0010	0.0018	0.0011	0.018	--	2.3	0.00057	0.20	< 0.00020	0.053	< 0.00050	< 0.00010	0.6
M-53A	Downgradient	Alluvial	9/22/2016	3.0	640	2,500	0.98	7.6	3,000	8,300	< 0.00050	0.0013	--	0.0092	< 0.0010	0.0016	0.0010	0.017	--	2.2	0.00062	0.21	< 0.00020	0.048	0.00066	< 0.00010	< 0.7
M-53A	Downgradient	Alluvial	2/21/2017	3.1	660	2,300	2.0	7.5	2,900	7,600	< 0.0010	0.00098	--	0.0091	< 0.0010	0.0015	0.0062	0.018	--	2.0	< 0.00050	0.21	< 0.00020	0.047	< 0.00050	< 0.00010	< 0.6
M-53A	Downgradient	Alluvial	4/12/2017	3.0	710	2,800	1.3	7.5	2,700	8,100	< 0.0010	0.0017	--	0.018	< 0.0010	0.0015	0.0038	0.018	--	1.3	0.00077	< 0.20	< 0.00020	0.037	0.00067	< 0.00010	0.6
M-53A	Downgradient	Alluvial	4/25/2017	2.6	740	2,500	1.3	7.4	2,700	7,900	< 0.0010	0.00083	--	0.013	< 0.0010	0.0018	0.0020	0.015	--	1.3	< 0.00050	< 0.20	< 0.00020	0.027	< 0.00050	< 0.00010	< 0.6
M-53A	Downgradient	Alluvial	5/18/2017	3.1	640	2,400	2.2	7.7	3,200	8,100	< 0.0010	0.00096	--	0.0079	< 0.0010	0.0014	0.0011	0.016	--	2.2	< 0.00050	0.21	< 0.00020	0.041	< 0.00050	< 0.00010	< 0.6
M-53A	Downgradient	Alluvial	5/24/2017	3.3	660	2,300	2.4	7.6	3,100	7,600	< 0.0010	0.0011	--	0.0083	< 0.0010	0.0015	0.0014	0.016	--	2.4	0.00052	0.20	< 0.00020	0.043	< 0.00050	< 0.00010	< 0.4
M-53A	Downgradient	Alluvial	7/1/2017	3.1	600	2,500	2.6	7.4	3,300	7,700	< 0.0010	0.0011	--	0.0085	< 0.0010	0.0014	0.0014	0.016	--	2.6	< 0.00050	0.20	< 0.00020	0.042	< 0.00050	< 0.00010	< 0.7
M-53A	Downgradient	Alluvial	7/28/2017	3.3	670	2,500	2.4	7.5	3,300	7,900	< 0.0020	0.0010	--	0.0087	< 0.0010	0.0014	0.0017	0.017	--	2.4	< 0.0010	0.20	< 0.00020	0.045	< 0.0010	< 0.00020	< 0.7
M-53A	Downgradient	Alluvial	9/7/2017	3.3	650	2,400	2.3	7.5	3,100	7,900	< 0.0040	< 0.0020	--	0.0086	< 0.0010	0.0015	< 0.0040	0.017	--	2.3	< 0.0020	0.20	< 0.00020	0.046	< 0.0020	< 0.00040	< 0.6
M-53A	Downgradient	Alluvial	12/7/2017	3.2	630	2,400	2.3	7.6	3,000	7,900	--	--	--	--	--	--	--	--	--	2.3	--	--	--	--	--	--	--
M-53A	Downgradient	Alluvial	2/15/2018	--	--	--	1.4	--	--	--	< 0.0010	0.00076	--	0.018	< 0.0010	0.0012	0.0010	0.011	--	1.4	< 0.00050	< 0.20	< 0.00020	0.0059	0.00057	0.00012	0.4
M-53A	Downgradient	Alluvial	5/20/2018	3.2	600	2,300	2.6	7.4	3,100	7,900	< 0.0010	0.0011	--	0.0090	--	0.0012	0.0015	0.015	--	2.6	< 0.00050	< 0.20	--	0.044	< 0.00050	< 0.00010	< 0.7
M-53A	Downgradient	Alluvial	5/20/2018	3.3	620	2,400	2.4	7.4	3,400	7,800	< 0.0010	0.0011	--	0.0091	--	0.0013	0.0015	0.016	--	2.4	< 0.00050	< 0.20	--	0.045	< 0.00050	0.00015	< 0.7
M-53A	Downgradient	Alluvial	10/26/2018	3.2	620	2,200	2.1	7.5	2,900	7,500	--	0.0012	--	0.0081	--	0.0013	0.0019	0.013	--	2.1	< 0.00050	< 0.20	--	0.042	< 0.00050	< 0.00010	--
M-53A	Downgradient	Alluvial	10/26/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.7
M-53A	Downgradient	Alluvial	12/7/2018	3.3	600	2,300	2.3 J,UJ	7.4 J	3,100	8,000	< 0.0050	< 0.0020	--	0.0087	--	0.0012	< 0.0050	0.013	--	2.3 J,UJ	0.0014	< 0.20	< 0.00020	0.039	< 0.0060	< 0.0010	0.9
M-53A	Downgradient	Alluvial	12/7/2018	3.4	620	2,300	2.3 J,UJ	7.4 J	3,000	7,600	< 0.0050	< 0.0020	--	0.0085	--	0.0014	< 0.0050	0.014	--	2.3 J,UJ	< 0.0010	0.20	< 0.00020				

Groundwater Quality Data for BAP Monitoring Wells

Constituent:				Appendix III Constituents							Appendix IV Constituents																
				Boron	Calcium	Chloride	Fluoride	Ph (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Cobalt	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Total Radium
				N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	Y	N	N	N	N	N	N	N
Filtered:				N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
Units:				mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	
BAP BTV				1.3	740	5,700	0.8	7.4	5,100	15,000	0.004	0.004	0.004	0.05	0.001	0.0004	0.004	0.002	0.002	0.8	0.002	0.31	0.0002	0.0061	0.002	0.0014	1.6
BAP GWPS				--	--	--	--	--	--	--	0.006	0.01	0.01	2	0.004	0.005	0.1	0.006	0.006	4	0.015	0.31	0.002	0.1	0.05	0.002	5
MW-69A	Supplementary	Alluvial	10/23/2020	3.1	660	2,500	1.5	7.5 J	3,000	7,800	< 0.01	0.0099	0.0047	0.024	< 0.001	< 0.001	< 0.01	0.025	0.027	1.5	< 0.005	0.19	< 0.0002	0.047	0.0089	< 0.001	< 0.8
MW-70M	Supplementary	Moqui	4/19/2020	2.4	640	2,400	1.2	7.5 J	2,700	7,400	--	< 0.0025	< 0.0025	0.014	< 0.0005	0.00053	< 0.005	0.025	0.024	1.2	0.0023	< 0.2	--	0.034	< 0.0025	< 0.0001	--
MW-70M	Supplementary	Moqui	10/23/2020	2.1	660	2,200	1.1	7.4 J	2,600	6,900	< 0.002	0.0013 J	0.0032 J	0.013	< 0.001	0.00038	< 0.002	0.022	0.023	1.1	0.0025	0.20	< 0.0002	0.031	0.0028	0.000032 J	< 0.8
MW-70M	Supplementary	Moqui	10/23/2020	2.1	680	2,200	1.1	7.4 J	2,600	6,900	< 0.002	0.0020	0.0013 J	0.013	< 0.001	0.00042	0.0014 J	0.022	0.021	1.1	0.0022	0.19	< 0.0002	0.030	0.0027	< 0.0002	< 0.8
W-301	Supplementary	Alluvial	12/7/2018	2.4	760	4,000	< 0.80 J,UJ	7.2 J	3,300	10,000	< 0.0050	< 0.0020	--	0.013	--	< 0.0010	< 0.0050	0.017	--	< 0.80 J,UJ	0.0012	0.43	< 0.00020	0.080	< 0.0060	< 0.0010	< 0.7
W-301	Supplementary	Alluvial	2/15/2019	--	--	--	< 0.40 UJ	--	--	--	< 0.0010	0.0017	--	0.0080	< 0.0010	0.00018	< 0.0010	0.018	--	< 0.40 UJ	< 0.00050	0.59	< 0.00020	0.0046	0.0084	< 0.00010	0.7
W-301	Supplementary	Alluvial	4/16/2019	--	--	--	< 0.80	--	--	--	--	0.0019	--	0.0083	--	0.00014	0.0017	0.018	--	< 0.80	< 0.00050	0.50	--	0.0051	0.0076	< 0.00010	--
W-301	Supplementary	Alluvial	8/9/2019	0.72	810	6,200	< 0.8	7.2 J	3,500	14,000	--	--	--	--	--	--	--	--	--	< 0.8	--	--	--	--	--	--	--
W-301	Supplementary	Alluvial	10/23/2019	0.65	760	6,300 J	< 0.80 UJ	7.3 J	3,600 J	14,000 J	< 0.0020	0.0030	--	0.0092	< 0.0010	< 0.00020	< 0.0040	0.016	--	< 0.80 UJ	< 0.0010	0.52	< 0.00020	0.0069	0.0056	< 0.00020	--
W-301	Supplementary	Alluvial	4/18/2020	0.70	690	6,400	< 0.8	7.4 J	3,600	14,000	--	< 0.0025	< 0.0025	0.0082	0.00063 J	< 0.0005	< 0.005	0.021	0.022	< 0.8	< 0.0005	0.41 J	--	0.0051	0.0060	< 0.0001	--
W-301	Supplementary	Alluvial	10/22/2020	0.58	780	6,600	0.33 J	7.4 J	3,800	13,000	< 0.002	0.0032	0.0017 J	0.0083	< 0.001	0.00016 J	0.00089 J	0.022	0.022	0.33 J	< 0.001	0.57	< 0.0002	0.0057	0.0035	0.000086 J	< 0.8
W-302	Supplementary	Alluvial	12/7/2018	0.64	560	2,600	0.98 J,UJ	7.3 J	2,400	7,200	< 0.0050	< 0.0020	--	0.014	--	< 0.0010	< 0.0050	0.0049	--	0.98 J,UJ	< 0.0010	0.32	< 0.00020	0.068	< 0.0060	< 0.0010	< 0.7
W-302	Supplementary	Alluvial	2/15/2019	--	--	--	0.88	--	--	--	< 0.0010	0.0043	--	0.36	< 0.0010	0.00089	0.020	0.022	--	0.88	0.028	0.37	0.00022	0.0039	0.0035	0.00016	0.7
W-302	Supplementary	Alluvial	4/17/2019	--	--	--	0.82	--	--	--	--	0.00076	--	0.015	--	< 0.00010	< 0.0010	0.0054	--	0.82	< 0.00050	0.31	--	0.016	< 0.00050	< 0.00010	--
W-302	Supplementary	Alluvial	8/9/2019	0.66	610	2,700	0.80	7.3 J	2,300	7,700	--	--	--	--	--	--	--	--	--	0.80	--	--	--	--	--	--	--
W-302	Supplementary	Alluvial	10/23/2019	0.59	570	2,700 J	0.80 J	7.4 J	2,300 J	8,000 J	< 0.0020	0.0015	--	0.014	< 0.0010	< 0.00020	0.019	0.0055	--	0.80 J	< 0.0010	0.32	< 0.00020	0.015	< 0.0010	< 0.00020	--
W-302	Supplementary	Alluvial	4/17/2020	0.64	590	3,000	0.97	7.4 J	2,300	8,100	--	< 0.0025	< 0.0025	0.013	< 0.0005	< 0.0005	0.086	0.0064	0.0064	0.97	< 0.0005	< 0.2	--	0.012	< 0.0025	< 0.0001	--
W-302	Supplementary	Alluvial	10/23/2020	0.57	640	3,200	0.82	7.3 J	2,300	7,700	< 0.002	0.0013	0.0015 J	0.014	< 0.001	< 0.0002	0.031	0.0052	0.0056	0.82	0.00066 J	0.37	< 0.0002	0.0085	0.00051 J	0.000028 J	< 0.8
W-303	Supplementary	Moenkopi - Moqui	4/18/2020	3.7	620	2,800	< 0.80	7.5	3,300	8,900	--	< 0.0025	< 0.0025	0.0048	< 0.0010	< 0.00025	< 0.0050	0.027	--	< 0.8	< 0.0005	< 0.2	--	0.024	< 0.0025	< 0.0001	--
W-303	Supplementary	Moenkopi - Moqui	10/22/2020	3.2	660	2,800	0.48 J	7.4 J	3,400	8,600	< 0.002 U	0.0014	0.0023	0.0046	< 0.001	0.000088 J	0.025	0.021	0.023	0.48 J	< 0.001	0.32	< 0.0002	0.019	0.00072 J	< 0.0002	0.8
W-304	Supplementary	Alluvial	12/7/2018	0.50	590	2,900	< 0.80 J,UJ	7.3 J	2,900	8,100	< 0.0050	< 0.0020	--	0.0083	--	< 0.0010	< 0.0050	0.0034	--	< 0.80 J,UJ	< 0.0010	0.40	< 0.00020	0.026	< 0.0060	< 0.0010	< 0.7
W-304	Supplementary	Alluvial	2/15/2019	--	--	--	< 0.80	--	--	--	< 0.0010	0.0020	--	0.011	< 0.0010	< 0.00010	< 0.0010	0.0029	--	< 0.80	< 0.00050	0.48	< 0.00020	0.0017	0.00059	< 0.00010	< 0.6
W-304	Supplementary	Alluvial	4/16/2019	--	--	--	< 0.80	--	--	--	< 0.00050	--	--	0.0089	--	< 0.00010	< 0.0010	0.0020	--	< 0.80	< 0.00050	0.41	--	0.0048	0.00066	< 0.00010	--
W-304	Supplementary	Alluvial	8/8/2019	0.54	630	3,200	< 0.8	7.3 J	3,000	8,700	--	--	--	--	--	--	--	--	--	< 0.8	--	--	--	--	--	--	--
W-304	Supplementary	Alluvial	10/24/2019	0.52	610	3,400 J	< 0.80 UJ	7.4 J	2,900 J	9,200 J	< 0.0010	0.00093	--	0.015	< 0.0010	< 0.00010	0.0016	0.0029	--	< 0.80 UJ	< 0.00050	0.45	< 0.00020	0.0036	< 0.00050	< 0.00010	--
W-304	Supplementary	Alluvial	10/24/2019	0.52	610	3,300	< 0.80	7.4 J	2,900	9,100	< 0.0020	0.0014	--	0.014	< 0.0010	< 0.00020	< 0.0020	0.0028	--	< 0.80	< 0.0010	0.45	< 0.00020				

Constituent:				Appendix III Constituents								Appendix IV Constituents															
				Boron	Calcium	Chloride	Fluoride	Ph (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Cobalt	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Total Radium
				N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
				mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
BAP BTV				1.3	740	5,700	0.8	7.4	5,100	15,000	0.004	0.004	0.004	0.05	0.001	0.0004	0.004	0.002	0.002	0.8	0.002	0.31	0.0002	0.0061	0.002	0.0014	1.6
BAP GWPS				--	--	--	--	--	--	--	0.006	0.01	0.01	2	0.004	0.005	0.1	0.006	0.006	4	0.015	0.31	0.002	0.1	0.05	0.002	5
W-305	Downgradient	Alluvial	10/22/2020	0.34	720	2,500	0.39 J	7.3 J	2,400	6,900	< 0.002	0.00068 J	0.0012 J	0.013	< 0.001	0.000056 J	0.0025	0.018	0.018	0.39 J	0.0021	0.22	< 0.0002	0.022	0.0036	< 0.0002	< 0.8
W-306	Downgradient	Alluvial	12/2/2015	0.32	550	2,400	0.75	7.02	3,600	8,900	< 0.0025	0.0019	--	0.014	< 0.0010	0.0015	0.00073	0.030	--	0.75	0.00066	0.43	< 0.00020	0.032	0.0016	< 0.00010	< 0.7
W-306	Downgradient	Alluvial	3/9/2016	0.46	460	2,200	1.4	7.82	7,100	13,000	< 0.015	< 0.0049	--	0.013	< 0.0010	< 0.00046	< 0.0087	0.0099 J	--	1.4	< 0.0044	0.51	< 0.00020	0.020	0.0020 J	< 0.00026	< 0.6
W-306	Downgradient	Alluvial	5/11/2016	0.56	430	1,900	< 2.0	--	8,000	15,000	0.00024	0.0039	--	0.014	< 0.0010	< 0.00020	< 0.0010	0.0082	--	< 2.0	< 0.0010	0.56	< 0.00020	0.020	0.0037	< 0.00020	< 0.4
W-306	Downgradient	Alluvial	8/26/2016	1.1	440	1,800	1.4	7.7	11,000	19,000	0.00024	0.0051	--	0.015	< 0.0010	< 0.00010	0.00093	0.0043	--	1.4	< 0.00050	0.67	< 0.00020	0.057	0.0047	< 0.00010	0.5
W-306	Downgradient	Alluvial	9/22/2016	1.1	430	4,900	< 0.40	7.9	11,000	20,000	< 0.0010	0.0042	--	0.013	< 0.0010	< 0.00020	< 0.0010	0.0038	--	< 0.40	< 0.00020	0.72	< 0.00020	0.032	0.0039	< 0.00020	< 0.7
W-306	Downgradient	Alluvial	2/21/2017	1.1	430	1,800	1.5	7.9	12,000	18,000	< 0.0010	0.0048	--	0.012	< 0.0010	< 0.00010	0.00087	0.0021	--	1.5	< 0.00050	0.78	< 0.00020	0.033	0.0042	< 0.00010	< 0.6
W-306	Downgradient	Alluvial	4/12/2017	1.0	410	1,800	1.4	8.2	12,000	20,000	< 0.0010	0.0050	--	0.012	< 0.0010	< 0.00010	< 0.00050	0.0021	--	1.4	< 0.00050	0.70	< 0.00020	0.035	0.0039	< 0.00010	< 0.6
W-306	Downgradient	Alluvial	4/25/2017	1.1	410	1,900	1.5	7.9	13,000	20,000	< 0.0010	0.0048	--	0.012	< 0.0010	< 0.00010	0.00050	0.0020	--	1.5	< 0.0010	0.71	< 0.00020	0.032	0.0039	< 0.00020	< 0.6
W-306	Downgradient	Alluvial	5/22/2017	1.0	420	1,800	1.1	7.9	12,000	20,000	< 0.0010	0.0042	--	0.010	< 0.0010	< 0.00010	< 0.00050	0.0018	--	1.1	< 0.00050	0.65	< 0.00020	0.026	0.0030	< 0.00010	< 0.6
W-306	Downgradient	Alluvial	5/24/2017	1.0	420	1,800	1.0	7.9	12,000	18,000	< 0.0040	0.0046	--	0.013	< 0.0010	< 0.00040	< 0.0020	0.0022	--	1.0	< 0.0020	0.74	< 0.00020	0.029	0.0030	< 0.00040	< 0.6
W-306	Downgradient	Alluvial	7/1/2017	0.95	380	2,100	1.3	7.8	13,000	19,000	< 0.0010	0.0046	--	0.011	< 0.0010	0.00010	< 0.00050	0.0023	--	1.3	< 0.00050	0.64	< 0.00020	0.028	0.0031	< 0.00010	< 0.7
W-306	Downgradient	Alluvial	7/28/2017	0.99	410	2,100	1.2	7.8	12,000	18,000	< 0.0010	0.0044	--	0.0094	< 0.0010	< 0.00040	< 0.00050	0.0024	--	1.2	< 0.0020	0.64	< 0.00020	0.027	0.0027	< 0.00040	1.1
W-306	Downgradient	Alluvial	9/6/2017	0.97	430	1,800	1.4	7.8	11,000	17,000	< 0.0010	0.0047	--	0.010	< 0.0010	< 0.00010	< 0.0010	0.0023	--	1.4	< 0.00050	0.62	< 0.00020	0.028	0.0029	< 0.00010	< 0.7
W-306	Downgradient	Alluvial	12/7/2017	1.0	440	1,900	1.4	7.9	12,000	18,000	--	--	--	--	--	--	--	--	--	1.4	--	--	--	--	--	--	--
W-306	Downgradient	Alluvial	2/15/2018	--	--	--	1.3	--	--	--	< 0.0010	0.0048	--	0.010	< 0.0010	< 0.00010	< 0.0010	0.0014	--	1.3	< 0.00050	0.69	< 0.00020	0.028	0.0021	< 0.00010	0.4
W-306	Downgradient	Alluvial	2/15/2018	--	--	--	1.3	--	--	--	< 0.0020	0.0049	--	0.011	< 0.0010	< 0.00020	< 0.0010	0.0015	--	1.3	< 0.0010	0.70	< 0.00020	0.030	0.0022	< 0.00020	0.3
W-306	Downgradient	Alluvial	5/19/2018	1.0	390	2,000	1.6	7.8	13,000	18,000	< 0.0020	0.0052	--	0.010	--	< 0.00020	< 0.0020	0.0014	--	1.6	< 0.0010	0.68	--	0.031	0.0016	< 0.00020	0.8
W-306	Downgradient	Alluvial	10/26/2018	1.0	420	1,800	1.4	7.9	12,000	18,000	--	0.0052	--	0.010	--	0.00011	< 0.0010	0.0012	--	1.4	< 0.00050	0.68	--	0.032	0.0021	< 0.00010	--
W-306	Downgradient	Alluvial	10/26/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.7
W-306	Downgradient	Alluvial	12/7/2018	1.1	410	1,900	1.4 J,UJ	7.9 J	12,000	19,000	< 0.0050	0.0041	--	0.010	--	< 0.0010	< 0.0050	< 0.0020	--	1.4 J,UJ	< 0.0010	0.73	< 0.00020	0.028	< 0.0060	< 0.0010	< 0.7
W-306	Downgradient	Alluvial	2/15/2019	--	--	--	1.2	--	--	--	< 0.0010	0.0053	--	0.011	< 0.0010	< 0.00010	< 0.0010	0.00097	--	1.2	< 0.00050	0.80	< 0.00020	0.031	0.0021	< 0.00010	< 0.6
W-306	Downgradient	Alluvial	4/16/2019	--	--	--	1.0	--	--	--	--	0.0052	--	0.011	--	0.00013	< 0.0010	0.00094	--	1.0	< 0.00050	0.68	--	0.033	0.0016	< 0.00010	< 0.7
W-306	Downgradient	Alluvial	8/1/2019	1.1	390	1,900	0.99	7.9 J	12,000	19,000	--	--	--	--	--	--	--	--	--	0.99	--	--	--	--	--	--	--
W-306	Downgradient	Alluvial	10/23/2019	1.0	380	1,900	1.0	7.9 J	13,000	19,000	< 0.0020	0.0060	--	0.013	< 0.0010	0.00021	< 0.0040	0.0029	--	1.0	< 0.0010	0.70	< 0.00020	0.039	0.0023	< 0.00020	--
W-306	Downgradient	Alluvial	4/19/2020	1.1	400	1,800	1.5	7.9 J	12,000	19,000	--	0.0048	0.0051	0.011	0.0017	< 0.0005	< 0.005	< 0.0025	< 0.0025	1.5	< 0.0025	1.2	--	0.039	< 0.0025	< 0.0005	--
W-306	Downgradient	Alluvial	4/19/2020	1.2	400	2,000																					

Constituent:				Appendix III Constituents								Appendix IV Constituents															
				Boron	Calcium	Chloride	Fluoride	Ph (Laboratory Measurement)	Sulfate	Total Dissolved Solids	Antimony	Arsenic	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Cobalt	Fluoride	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Total Radium
Filtered:	N	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	Y	N	N	N	N	N	N	N	N	N		
Units:	mg/L	mg/L	mg/L	mg/L	su	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L		
BAP BTV				1.3	740	5,700	0.8	7.4	5,100	15,000	0.004	0.004	0.004	0.05	0.001	0.0004	0.004	0.002	0.002	0.8	0.002	0.31	0.0002	0.0061	0.002	0.0014	1.6
BAP GWPS				--	--	--	--	--	--	--	0.006	0.01	0.01	2	0.004	0.005	0.1	0.006	0.006	4	0.015	0.31	0.002	0.1	0.05	0.002	5
W-314	Downgradient	Alluvial	5/11/2016	0.97	780	2,600	< 2.0	--	2,100	7,400	< 0.00020	< 0.0010	--	0.012	< 0.0010	< 0.00020	< 0.0010	0.015	--	< 2.0	< 0.0010	0.33	< 0.00020	0.0073	< 0.0010	< 0.00020	< 0.5
W-314	Downgradient	Alluvial	8/26/2016	1.1	820	2,600	0.93	7.3	2,200	8,000	0.00014	0.00056	--	0.013	< 0.0010	0.00017	0.00078	0.015	--	0.93	< 0.00050	0.32	< 0.00020	0.013	< 0.00050	< 0.00010	< 0.6
W-314	Downgradient	Alluvial	9/22/2016	1.1	800	2,700	1.1	7.6	2,300	8,100	< 0.00050	0.00060	--	0.012	< 0.0010	0.00015	0.00073	0.013	--	1.1	0.00041	0.34	< 0.00020	0.0082	0.00064	< 0.00010	< 0.7
W-314	Downgradient	Alluvial	2/21/2017	1.1	810	2,600	0.97	7.5	2,100	7,200	< 0.0010	0.00054	--	0.011	< 0.0010	0.00016	0.0010	0.013	--	0.97	< 0.00050	0.35	< 0.00020	0.0077	< 0.00050	< 0.00010	< 0.6
W-314	Downgradient	Alluvial	4/11/2017	1.1	780	2,800	0.91	7.7	2,200	7,700	< 0.0010	< 0.00050	--	0.012	< 0.0010	0.00019	0.0012	0.014	--	0.91	< 0.00050	0.31	< 0.00020	0.0086	< 0.00050	< 0.00010	< 0.6
W-314	Downgradient	Alluvial	4/25/2017	1.1	810	2,800	0.80	7.5	2,300	7,500	< 0.0010	< 0.00050	--	0.011	< 0.0010	0.00017	0.0017	0.013	--	0.80	0.0023	0.33	< 0.00020	0.0079	< 0.00050	< 0.00010	0.5
W-314	Downgradient	Alluvial	5/22/2017	1.1	840	2,800	0.90	7.5	2,300	7,600	< 0.0010	< 0.00050	--	0.0097	< 0.0010	0.00016	0.0020	0.011	--	0.90	< 0.00050	0.32	< 0.00020	0.0070	< 0.00050	< 0.00010	< 0.6
W-314	Downgradient	Alluvial	5/24/2017	1.1	840	2,800	0.90	7.4	2,300	7,400	< 0.0040	< 0.0020	--	0.013	< 0.0010	< 0.00040	< 0.0020	0.014	--	0.90	< 0.0020	0.34	< 0.00020	0.0085	< 0.0020	< 0.00040	< 0.6
W-314	Downgradient	Alluvial	6/30/2017	1.1	770	2,900	1.1	7.4	2,500	7,900	< 0.0010	0.00069	--	0.011	< 0.0010	0.00020	0.00098	0.012	--	1.1	< 0.00050	0.30	< 0.00020	0.0080	< 0.00050	< 0.00010	< 0.7
W-314	Downgradient	Alluvial	7/28/2017	1.1	800	2,800	0.90	7.3	2,200	7,600	< 0.0010	0.00053	--	0.0093	< 0.0010	0.00018	0.00087	0.012	--	0.90	< 0.00050	0.30	< 0.00020	0.0071	< 0.00050	< 0.00010	< 0.6
W-314	Downgradient	Alluvial	9/7/2017	1.1	860	2,800	0.90	7.3	2,200	7,700	< 0.0010	0.00091	--	0.011	< 0.0010	0.00018	0.0012	0.013	--	0.90	< 0.00050	0.31	< 0.00020	0.0080	< 0.00050	< 0.00010	< 0.7
W-314	Downgradient	Alluvial	12/7/2017	1.1	830	2,900	0.85	7.4	2,200	7,500	--	--	--	--	--	--	--	--	--	0.85	--	--	--	--	--	--	--
W-314	Downgradient	Alluvial	2/15/2018	--	--	--	1.1	--	--	--	< 0.0010	0.00060	--	0.012	< 0.0010	0.00019	< 0.0010	0.013	--	1.1	< 0.00050	0.32	< 0.00020	0.0085	< 0.00050	< 0.00010	0.2
W-314	Downgradient	Alluvial	5/20/2018	1.1	790	2,900	1.3	7.3	2,400	7,500	< 0.0020	< 0.0010	--	0.011	--	< 0.00020	< 0.0020	0.013	--	1.3	< 0.0010	0.32	--	0.0093	< 0.0010	< 0.00020	< 0.7
W-314	Downgradient	Alluvial	10/24/2018	1.1	800	2,600	0.83	7.5	2,200	7,400	--	0.00073	--	0.011	--	0.00019	0.0013	0.015	--	0.83	< 0.00050	0.30	--	0.0087	< 0.00050	< 0.00010	--
W-314	Downgradient	Alluvial	10/24/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.7
W-314	Downgradient	Alluvial	12/8/2018	1.1	800	2,700	0.89 J,UJ	7.3 J	2,100	7,700	< 0.0050	< 0.0020	--	0.013	--	< 0.0010	0.014	0.014	--	0.89 J,UJ	< 0.0010	0.32	< 0.00020	0.0087	< 0.0060	< 0.0010	0.7
W-314	Downgradient	Alluvial	2/15/2019	--	--	--	0.82	--	--	--	< 0.0010	0.0011	--	0.011	< 0.0010	0.00017	0.046	0.016	--	0.82	< 0.00050	0.34	< 0.00020	0.012	< 0.00050	< 0.00010	--
W-314	Downgradient	Alluvial	4/16/2019	--	--	--	0.87	--	--	--	--	< 0.00050	--	0.012	--	0.00021	0.094	0.016	--	0.87	< 0.00050	0.29	--	0.026	< 0.00050	< 0.00010	< 0.7
W-314	Downgradient	Alluvial	8/1/2019	1.2	740	2,700	0.84	7.4 J	2,200	7,600	--	--	--	--	--	--	--	--	--	0.84	--	--	--	--	--	--	--
W-314	Downgradient	Alluvial	10/24/2019	1.2	750	2,700 J	< 0.80 UJ	7.4 J	2,200 J	7,400 J	< 0.0020	0.0015	--	0.013	< 0.0010	0.00036	0.0081	0.019	--	< 0.80 UJ	< 0.0010	0.30	< 0.00020	0.011	< 0.0010	< 0.00020	--
W-314	Downgradient	Alluvial	4/19/2020	1.4	790	2,900	0.84	7.5 J	2,300	7,600	--	< 0.0025	< 0.0025	0.011	< 0.0005	< 0.0005	0.010	0.022	0.023	0.84	< 0.0025	0.44 J	--	0.010	< 0.0025	< 0.0005	--
W-314	Downgradient	Alluvial	10/23/2020	1.2	790	2,800	0.90	7.2 J	2,400	7,200	< 0.002	0.0019	0.0016 J	0.011	< 0.001	0.00031	0.0091	0.024	0.025	0.90	0.00058 J	0.31	< 0.0002	0.011	0.002	< 0.0002	< 0.8
W-317	Supplementary	Alluvial	3/30/2019	0.20	320	1,400	< 0.40	7.5 J	670	3,300	< 0.0010	0.0036	--	0.039	< 0.0010	< 0.00010	0.0035	0.00085	--	< 0.40	< 0.00050	< 0.20	< 0.00020	0.064	< 0.00050	< 0.00010	--
W-317	Supplementary	Alluvial	4/17/2019	--	--	--	< 0.80	--	--	--	--	0.0039	--	0.033	--	< 0.00010	< 0.0010	< 0.00050	--	< 0.80	< 0.00050	< 0.20	--	0.0028	< 0.00050	< 0.00010	--
W-317	Supplementary	Alluvial	4/17/2019	--	--	--	< 0.80	--	--	--	--	0.0035	--	0.032	--	< 0.00010	< 0.0010	< 0.00050	--	< 0.80	< 0.00050	< 0.20	--	0.0028	< 0.00050	< 0.00010	--
W-317	Supplementary	Alluvial	8/8/2019	0.48	450	1,600	1.0	7.5 J	3,200	7,200	--	--	--	--	--	--	--	--	--	1.0	--	--	--	--	--	--	--
W-317	Supplementary	Alluvial	8/9/2019	0.22	360	1,500	< 0.4	7.4 J	700	3,400	--	--	--	--	--	--	--	--	--	< 0.4	--	--	--	--	--	--	--
W-317	Supplementary	Alluvial	10/24/2019	0.21	340	1,400 J	< 0.40 UJ	7.5 J	680 J	3,400 J	< 0.0010	0.0043	--	0.036	< 0.0010	< 0.00010	0.0012	< 0.00050	--	< 0.40 UJ	< 0.00050	< 0.20	< 0.00020	0.0046	< 0.00050	< 0.00010	--
W-317	Supplementary	Alluvial	4/16/2020	0.21	350	1,500	< 0.8	7.5 J	730	3,700	--	0.0038	--	0.031	< 0.0005	< 0.0005	< 0.005	< 0.0025	--	< 0.8	< 0.0005	0.042 J	--	0.0037	< 0.0025	< 0.0001	--
W-317	Supplementary	Alluvial	10/21/2020	0.20	350	1,500	0.36 J	7.6 J	680	3,500	< 0.004	0.0046	--	0.036	0.0001 J	< 0.0004	0.0079	0.00073 J	--	0.36 J	< 0.002	0.064	< 0.0002	0.0041	0.0028	< 0.0004	< 0.8

Groundwater Quality Data for BAP Monitoring Wells

				Additional Analyses																					
				Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Ammonia (as N)	Dissolved Organic Carbon	Iron	Iron	Magnesium	Manganese	Manganese	Nickel	Nitrate as N	Nitrate-Nitrite as N	Nitrite (as N)	Nitrogen	Nitrogen, Kjeldahl, Total	Potassium	Radium 226	Radium 228	SiO2, Silica	Sodium	Total Organic Carbon
				N	N	N	N	Y	N	Y	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N
Filtered:				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L	mg/L	mg/L		
Units:				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L	mg/L	mg/L	
BAP BTV				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
BAP GWPS				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
M-64A	Background	Alluvial	2/20/2017	520	< 6.0	< 6.0	--	--	--	--	220	--	--	--	--	--	--	17	0.8	< 0.6	--	3,600			
M-64A	Background	Alluvial	2/20/2017	520	< 6.0	< 6.0	--	--	--	--	220	--	--	--	--	--	--	17	< 0.4	< 0.6	--	3,600			
M-64A	Background	Alluvial	4/12/2017	520	< 6.0	< 6.0	--	--	--	--	220	--	--	--	--	--	--	14	< 0.4	0.8	--	3,700			
M-64A	Background	Alluvial	4/12/2017	520	< 6.0	< 6.0	--	--	--	--	210	--	--	--	--	--	--	14	< 0.5	< 0.6	--	3,800			
M-64A	Background	Alluvial	4/25/2017	530	< 6.0	< 6.0	--	--	--	--	220	--	--	--	--	--	--	14	0.8	0.8	--	3,600			
M-64A	Background	Alluvial	5/18/2017	530	< 6.0	< 6.0	--	--	--	--	230	--	--	--	--	--	--	14	< 0.5	1.3	--	3,600			
M-64A	Background	Alluvial	5/24/2017	530	< 6.0	< 6.0	--	--	--	--	220	--	--	--	--	--	--	13	< 0.3	1.1	--	3,600			
M-64A	Background	Alluvial	5/24/2017	530	< 6.0	< 6.0	--	--	--	--	220	--	--	--	--	--	--	14	0.4	< 0.6	--	3,700			
M-64A	Background	Alluvial	6/30/2017	450	< 6.0	< 6.0	--	--	--	--	210	--	--	--	--	--	--	14	< 0.4	< 0.7	--	3,700			
M-64A	Background	Alluvial	7/27/2017	470	< 6.0	< 6.0	--	--	--	--	220	--	--	--	--	--	--	14	< 0.4	< 0.7	--	3,600			
M-64A	Background	Alluvial	7/27/2017	470	< 6.0	< 6.0	--	--	--	--	220	--	--	--	--	--	--	15	< 0.4	< 0.7	--	3,700			
M-64A	Background	Alluvial	9/7/2017	460	< 6.0	< 6.0	--	--	--	--	210	--	--	--	--	--	--	14	< 0.5	< 0.7	--	3,700			
M-64A	Background	Alluvial	12/8/2017	540	< 6.0	< 6.0	--	--	--	--	210	--	--	--	--	--	--	14	--	--	--	3,000			
M-64A	Background	Alluvial	2/15/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.3	0.7	--	--			
M-64A	Background	Alluvial	5/19/2018	520	< 6.0	< 6.0	--	--	--	--	200	--	--	--	--	--	--	13	< 0.5	< 0.7	--	4,000			
M-64A	Background	Alluvial	10/22/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
M-64A	Background	Alluvial	10/22/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	< 0.7	--	--	--		
M-64A	Background	Alluvial	10/22/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
M-64A	Background	Alluvial	10/22/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	< 0.7	--	--	--		
M-64A	Background	Alluvial	2/13/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	< 0.6	--	--	--		
M-64A	Background	Alluvial	4/11/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
M-64A	Background	Alluvial	4/16/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	< 0.7	--	--	--		
M-64A	Background	Alluvial	8/1/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
M-64A	Background	Alluvial	8/1/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
M-64A	Background	Alluvial	10/24/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
M-64A	Background	Alluvial	5/6/2020	470	< 6	< 6	0.75	5.5	5.5	4.8	220	2.3	1.9	--	--	< 0.5	--	--	19	< 0.4	< 0.8	--	3,800	5.5	
M-64A	Background	Alluvial	5/6/2020	490	< 6	< 6	0.73	5.0	5.5	5.0	230	2.2	1.9	--	--	< 0.5	--	--	20	< 0.4	< 0.8	--	3,400	5.1	
M-64A	Background	Alluvial	10/24/2020	--	--	--	0.77	4.8	5.5	5.5	--	--	2	2.2	--	< 0.25	--	--	--	< 0.4	< 0.8	--	--	4.5	
M-52A	Downgradient	Alluvial/Moqui	12/1/2015	190	< 6.0	< 6.0	--	--	--	--	280	--	--	--	--	--	--	6.4	0.4	< 0.7	15	2,200			
M-52A	Downgradient	Alluvial/Moqui	3/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.2	< 0.6	--	--			
M-52A	Downgradient	Alluvial/Moqui	5/10/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.3	< 0.4	--	--			
M-52A	Downgradient	Alluvial/Moqui	8/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.6	< 0.6	--	--			
M-52A	Downgradient	Alluvial/Moqui	9/22/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.6	< 0.7	--	--			
M-52A	Downgradient	Alluvial/Moqui	2/21/2017	220	< 6.0	< 6.0	--	--	--	--	250	--	--	--	--	--	--	6.9	< 0.5	< 0.6	--	2,400			
M-52A	Downgradient	Alluvial/Moqui	2/21/2017	220	< 6.0	< 6.0	--	--	--	--	260	--	--	--	--	--	--	7.1	< 0.4	< 0.6	--	2,600			
M-52A	Downgradient	Alluvial/Moqui	4/11/2017	240	< 6.0	< 6.0	--	--	--	--	250	--	--	--	--	--	--	6.5	< 0.6	< 0.6	--	2,400			
M-52A	Downgradient	Alluvial/Moqui	4/25/2017	240	< 6.0	< 6.0	--	--	--	--	260	--	--	--	--	--	--	6.6	0.9	< 0.6	--	2,400			
M-52A	Downgradient	Alluvial/Moqui	5/18/2017	250	< 6.0	< 6.0	--	--	--	--	270	--	--	--	--	--	--	6.9	< 0.4	0.6	--	2,400			
M-52A	Downgradient	Alluvial/Moqui	5/24/2017	250	< 6.0	< 6.0	--	--	--	--	280	--	--	--	--	--	--	7.2	< 0.4	< 0.6	--	2,500			
M-52A	Downgradient	Alluvial/Moqui	6/30/2017	190	< 6.0	< 6.0	--	--	--	--	250	--	--	--	--	--	--	5.6	< 0.5	< 0.7	--	2,200			
M-52A	Downgradient	Alluvial/Moqui	7/28/2017	150	< 6.0	< 6.0	--	--	--	--	230	--	--	--	--	--	--	4.7	< 0.4	< 0.7	--	2,000			
M-52A	Downgradient	Alluvial/Moqui	9/7/2017	140	< 6.0	< 6.0	--	--	--	--	240	--	--	--	--	--	--	4.6	0.6	< 0.6	--	2,000			
M-52A	Downgradient	Alluvial/Moqui	12/7/2017	150	< 6.0	< 6.0	--	--	--	--	240	--	--	--	--	--	--	5.2	--	--	--	2,000			
M-52A	Downgradient	Alluvial/Moqui	2/15/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2	0.7	--	--			
M-52A	Downgradient	Alluvial/Moqui	5/20/2018	230	< 6.0	< 6.0	--	--	--	--	280	--	--	--	--	--	--	6.6	--	--	--	2,500			
M-52A	Downgradient	Alluvial/Moqui	6/7/2018	220	< 6.0	< 6.0	--	--	--	--	260	--	--	--	--	--	--	5.6	< 0.4	0.7	--	2,200			
M-52A	Downgradient	Alluvial/Moqui	10/24/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
M-52A	Downgradient	Alluvial/Moqui	10/24/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	< 0.7	--	--	--		
M-52A	Downgradient	Alluvial/Moqui	12/8/2018	230	< 6.0	< 6.0	--	--	--	--	300	--	--	--	--	--	--	7.1	< 0.5	< 0.7	14	2,600	--		
M-52A	Downgradient	Alluvial/Moqui	2/15/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
M-52A	Downgradient	Alluvial/Moqui	2/15/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.6	--	--	--		
M-52A	Downgradient	Alluvial/Moqui	4/16/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	< 0.7	--	--	--		
M-52A	Downgradient	Alluvial/Moqui	4/16/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	< 0.7	--	--	--		
M-52A	Downgradient	Alluvial/Moqui	8/1/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		

				Groundwater Quality Data for BAP Monitoring Wells																					
				Additional Analyses																					
				Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Ammonia (as N)	Dissolved Organic Carbon	Iron	Iron	Magnesium	Manganese	Manganese	Nickel	Nitrate as N	Nitrate-Nitrite as N	Nitrite (as N)	Nitrogen	Nitrogen, Kjeldahl, Total	Potassium	Radium 226	Radium 228	SiO2, Silica	Sodium	Total Organic Carbon
Constituent:				N	N	N	N	Y	N	Y	N	N	Y	N	N	N	N	N	N	N	N	N	N		
Filtered:																									
Units:				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L	mg/L	mg/L		
BAP BTV				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
BAP GWPS				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
M-52A	Downgradient	Alluvial/Moqui	10/24/2019	210 J	< 6	< 6	< 0.5	1.4 J	5.0	2.9	250	1.2	1.1	--	--	< 0.5	--	--	--	--	--	--	--		
M-52A	Downgradient	Alluvial/Moqui	10/22/2020				0.54	1.3	0.41	0.21		1.6	1.6			< 0.25							1.2		
M-53A	Downgradient	Alluvial	12/1/2015	100	< 6.0	< 6.0	--	--	--	--	240	--	--	--	--	--	--	8.4	< 0.4	< 0.7	13	1,700			
M-53A	Downgradient	Alluvial	3/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.2	0.5	--	--			
M-53A	Downgradient	Alluvial	5/10/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.5	--	--			
M-53A	Downgradient	Alluvial	5/10/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.3	< 0.4	--	--			
M-53A	Downgradient	Alluvial	8/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.6	--	--			
M-53A	Downgradient	Alluvial	8/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	0.6	--	--			
M-53A	Downgradient	Alluvial	9/22/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.7	--	--			
M-53A	Downgradient	Alluvial	2/21/2017	96	< 6.0	< 6.0	--	--	--	--	220	--	--	--	--	--	--	14	< 0.4	< 0.6	--	1,700			
M-53A	Downgradient	Alluvial	4/12/2017	110	< 6.0	< 6.0	--	--	--	--	210	--	--	--	--	--	--	12	< 0.5	0.6	--	1,700			
M-53A	Downgradient	Alluvial	4/25/2017	120	< 6.0	< 6.0	--	--	--	--	190	--	--	--	--	--	--	6.5	< 0.4	< 0.6	--	1,700			
M-53A	Downgradient	Alluvial	5/18/2017	98	< 6.0	< 6.0	--	--	--	--	220	--	--	--	--	--	--	14	< 0.4	< 0.6	--	1,700			
M-53A	Downgradient	Alluvial	5/24/2017	98	< 6.0	< 6.0	--	--	--	--	240	--	--	--	--	--	--	15	< 0.4	< 0.4	--	1,700			
M-53A	Downgradient	Alluvial	7/1/2017	97	< 6.0	< 6.0	--	--	--	--	220	--	--	--	--	--	--	13	< 0.5	< 0.7	--	1,700			
M-53A	Downgradient	Alluvial	7/28/2017	110	< 6.0	< 6.0	--	--	--	--	230	--	--	--	--	--	--	14	< 0.4	< 0.7	--	1,700			
M-53A	Downgradient	Alluvial	9/7/2017	170	< 6.0	< 6.0	--	--	--	--	230	--	--	--	--	--	--	14	< 0.4	< 0.6	--	1,700			
M-53A	Downgradient	Alluvial	12/7/2017	98	< 6.0	< 6.0	--	--	--	--	210	--	--	--	--	--	--	13	--	--	--	1,600			
M-53A	Downgradient	Alluvial	2/15/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1	0.3	--	--			
M-53A	Downgradient	Alluvial	5/20/2018	99	< 6.0	< 6.0	--	--	--	--	210	--	--	--	--	--	--	13	< 0.6	< 0.7	--	1,600			
M-53A	Downgradient	Alluvial	5/20/2018	99	< 6.0	< 6.0	--	--	--	--	210	--	--	--	--	--	--	13	< 0.6	< 0.7	--	1,600			
M-53A	Downgradient	Alluvial	10/26/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
M-53A	Downgradient	Alluvial	10/26/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	< 0.7	--	--	--		
M-53A	Downgradient	Alluvial	12/7/2018	91	< 6.0	< 6.0	--	--	--	--	210	--	--	--	--	--	--	13	< 0.5	0.9	8.9	1,500	--		
M-53A	Downgradient	Alluvial	12/7/2018	92	< 6.0	< 6.0	--	--	--	--	220	--	--	--	--	--	--	13	< 0.5	1.1	9.4	1,600	--		
M-53A	Downgradient	Alluvial	2/15/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	0.8	--	--	--		
M-53A	Downgradient	Alluvial	4/17/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	< 0.7	--	--	--		
M-53A	Downgradient	Alluvial	8/1/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
M-53A	Downgradient	Alluvial	10/23/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
M-53A	Downgradient	Alluvial	4/19/2020	96	< 6	< 6	< 0.5	1.3	< 0.03	< 0.1	210	5.0	5.0	--	--	< 0.5	--	--	--	12 J	--	--	--	1,600	1.2
M-53A	Downgradient	Alluvial	4/19/2020	96	< 6	< 6	< 0.5	1.2	< 0.03	< 0.1	210	5.2	4.8	--	--	< 0.5	--	--	--	15 J	--	--	--	1,600	1.2
M-53A	Downgradient	Alluvial	10/22/2020				0.29 J	1.1	0.051 J	0.051 J		5.2	4.7			< 0.25					< 0.5	< 0.8			0.99
M-55A	Supplementary	Alluvial	12/1/2015	180	< 6.0	< 6.0	--	--	--	--	140	--	--	--	--	--	--	3.3	< 0.5	< 0.9	22	2,200			
M-55A	Supplementary	Alluvial	3/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.2	< 0.6	--	--			
M-55A	Supplementary	Alluvial	5/10/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.3	< 0.5	--	--			
M-55A	Supplementary	Alluvial	8/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.6	--	--			
M-55A	Supplementary	Alluvial	9/22/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	0.8	--	--			
M-55A	Supplementary	Alluvial	2/21/2017	200	< 6.0	< 6.0	--	--	--	--	150	--	--	--	--	--	--	3.6	< 0.4	< 0.6	--	2,900			
M-55A	Supplementary	Alluvial	4/12/2017	200	< 6.0	< 6.0	--	--	--	--	140	--	--	--	--	--	--	3.1	< 0.5	1.4	--	2,800			
M-55A	Supplementary	Alluvial	4/25/2017	210	< 6.0	< 6.0	--	--	--	--	150	--	--	--	--	--	--	3.2	< 0.4	1.0	--	2,900			
M-55A	Supplementary	Alluvial	5/18/2017	210	< 6.0	< 6.0	--	--	--	--	150	--	--	--	--	--	--	3.2	< 0.4	1.1	--	2,800			
M-55A	Supplementary	Alluvial	5/24/2017	210	< 6.0	< 6.0	--	--	--	--	150	--	--	--	--	--	--	3.1	< 0.4	1.5	--	2,900			
M-55A	Supplementary	Alluvial	7/1/2017	210	< 6.0	< 6.0	--	--	--	--	150	--	--	--	--	--	--	2.9	< 0.5	0.9	--	2,800			
M-55A	Supplementary	Alluvial	7/28/2017	200	< 6.0	< 6.0	--	--	--	--	160	--	--	--	--	--	--	2.9	< 0.4	< 0.7	--	3,000			
M-55A	Supplementary	Alluvial	9/7/2017	210	< 6.0	< 6.0	--	--	--	--	160	--	--	--	--	--	--	3.1	< 0.4	1.2	--	2,900			
M-55A	Supplementary	Alluvial	12/8/2018	190	< 6.0	< 6.0	--	--	--	--	160	--	--	--	--	--	--	3.0	< 0.5	0.9	12	2,900	--		
M-55A	Supplementary	Alluvial	2/15/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	1.2	--	--	--		
M-55A	Supplementary	Alluvial	4/16/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
M-55A	Supplementary	Alluvial	8/1/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
M-55A	Supplementary	Alluvial	10/24/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
M-55A	Supplementary	Alluvial	4/17/2020	190	< 6	< 6	< 0.5	3.4	0.04 J	< 0.1	160	< 0.015	< 0.01	--	--	0.52	--	--	--	6.5	--	--	--	2,900	3.2
M-55A	Supplementary	Alluvial	10/24/2020				< 0.5	3.2	0.17	0.057 J		0.017	0.016			0.48					< 0.4	< 0.8			3
MW-69A	Supplementary	Alluvial	4/19/2020	140	< 6	< 6	< 0.5	1.7	0.21	< 0.1	170	8.6	8.2	--	--	< 0.5	--	--	--	10	--	--	--	1,800	1.7

				Additional Analyses																						
				Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Ammonia (as N)	Dissolved Organic Carbon	Iron	Iron	Magnesium	Manganese	Manganese	Nickel	Nitrate as N	Nitrate-Nitrite as N	Nitrite (as N)	Nitrogen	Nitrogen, Kjeldahl, Total	Potassium	Radium 226	Radium 228	SiO2, Silica	Sodium	Total Organic Carbon	
				N	N	N	N	Y	N	Y	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N
				Filtered:	N	N	N	N	Y	N	Y	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N
Units:				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L	mg/L	mg/L			
BAP BTV				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
BAP GWPS				--	--	--	< 0.5	1.5	2.3	1.1	--	8.2	8.1	--	--	--	--	--	--	< 0.4	< 0.8	--	--	1.5		
MW-70M	Supplementary	Moqui	4/19/2020	85	< 6	< 6	< 0.5	1.7	0.072 J	< 0.1	160	1.8	1.8	--	--	< 0.5	--	--	11	--	--	--	1,500	1.3		
MW-70M	Supplementary	Moqui	10/23/2020				< 0.5	1.2	0.093 J	0.09 J		1.8	1.7			0.4				< 0.4	< 0.8			1.1		
MW-70M	Supplementary	Moqui	10/23/2020				< 0.5	1.1	0.085 J	0.072 J		1.8	1.6			< 0.25				< 0.4	< 0.8			1		
W-301	Supplementary	Alluvial	12/7/2018	180	< 6.0	< 6.0	--	--	--	--	170	--	--	--	--	--	--	--	4.6	< 0.6	< 0.7	14	2,600	--		
W-301	Supplementary	Alluvial	2/15/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	0.7	--	--	--		
W-301	Supplementary	Alluvial	4/16/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-301	Supplementary	Alluvial	8/9/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-301	Supplementary	Alluvial	10/23/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-301	Supplementary	Alluvial	4/18/2020	150	< 6	< 6	< 0.5	3.1	< 0.03	< 0.1	160	1.8	1.7	--	--	17	--	--	9.6	--	--	--	4,100	2.9		
W-301	Supplementary	Alluvial	10/22/2020				< 0.5	2.7	0.052 J	0.04 J		1.6	1.6			20				< 0.4	< 0.8			2.6		
W-302	Supplementary	Alluvial	12/7/2018	140	< 6.0	< 6.0	--	--	--	--	120	--	--	--	--	--	--	--	5.5	< 0.6	< 0.7	12	1,800	--		
W-302	Supplementary	Alluvial	2/15/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	0.7	--	--	--		
W-302	Supplementary	Alluvial	4/17/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-302	Supplementary	Alluvial	8/9/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-302	Supplementary	Alluvial	10/23/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-302	Supplementary	Alluvial	4/17/2020	130	< 6.0	< 6.0	< 0.5	1.2 J	0.40	0.14	120	0.022 J	0.027	--	--	< 0.5	--	--	6.5	--	--	--	1,800	0.64 J		
W-302	Supplementary	Alluvial	10/23/2020				< 0.5	0.75	0.19	0.12		0.057	0.048			< 0.25				< 0.4	< 0.8			0.57		
W-303	Supplementary	Moenkopi - Moqui	4/18/2020	150	< 6.0	< 6.0	--	1.4	--	< 0.1	190	< 0.50	0.023	--	--	< 0.5	--	--	6.8	--	--	--	2,100	1.4		
W-303	Supplementary	Moenkopi - Moqui	10/22/2020				< 0.5	1.2	0.14	0.052 J		0.1	0.11			< 0.25				< 0.4	0.8			1.1		
W-304	Supplementary	Alluvial	12/7/2018	140	< 6.0	< 6.0	--	--	--	--	100	--	--	--	--	--	--	--	5.8	< 0.5	< 0.7	9.6	2,100	--		
W-304	Supplementary	Alluvial	2/15/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.6	--	--	--		
W-304	Supplementary	Alluvial	4/16/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-304	Supplementary	Alluvial	8/8/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-304	Supplementary	Alluvial	10/24/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-304	Supplementary	Alluvial	10/24/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-304	Supplementary	Alluvial	4/17/2020	140	< 6	< 6	< 0.5	0.97	0.11	< 0.1	94	0.89	0.82	--	--	< 0.5	--	--	5.0	--	--	--	2,100	0.70		
W-304	Supplementary	Alluvial	10/23/2020				< 0.5	1.3	0.2	0.18		1.2	1.1			< 0.25				< 0.4	< 0.8			0.62		
W-305	Downgradient	Alluvial	12/2/2015	110	< 6	< 6	--	--	--	--	120	--	--	--	--	--	--	--	3.8	--	--	0.0047	1,600	--		
W-305	Downgradient	Alluvial	3/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-305	Downgradient	Alluvial	5/11/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-305	Downgradient	Alluvial	8/27/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-305	Downgradient	Alluvial	9/22/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-305	Downgradient	Alluvial	2/21/2017	110	< 6	< 6	--	--	--	--	110	--	--	--	--	--	--	--	3.2	--	--	--	1,600	--		
W-305	Downgradient	Alluvial	4/11/2017	110	< 6	< 6	--	--	--	--	110	--	--	--	--	--	--	--	3.0	--	--	--	1,500	--		
W-305	Downgradient	Alluvial	4/24/2017	110	< 6	< 6	--	--	--	--	110	--	--	--	--	--	--	--	3.0	--	--	--	1,600	--		
W-305	Downgradient	Alluvial	5/22/2017	110	< 6	< 6	--	--	--	--	110	--	--	--	--	--	--	--	3.1	--	--	--	1,600	--		
W-305	Downgradient	Alluvial	5/24/2017	110	< 6	< 6	--	--	--	--	120	--	--	--	--	--	--	--	3.2	--	--	--	1,700	--		
W-305	Downgradient	Alluvial	6/29/2017	110	< 6	< 6	--	--	--	--	110	--	--	--	--	--	--	--	2.8	--	--	--	1,500	--		
W-305	Downgradient	Alluvial	7/28/2017	110	< 6	< 6	--	--	--	--	110	--	--	--	--	--	--	--	3.1	--	--	--	1,500	--		
W-305	Downgradient	Alluvial	9/6/2017	110	< 6	< 6	--	--	--	--	110	--	--	--	--	--	--	--	2.8	--	--	--	1,500	--		
W-305	Downgradient	Alluvial	12/7/2017	110	< 6	< 6	--	--	--	--	110	--	--	--	--	--	--	--	3.2	--	--	--	1,500	--		
W-305	Downgradient	Alluvial	2/15/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.295	0.347	--	--	--		
W-305	Downgradient	Alluvial	5/19/2018	110	< 6.0	< 6.0	--	--	--	--	110	--	--	--	--	--	--	--	3.0	< 0.5	< 0.7	--	1,500	--		
W-305	Downgradient	Alluvial	5/19/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-305	Downgradient	Alluvial	10/26/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-305	Downgradient	Alluvial	10/26/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.6	< 0.7	--	--	--		
W-305	Downgradient	Alluvial	12/7/2018	99	< 6.0	< 6.0	--	--	--	--	110	--	--	--	--	--	--	--	3.0	< 0.5	< 0.7	11	1,500	--		
W-305	Downgradient	Alluvial	2/15/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	0.8	--	--	--		
W-305	Downgradient	Alluvial	4/17/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	< 0.7	--	--	--		
W-305	Downgradient	Alluvial	8/1/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-305	Downgradient	Alluvial	10/23/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-305	Downgradient	Alluvial	10/23/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-305	Downgradient	Alluvial	4/18/2020	100	< 6	< 6	< 0.5	1.7	0.48	0.28	110	8.1	7.3	--	--	< 0.5	--	--	--	--	--	--	1,600	1.8		

				Additional Analyses																					
				Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Ammonia (as N)	Dissolved Organic Carbon	Iron	Iron	Magnesium	Manganese	Manganese	Nickel	Nitrate as N	Nitrate-Nitrite as N	Nitrite (as N)	Nitrogen	Nitrogen, Kjeldahl, Total	Potassium	Radium 226	Radium 228	SiO2, Silica	Sodium	Total Organic Carbon
				N	N	N	N	Y	N	Y	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N
Constituent: Filtered:				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L	mg/L	mg/L		
Units:				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L	mg/L	mg/L		
BAP BTV				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
BAP GWPS				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-305	Downgradient	Alluvial	10/22/2020	--	--	--	< 0.5	1.7 J	0.36	0.36	--	7.2	7	--	< 0.25	--	--	--	--	< 0.4	< 0.8	--	--	1.5	
W-306	Downgradient	Alluvial	12/2/2015	100	< 6.0	< 6.0	--	--	--	--	120	--	--	--	--	--	--	5.6	< 0.4	< 0.7	11	2,500	--		
W-306	Downgradient	Alluvial	3/9/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.2	< 0.6	--	--	--		
W-306	Downgradient	Alluvial	5/11/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.3	< 0.4	--	--	--		
W-306	Downgradient	Alluvial	8/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.5	< 0.6	--	--	--	--		
W-306	Downgradient	Alluvial	9/22/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.3	< 0.7	--	--	--		
W-306	Downgradient	Alluvial	2/21/2017	150	< 6.0	< 6.0	--	--	--	--	240	--	--	--	--	--	--	3.3	< 0.4	< 0.6	--	6,100	--		
W-306	Downgradient	Alluvial	4/12/2017	150	< 6.0	< 6.0	--	--	--	--	230	--	--	--	--	--	--	3.2	< 0.4	< 0.6	--	5,600	--		
W-306	Downgradient	Alluvial	4/25/2017	150	< 6.0	< 6.0	--	--	--	--	230	--	--	--	--	--	--	2.8	< 0.4	< 0.6	--	5,800	--		
W-306	Downgradient	Alluvial	5/22/2017	160	< 6.0	< 6.0	--	--	--	--	230	--	--	--	--	--	--	2.9	< 0.4	< 0.6	--	5,700	--		
W-306	Downgradient	Alluvial	5/24/2017	150	< 6.0	< 6.0	--	--	--	--	230	--	--	--	--	--	--	2.8	< 0.5	< 0.6	--	5,700	--		
W-306	Downgradient	Alluvial	7/1/2017	140	< 6.0	< 6.0	--	--	--	--	210	--	--	--	--	--	--	2.7	< 0.4	< 0.7	--	6,000	--		
W-306	Downgradient	Alluvial	7/28/2017	140	< 6.0	< 6.0	--	--	--	--	210	--	--	--	--	--	--	2.4	< 0.4	1.1	--	5,400	--		
W-306	Downgradient	Alluvial	9/6/2017	140	< 6.0	< 6.0	--	--	--	--	210	--	--	--	--	--	--	2.2	< 0.5	< 0.7	--	5,700	--		
W-306	Downgradient	Alluvial	12/7/2017	140	< 6.0	< 6.0	--	--	--	--	220	--	--	--	--	--	--	3.1	--	--	--	5,100	--		
W-306	Downgradient	Alluvial	2/15/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1	0.3	--	--	--		
W-306	Downgradient	Alluvial	2/15/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1	0.2	--	--	--		
W-306	Downgradient	Alluvial	5/19/2018	140	< 6.0	< 6.0	--	--	--	--	210	--	--	--	--	--	--	2.5	< 0.5	0.8	--	5,900	--		
W-306	Downgradient	Alluvial	10/26/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-306	Downgradient	Alluvial	10/26/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	< 0.7	--	--	--		
W-306	Downgradient	Alluvial	12/7/2018	130	< 6.0	< 6.0	--	--	--	--	230	--	--	--	--	--	--	2.6	< 0.5	< 0.7	12	5,700	--		
W-306	Downgradient	Alluvial	2/15/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.6	--	--	--		
W-306	Downgradient	Alluvial	4/16/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	< 0.7	--	--	--		
W-306	Downgradient	Alluvial	8/1/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-306	Downgradient	Alluvial	10/23/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-306	Downgradient	Alluvial	4/19/2020	130	< 6	< 6	< 0.5	2.7	< 0.03	< 0.1	230	< 0.003	< 0.01	--	--	< 0.5	--	--	--	9.7 J	--	--	--	5,500	2.5
W-306	Downgradient	Alluvial	4/19/2020	130	< 6	< 6	< 0.5	2.6	< 0.03	< 0.1	230	< 0.015	< 0.01	--	--	< 0.5	--	--	--	3.6 J	--	--	--	5,700	2.4
W-306	Downgradient	Alluvial	10/22/2020				< 0.5	2.2	0.11	0.1		0.0011 J	< 0.01 U		< 0.25					< 0.4	< 0.8			2.2	
W-307	Supplementary	Alluvial	12/8/2018	100	< 6.0	< 6.0	--	--	--	--	150	--	--	--	--	--	--	5.4	< 0.5	< 0.7	13	1,700	--		
W-307	Supplementary	Alluvial	2/15/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.6	--	--	--		
W-307	Supplementary	Alluvial	4/16/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-307	Supplementary	Alluvial	6/25/2019	--	--	--	--	--	--	--	140	--	--	--	< 0.10	< 0.10	< 0.10	< 0.10	< 0.50	--	--	--	1,700	--	
W-307	Supplementary	Alluvial	8/8/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-307	Supplementary	Alluvial	10/24/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-307	Supplementary	Alluvial	4/17/2020	110	< 6	< 6	< 0.5	1.6	0.16	< 0.1	130	0.030 J	0.027	--	--	< 0.5	--	--	--	4.2	--	--	--	1,600	1.3
W-307	Supplementary	Alluvial	10/23/2020				< 0.5	1.2	0.18	0.17		0.042	0.041		< 0.25					< 0.4	< 0.8			1.1 J	
W-308	Supplementary	Alluvial	12/8/2018	160	< 6.0	< 6.0	--	--	--	--	120	--	--	--	--	--	--	7.7	< 0.5	< 0.7	12	1,900	--		
W-308	Supplementary	Alluvial	2/15/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.6	< 0.7	--	--	--		
W-308	Supplementary	Alluvial	4/16/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-308	Supplementary	Alluvial	6/25/2019	--	--	--	--	--	--	--	120	--	--	--	0.20	0.20	< 0.10	0.20	< 0.50	--	--	--	2,100	--	
W-308	Supplementary	Alluvial	8/8/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-308	Supplementary	Alluvial	10/24/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-308	Supplementary	Alluvial	4/17/2020	170	< 6	< 6	< 0.5	1.2	0.031 J	< 0.1	120	0.072	0.073	--	--	< 0.5	--	--	--	6.4	--	--	--	2,100	1.0
W-308	Supplementary	Alluvial	10/24/2020				< 0.5	0.95	0.12	0.053 J		0.34	0.32		0.68					< 0.4	< 0.8			0.93	
W-309	Supplementary	Alluvial	12/8/2018	55	< 6.0	< 6.0	--	--	--	--	34	--	--	--	--	--	--	12	< 0.5	< 0.7	22	1,700	--		
W-309	Supplementary	Alluvial	2/15/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-309	Supplementary	Alluvial	4/16/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-309	Supplementary	Alluvial	6/25/2019	--	--	--	--	--	--	--	88	--	--	--	2.7	2.7	< 0.10	2.7	< 0.50	--	--	--	1,900	--	
W-309	Supplementary	Alluvial	8/8/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-309	Supplementary	Alluvial	10/24/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-309	Supplementary	Alluvial	5/4/2020	160	< 6	< 6	< 0.5	< 1	< 0.1	< 0.1	86	0.83	0.83	--	--	2.6	--	--	--	8.9	< 0.4	< 0.8	--	1,800	< 1
W-309	Supplementary	Alluvial	10/24/2020				< 0.5	0.54	0.11	0.038 J		0.56	0.55		3.2					< 0.4	< 0.8			0.47 J	
W-314	Downgradient	Alluvial	12/2/2015	99	< 6.0	< 6.0	--	--	--	--	150	--	--	--	--	--	--	2.4	< 0.4	< 0.7	9.2	1,500	--		
W-314	Downgradient	Alluvial	3/10/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.2	< 0.5	--	--	--		

				Groundwater Quality Data for BAP Monitoring Wells																					
				Additional Analyses																					
				Alkalinity Bicarbonate	Alkalinity Carbonate	Alkalinity Hydroxide	Ammonia (as N)	Dissolved Organic Carbon	Iron	Iron	Magnesium	Manganese	Manganese	Nickel	Nitrate as N	Nitrate-Nitrite as N	Nitrite (as N)	Nitrogen	Nitrogen, Kjeldahl, Total	Potassium	Radium 226	Radium 228	SiO2, Silica	Sodium	Total Organic Carbon
				Filtered: N	N	N	N	Y	N	Y	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N
Units:				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pCi/L	pCi/L	mg/L	mg/L	mg/L		
BAP BTV				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
BAP GWPS				--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
W-314	Downgradient	Alluvial	5/11/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.3	< 0.5	--	--	--		
W-314	Downgradient	Alluvial	8/26/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.6	--	--	--		
W-314	Downgradient	Alluvial	9/22/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.4	< 0.7	--	--	--		
W-314	Downgradient	Alluvial	2/21/2017	100	< 6.0	< 6.0	--	--	--	160	--	--	--	--	--	--	--	2.1	< 0.4	< 0.6	--	1,600	--		
W-314	Downgradient	Alluvial	4/11/2017	100	< 6.0	< 6.0	--	--	--	160	--	--	--	--	--	--	--	1.9	< 0.4	< 0.6	--	1,500	--		
W-314	Downgradient	Alluvial	4/25/2017	100	< 6.0	< 6.0	--	--	--	160	--	--	--	--	--	--	--	1.8	0.5	< 0.6	--	1,600	--		
W-314	Downgradient	Alluvial	5/22/2017	100	< 6.0	< 6.0	--	--	--	170	--	--	--	--	--	--	--	1.9	< 0.4	< 0.6	--	1,600	--		
W-314	Downgradient	Alluvial	5/24/2017	100	< 6.0	< 6.0	--	--	--	170	--	--	--	--	--	--	--	1.9	< 0.5	< 0.6	--	1,600	--		
W-314	Downgradient	Alluvial	6/30/2017	100	< 6.0	< 6.0	--	--	--	160	--	--	--	--	--	--	--	1.6	< 0.4	< 0.7	--	1,500	--		
W-314	Downgradient	Alluvial	7/28/2017	100	< 6.0	< 6.0	--	--	--	160	--	--	--	--	--	--	--	1.7	< 0.4	< 0.6	--	1,500	--		
W-314	Downgradient	Alluvial	9/7/2017	110	< 6.0	< 6.0	--	--	--	170	--	--	--	--	--	--	--	1.7	< 0.5	< 0.7	--	1,500	--		
W-314	Downgradient	Alluvial	12/7/2017	100	< 6.0	< 6.0	--	--	--	170	--	--	--	--	--	--	--	2.0	--	--	--	1,500	--		
W-314	Downgradient	Alluvial	2/15/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.1	0.2	--	--	--		
W-314	Downgradient	Alluvial	5/20/2018	100	< 6.0	< 6.0	--	--	--	160	--	--	--	--	--	--	--	1.9	< 0.5	< 0.7	--	1,500	--		
W-314	Downgradient	Alluvial	10/24/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-314	Downgradient	Alluvial	10/24/2018	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	< 0.7	--	--	--		
W-314	Downgradient	Alluvial	12/8/2018	94	< 6.0	< 6.0	--	--	--	160	--	--	--	--	--	--	--	1.8	< 0.5	0.7	8.9	1,500	--		
W-314	Downgradient	Alluvial	2/15/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-314	Downgradient	Alluvial	4/16/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 0.5	< 0.7	--	--	--		
W-314	Downgradient	Alluvial	8/1/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-314	Downgradient	Alluvial	10/24/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-314	Downgradient	Alluvial	4/19/2020	98	< 6	< 6	< 0.5	1.0	< 0.03	< 0.1	170	0.063	0.057	--	--	< 0.5	--	--	< 0.73	--	--	--	1,500	0.97	
W-314	Downgradient	Alluvial	10/23/2020				< 0.5	0.98	0.058 J	0.04 J		0.082	0.082			4.5			< 0.4	< 0.8				0.95	
W-317	Supplementary	Alluvial	3/30/2019	190	< 6.0	< 6.0	--	--	--	--	110	--	--	--	--	--	--	7.1	--	--	--	650	--		
W-317	Supplementary	Alluvial	4/17/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-317	Supplementary	Alluvial	4/17/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-317	Supplementary	Alluvial	8/8/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-317	Supplementary	Alluvial	8/9/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-317	Supplementary	Alluvial	10/24/2019	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-317	Supplementary	Alluvial	4/16/2020	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
W-317	Supplementary	Alluvial	10/21/2020				--	--	--	--		--	--			--			< 0.4	< 0.8			--		

Notes:

BTV exceedances are shown in grey shaded cells. GWPS exceedence are shown in red text.
Duplicate sample dates under the same location are either field duplicates or are instances of samples with multiple field/lab sample IDs on the same date.

Abbreviations and Data Qualifiers:

< = less than
BAP = Bottom Ash Pond
BTV = Background Threshold Value
degrees C = degrees Celsius
GWPS = Groundwater Protection Standard
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
mg/L = milligrams per liter
pCi/L = Picocuries per liter
su = standard units
UJ = The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

APPENDIX E

**WOOD TECHNICAL MEMORANDUM DOCUMENTING THE STATISTICAL ANALYSIS
OF APPENDIX III CONSTITUENT DATA COLLECTED FROM THE BAM THROUGH
OCTOBER 2019**



Technical Memorandum

To:	Natalie Chrisman Lazarr, PE Arizona Public Service	File No:	14-2018-2040
From:	Carla Landrum, PhD Formation Environmental, LLC	Reviewed by:	Emily LoDolce, PE Wood Environment and Infrastructure Solutions, Inc.
Date:	April 13, 2020		

**Subject: CCR GROUNDWATER DETECTION MONITORING
STATISTICAL ANALYSIS AND RESULTS FOR THE BOTTOM ASH MONOFILL
APPENDIX III CONSTITUENT DATA COLLECTED THROUGH OCTOBER 2019
Arizona Public Service Cholla Power Plant – Navajo County, Arizona**

1.0 INTRODUCTION

This Technical Memorandum (Tech Memo) was prepared by Wood Environment and Infrastructure Solutions, Inc. (Wood) and its subcontractor, Formation Environmental, LLC (Formation) on behalf of Arizona Public Service (APS), to document the ongoing statistical evaluation of detection monitoring (i.e., Appendix III constituent) groundwater data associated with the Bottom Ash Monofill (BAM) located at the APS Cholla Power Plant (Cholla) in Navajo County, Arizona.

The statistical evaluation documented herein incorporates the results of detection monitoring at the BAM through October 2019. The Background Threshold Values (BTVs) in this Tech Memo recognize recommendations put forth in the Alternative Source Demonstration (Wood, 2019a) to address historical statistically significant increases (SSIs) in fluoride concentrations over BTVs at the BAM (Wood 2019b).

The following sections present data inputs, statistical methods, results, and recommendations for the subject analysis.

2.0 DATA INPUTS

The BAM groundwater monitoring well network consists of one background monitoring well (M-54) and three compliance (i.e., downgradient), monitoring wells (M-59, M-60, and M-61). The period of evaluation for this BAM Appendix III constituent statistical analysis ranges from December 2015 through October 2019 and includes the minimum of eight initial, or baseline, sampling rounds and four subsequent sampling rounds of detection monitoring. Due principally to the Coal Combustion Residuals (CCR) Rule (Federal Register, 2018) requirement that a minimum of eight initial rounds of data be collected from the site prior to October 17, 2017, the frequency of sample collection prior to this date is short and variable (e.g., biweekly to quarterly sampling).

This data evaluation evaluates 18 samples for boron, calcium, chloride, fluoride, sulfate, and total dissolved solids (TDS) within each compliance monitoring well and 17 samples for pH within each compliance monitoring well. The first, second, third, fourth, and fifth rounds of detection monitoring at the BAM were conducted in December 2017, May 2018, October 2018, April 2019, and October 2019, respectively; all Appendix III constituents were evaluated in samples collected during these monitoring events.

Appendix A contains the contents of the ProUCL data upload tables for the subject analysis. The Appendix III detection monitoring analytes are listed by name or chemical symbol as column headers in the ProUCL data upload table. By ProUCL convention (United States Environmental Protection Agency [USEPA], 2015), each analyte has a corresponding data column (indicated with a "D_" prefix) that indicates if the analyte was detected or not at a concentration that exceeds the analytical reporting limit, where detectable concentrations are symbolized by a "1" and non-detectable concentrations are symbolized by a "0." The detection frequency is 100% for all sample data listed in Appendix A.

3.0 METHODS

The statistical methods and analysis approach used to evaluate BAM Appendix III constituent data are documented in the *Statistical Data Analysis Work Plan* (SDAWP) (Wood, 2018) prepared for the site.

The not to exceed BTVs in Table 1 reflect previously calculated BTVs (Wood, 2019b) in addition to the updated BTV recommendations put forth in the 2019 ASD for the BAM (Wood, 2019a).

Prior to comparing sample concentrations to corresponding BTVs to assess whether an SSI is indicated, exploratory data analysis (EDA) including preparation of box plots, goodness of fit testing, Mann-Kendall trend testing, and outlier testing was performed.

4.0 RESULTS

Table 1 presents the previously calculated BTVs (Wood, 2019b), intrawell upper prediction limits (UPLs) for each Appendix III constituent, and the type of resampling strategy in effect by each constituent.

Table 2 summarizes: 1) which Appendix III constituents exhibit exceedances above their respective BTVs by compliance well and 2) which constituents exhibit statistically significant temporal trends.

Appendix B contains the raw ProUCL EDA outputs as reference for the following statistical findings:

Monitoring Well M-59. There are no Appendix III sample exceedances for the October 2019 sampling event for this well. The absence of an exceedance for pH at this monitoring well for the October 2019 sampling event declares the April 2019 pH exceedance statistically insignificant (Wood, 2019b). For sampling events occurring through October 2019, there are no significant ($p < 0.05$) temporal trends for Appendix III constituents at this monitoring location.

Monitoring Well M-60. There are no Appendix III sample exceedances for the October 2019 sampling event for this well. For sampling events occurring through October 2019, there is a statistically significant ($p < 0.05$) decreasing trend for calcium at this monitoring location.

Monitoring Well M-61. There are no Appendix III sample exceedances for the October 2019 sampling event for this well. For sampling events occurring through October 2019, there is a statistically significant ($p < 0.05$) decreasing trend for calcium at this monitoring location.

5.0 CONCLUSIONS AND RECOMMENDATIONS

This statistical analysis results in the following conclusions and recommendations for the BAM detection monitoring statistical analysis:

- There is insufficient evidence to declare an SSI for pH at M-59.
- Detection Monitoring should continue at the BAM.
- Trend testing after each sampling round should continue to assess changes in temporal trend significance.
- Statistical method selection and BTVs should be updated after 1 to 2 years of future sampling events.

6.0 REFERENCES

- Federal Register, 2018. 40 Code of Federal Regulations Part 257 – Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule promulgated April 17, 2015 with Amendments to the National Minimum Criteria (Phase One, Part One) effective August 29, 2018.
- United States Environmental Protection Agency (USEPA), 2009. *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance*. EPA 530/R-09-007. Environmental Protection Agency Office of Resource Conservation and Recovery.
- USEPA, 2015. *ProUCL (Version 5.1.1) User Guide, Statistical Software for Environmental Applications for Data Sets with and without Nondetect Observations*. EPA/600/R-07/041. Washington D.C. October 2015.
- Wood Environment & Infrastructure Solutions, Inc. (Wood), 2018. *Statistical Data Analysis Work Plan*. Coal Combustion Residual Rule Groundwater Monitoring System Compliance. Cholla Power Plant. Navajo County, Arizona. Prepared for Arizona Public Service. October 15, 2018.
- Wood, 2019a. *Alternative Source Demonstration for Fluoride at the BAM*. Arizona Public Service Cholla Power Plant. Navajo County, Arizona. August 14, 2019.
- Wood, 2019b. *CCR Groundwater Detection Monitoring Statistical Analysis and Results for the Bottom Ash Monofill*. Arizona Public Service Cholla Power Plant. Navajo County, Arizona. April 15, 2019.
- Wood, 2019c. *CCR Groundwater Detection Monitoring Statistical Analysis and Results for the Bottom Ash Monofill Appendix III Constituent Data Collected Through April 2019*. Arizona Public Service Cholla Power Plant. Navajo County, AZ. October 15, 2019.

ATTACHMENTS

- Table 1 – BTVs and Intrawell UPLs for the Cholla BAM
- Table 2 – Cholla BAM Downgradient Sample Data Summary
- Appendix A – ProUCL Data Upload Table
- Appendix B – ProUCL EDA Output Files

wood.

TABLES



Table 1
BTVs and Intrawell UPLs for the Cholla BAM
Appendix III Statistical Analysis

Background Well	Dates Corresponding to Data Used to Derive UPL	Constituent	BTV (Calculation Method)	Units	Resampling Strategy ¹	Reference
M-54	12/3/2015-9/5/2017	Boron	0.55 (P-UPL)	mg/L	1 of 2	Wood, 2019b
M-54	12/3/2015-9/5/2017	Calcium	100 (NP-UPL)	mg/L	1 of 3	Wood, 2019b
M-54	12/3/2015-9/5/2017	Chloride	1,600 (NP-UPL)	mg/L	1 of 3	Wood, 2019b
M-54	12/3/2015-9/5/2017	Fluoride	1.4 (NP-UPL) ²	mg/L	1 of 3	Wood, 2019b
M-54	12/3/2015-9/5/2017	pH (upper limit)	7.8 (P-UPL)	SU	1 of 2	Wood, 2019b
M-54	12/3/2015-9/5/2017	pH (lower limit)	7.3 (P-LPL)	SU	1 of 2	Wood, 2019b
M-54	12/3/2015-9/5/2017	Sulfate	380 (P-UPL)	mg/L	1 of 2	Wood, 2019b
M-54	12/3/2015-9/5/2017	TDS	3200 (P-UPL)	mg/L	1 of 2	Wood, 2019b

Compliance Well	Dates Corresponding to Data Used to Derive UPL	Constituent	Intrawell UPL (Calculation Method ¹)	Units	Resampling Strategy ²	Reference
M-60	12/3/15-9/5/2017	Fluoride	1.5 (NP-UPL)	mg/L	1 of 3	Wood, 2019c
M-61	12/3/15-9/5/2017	Fluoride	1.5 (NP-UPL)	mg/L	1 of 3	Wood, 2019c

Notes:

BAM = Bottom Ash Monofill
BTV = background threshold value
LPL = lower prediction limit

mg/L = milligrams per liter
NP = Non Parametric
P = Parametric

SU = standard units
TDS = total dissolved solids
UPL = upper prediction limit

¹ A 1 of 2 resampling strategy is in place for parametric prediction limits. A 1 of 3 resampling strategy is in place for non-parametric prediction limits and the limit represents the maximum concentration value of the data set (i.e., maximum order statistic). The BTV for calcium represents the second highest concentration value because the maximum concentration value is a perceived outlier and was removed from the evaluation.

² Only applicable to M-59.

Table 2
Cholla BAM Downgradient Sample Data Summary
Appendix III Statistical Analysis

Well	Sample_ID	SampDate	Constituent Concentration						
			Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS
M-59	7803_O	03-Dec-15	0.5	87	1300	1.3	7.53	340	2700
M-59	CH-M-59-0316_O	10-Mar-16	0.48	85	1400	1.3	7.57	350	2700
M-59	CH-CCR-M59-516_O	20-May-16	0.49	86	1400	1.4	---	340	2700
M-59	CH-CCR-M59-816_O	27-Aug-16	0.50	89	1400	1.4	7.6	350	2700
M-59	CH-CCR-M59-916_O	22-Sep-16	0.50	88	1300	1.4	7.8	340	2900
M-59	CH-CCR-M59-217_O	22-Feb-17	0.48	86	1200	1.3	7.8	330	2800
M-59	CH-CCR-M59-41117_O	11-Apr-17	0.49	90	1400	1.3	8.1	350	2800
M-59	CH-CCR-M59-42417_O	24-Apr-17	0.52	89	1300	1.4	7.7	350	2800
M-59	CH-CCR-M59-51917_O	19-May-17	0.50	93	1400	1.4	7.8	360	2700
M-59	CH-CCR-M59-52517_O	25-May-17	0.50	88	1300	1.4	7.6	350	2700
M-59	CH-CCR-M59-62917_O	29-Jun-17	0.49	84	1400	1.5	7.8	370	2500
M-59	CH-CCR-M59-72917_O	29-Jul-17	0.53	92	1300	1.5	7.6	340	2800
M-59	CH-CCR-M59-90517_O	05-Sep-17	0.51	90	1300	1.4	7.7	360	2700
M-59	CH-CCR-M59-120717_O	07-Dec-17	0.49	86	1400	1.4	7.7	350	2700
M-59	CH-CCR-M-59-52518_O	25-May-18	0.49	85	1400	1.4	7.5	350	2700
M-59	CH-CCR-M-59-102618	26-Oct-18	0.48	88	1400	1.4	7.6	360	2500
M-59	CH-CCR-M59-40919	09-Apr-19	0.5	86	1200	1.4	7.9	330	2700
M-59	CH-CCR-M59-102319	23-Oct-19	0.48	84	1400	1.3	7.5	350	2800
Units:			mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
BTV or Intrawell UPL ^{1,2} :			0.55	100	1600	1.4	7.8/7.3	380	3200
Temporal Trend ³ :			None	None	None	None	None	None	None

Table 2
Cholla BAM Downgradient Sample Data Summary
Appendix III Statistical Analysis

Well	Sample_ID	SampDate	Constituent Concentration						
			Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS
M-60	7801_O	03-Dec-15	0.54	88	1400	1.3	7.56	350	2800
M-60	CH-M-60A-0316_O	09-Mar-16	0.50	86	1400	1.4	7.83	350	2800
M-60	CH-CCR-M60-516_O	20-May-16	0.50	89	1400	1.5	---	350	2800
M-60	CH-CCR-M60-816_O	27-Aug-16	0.52	90	1400	1.5	7.5	360	2800
M-60	CH-CCR-M60-916_O	22-Sep-16	0.51	88	1300	1.4	7.8	350	3000
M-60	CH-CCR-M60-217_O	22-Feb-17	0.52	91	1300	1.4	7.8	340	2800
M-60	CH-CCR-M60-41117_O	11-Apr-17	0.48	90	1400	1.4	8.0	360	2900
M-60	CH-CCR-M60-42417_O	24-Apr-17	0.53	86	1400	1.4	7.8	350	2700
M-60	CH-CCR-M60-51917_O	19-May-17	0.53	92	1400	1.4	7.7	360	2800
M-60	CH-CCR-M60-52517_O	25-May-17	0.51	86	1300	1.4	7.7	350	2800
M-60	CH-CCR-M60-62917_O	29-Jun-17	0.51	84	1500	1.5	7.7	440	2500
M-60	CH-CCR-M60-72917_O	29-Jul-17	0.53	89	1400	1.5	7.6	370	2800
M-60	CH-CCR-M60-90517_O	05-Sep-17	0.53	90	1400	1.5	7.6	360	2800
M-60	CH-CCR-M60-120717_O	07-Dec-17	0.50	85	1500	1.4	7.6	360	2900
M-60	CH-CCR-M-60-52518_O	25-May-18	0.50	83	1400	1.5	7.5	350	2800
M-60	CH-CCR-M-60-102618	26-Oct-18	0.49	88	1400	1.4	7.7	350	2600
M-60	CH-CCR-M60-40919	09-Apr-19	0.51	84	1300	1.4	7.7	350	2800
M-60	CH-CCR-M60-102219	22-Oct-19	0.5	85	1400	1.4	7.6	360	2800
Units:			mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
BTV or Intrawell UPL ^{1,2} :			0.55	100	1600	1.5	7.8/7.3	380	3200
Temporal Trend ³ :			None	Decreasing	None	None	None	None	None

Table 2
Cholla BAM Downgradient Sample Data Summary
Appendix III Statistical Analysis

Well	Sample_ID	SampDate	Constituent Concentration						
			Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS
M-61	7802_O	03-Dec-15	0.51	90	1400	1.3	7.22	350	2800
M-61	CH-M-61-0316_O	10-Mar-16	0.49	90	1400	1.4	7.59	340	2800
M-61	CH-CCR-M61-516_O	20-May-16	0.49	89	1400	1.4	---	350	2800
M-61	CH-CCR-M61-816_O	27-Aug-16	0.50	90	1400	1.5	7.5	360	2900
M-61	CH-CCR-M61-916_O	22-Sep-16	0.50	90	1300	1.4	7.9	350	3000
M-61	CH-CCR-M61-217_O	22-Feb-17	0.50	92	1100	1.4	7.8	340	2700
M-61	CH-CCR-M61-41117_O	11-Apr-17	0.50	93	1700	1.4	8.0	420	3000
M-61	CH-CCR-M61-42417_O	24-Apr-17	0.52	88	1400	1.4	7.7	360	2700
M-61	CH-CCR-M61-51917_O	19-May-17	0.5	92	1400	1.3	7.8	370	2800
M-61	CH-CCR-M61-52517_O	25-May-17	0.51	92	1400	1.4	7.7	370	2800
M-61	CH-CCR-M61-62917_O	29-Jun-17	0.50	86	1500	1.5	7.8	380	2700
M-61	CH-CCR-M61-72917_O	29-Jul-17	0.52	94	1300	1.5	7.6	360	2900
M-61	CH-CCR-M61-90517_O	05-Sep-17	0.50	91	1400	1.5	7.6	360	2800
M-61	CH-CCR-M61-120717_O	07-Dec-17	0.49	88	1500	1.4	7.6	360	2900
M-61	CH-CCR-M-61-52518_O	25-May-18	0.48	87	1400	1.5	7.5	390	2800
M-61	CH-CCR-M-61-102618	26-Oct-18	0.48	91	1400	1.4	7.5	360	2600
M-61	CH-CCR-M61-40919	09-Apr-19	0.5	88	1300	1.4	7.7	340	2800
M-61	CH-CCR-M61-102219	22-Oct-19	0.48	87	1400	1.4	7.8	350	2700
Units:			mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
BTV or Intrawell UPL ^{1,2} :			0.55	100	1600	1.5	7.8/7.3	380	3200
Temporal Trend ³ :			None	None	None	None	None	None	None

Table 2
Cholla BAM Downgradient Sample Data Summary
Appendix III Statistical Analysis

Well	Sample_ID	SampDate	Constituent Concentration						
			Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS

Notes:

BTV = background threshold value

mq/L = milligrams per liter

TDS = total dissolved solids

UPL = upper prediction limit

SU = standard units

0.50

Value from baseline monitoring period (December 2015 to September 2017)

Reported value in current sampling round (October 2019) exceeds the BTV or UPL

Statistically significant increasing trend present

None

Insufficient evidence to identify a trend.

¹ Values updated during a recent update (Wood, 2019c) presented in bolded red text; see Table 1 for relevant BTV and Intrawell UPL information.

² For pH, values presented refer to the Upper Prediction Limit/Lower Prediction Limit, respectively.

³ Temporal trends evaluated with Mann-Kendall trend tests ($p < 0.05$); tied values (sequential sample concentrations that are equal overtime) can cause misleading trend results.

APPENDIX A

PROUCL DATA UPLOAD TABLE

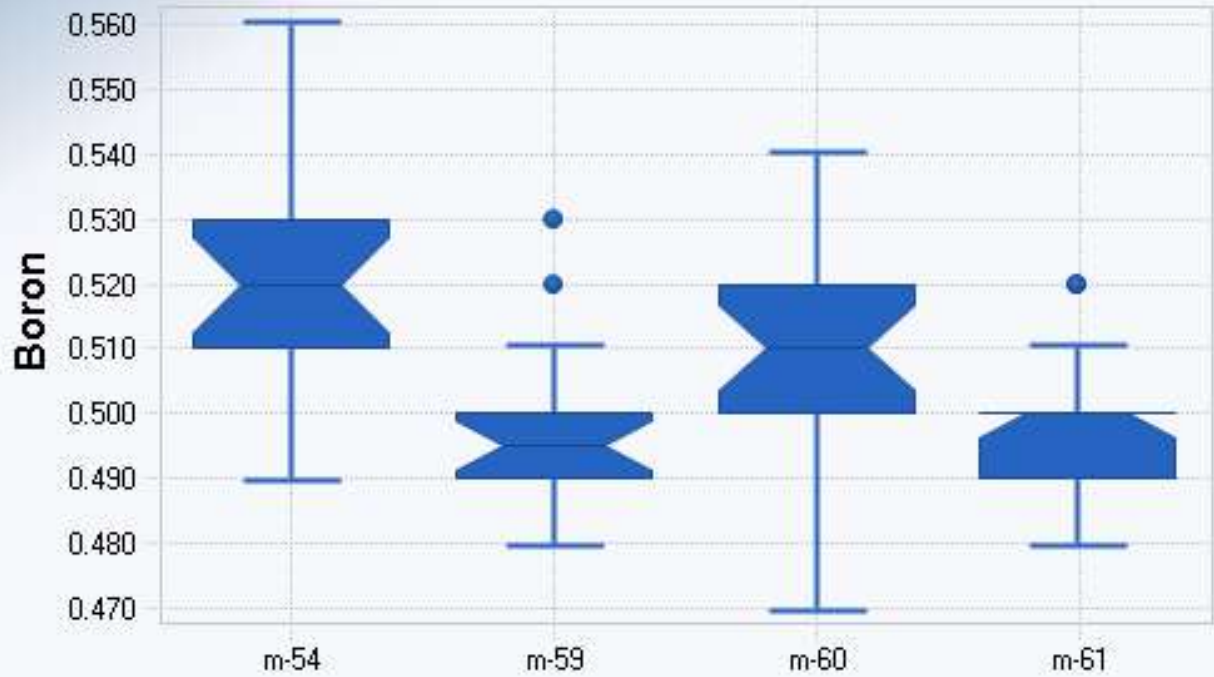
Well_ID	Sample_Date	Num_Date	Boron	D_Boron	Calcium	D_Calcium	Chloride	D_Chloride	Fluoride	D_Fluoride	Hydrogen i	D_pH	Sulfate	D_Sulfate	TDS	D_TDS
M-54	12/3/2015	42341	0.52	1	100	1	1500	1	1.2	1	7.34	1	380	1	3000	1
M-54	3/10/2016	42439	0.53	1	100	1	1600	1	1.3	1	7.56	1	360	1	2900	1
M-54	5/20/2016	42510	0.51	1	100	1	1500	1	1.4	1	NA	1	350	1	3000	1
M-54	8/27/2016	42609	0.53	1	110	1	1600	1	1.4	1	7.5	1	370	1	3100	1
M-54	9/22/2016	42635	0.52	1	99	1	1400	1	1.35	1	7.7	1	350	1	3200	1
M-54	2/21/2017	42787	0.52	1	100	1	1300	1	1.35	1	7.7	1	350	1	2900	1
M-54	4/11/2017	42836	0.51	1	100	1	1500	1	1.25	1	7.7	1	360	1	3100	1
M-54	4/24/2017	42849	0.53	1	95	1	1500	1	1.35	1	7.6	1	370	1	3000	1
M-54	5/19/2017	42874	0.5	1	99	1	1600	1	1.35	1	7.8	1	380	1	3200	1
M-54	5/25/2017	42880	0.52	1	100	1	1500	1	1.4	1	7.7	1	370	1	3200	1
M-54	6/29/2017	42915	0.51	1	97	1	1600	1	1.4	1	7.6	1	380	1	2900	1
M-54	7/29/2017	42945	0.56	1	100	1	1500	1	1.4	1	7.4	1	350	1	3100	1
M-54	9/5/2017	42983	0.55	1	100	1	1500	1	1.4	1	7.5	1	370	1	3100	1
M-54	12/7/2017	43076	0.51	1	97	1	1600	1	1.4	1	7.6	1	360	1	3000	1
M-54	5/25/2018	43245	0.5	1	96	1	1500	1	1.4	1	7.4	1	350	1	3000	1
M-54	10/26/2018	43399	0.5	1	100	1	1500	1	1.4	1	7.5	1	360	1	2900	1
M-54	4/9/2019	43564	0.53	1	98	1	1400	1	1.3	1	7.7	1	340	1	3100	1
M-54	10/22/2019	43760	0.49	1	95	1	1500	1	1.3	1	7.4	1	350	1	2900	1
M-59	12/3/2015	42341	0.5	1	87	1	1300	1	1.3	1	7.53	1	340	1	2700	1
M-59	3/10/2016	42439	0.48	1	85	1	1400	1	1.3	1	7.57	1	350	1	2700	1
M-59	5/20/2016	42510	0.49	1	86	1	1400	1	1.4	1	NA	1	340	1	2700	1
M-59	8/27/2016	42609	0.5	1	89	1	1400	1	1.4	1	7.6	1	350	1	2700	1
M-59	9/22/2016	42635	0.5	1	88	1	1300	1	1.4	1	7.8	1	340	1	2900	1
M-59	2/22/2017	42788	0.48	1	86	1	1200	1	1.4	1	7.8	1	330	1	2800	1
M-59	4/11/2017	42836	0.49	1	90	1	1400	1	1.3	1	8.1	1	350	1	2800	1
M-59	4/24/2017	42849	0.52	1	89	1	1300	1	1.3	1	7.7	1	350	1	2800	1
M-59	5/19/2017	42874	0.5	1	93	1	1400	1	1.4	1	7.8	1	360	1	2700	1
M-59	5/25/2017	42880	0.5	1	88	1	1300	1	1.4	1	7.6	1	350	1	2700	1
M-59	6/29/2017	42915	0.49	1	84	1	1400	1	1.5	1	7.8	1	370	1	2500	1
M-59	7/29/2017	42945	0.53	1	92	1	1300	1	1.5	1	7.6	1	340	1	2800	1
M-59	9/5/2017	42983	0.51	1	90	1	1300	1	1.4	1	7.7	1	360	1	2700	1
M-59	12/7/2017	43076	0.49	1	86	1	1400	1	1.4	1	7.7	1	350	1	2700	1
M-59	5/25/2018	43245	0.49	1	85	1	1400	1	1.4	1	7.5	1	350	1	2700	1
M-59	10/26/2018	43399	0.48	1	88	1	1400	1	1.4	1	7.6	1	360	1	2500	1
M-59	4/9/2019	43564	0.5	1	86	1	1200	1	1.4	1	7.9	1	330	1	2700	1
M-59	10/23/2019	43761	0.48	1	84	1	1400	1	1.3	1	7.5	1	350	1	2800	1
M-60	12/3/2015	42341	0.54	1	88	1	1400	1	1.3	1	7.56	1	350	1	2800	1
M-60	3/9/2016	42438	0.5	1	86	1	1400	1	1.4	1	7.83	1	350	1	2800	1
M-60	5/20/2016	42510	0.5	1	89	1	1400	1	1.5	1	NA	1	350	1	2800	1
M-60	8/27/2016	42609	0.52	1	90	1	1400	1	1.5	1	7.5	1	360	1	2800	1
M-60	9/22/2016	42635	0.51	1	88	1	1300	1	1.45	1	7.8	1	350	1	3000	1
M-60	2/22/2017	42788	0.52	1	91	1	1300	1	1.45	1	7.8	1	340	1	2800	1
M-60	4/11/2017	42836	0.475	1	87	1	1350	1	1.4	1	7.9	1	365	1	2900	1
M-60	4/24/2017	42849	0.53	1	86	1	1400	1	1.4	1	7.8	1	350	1	2700	1
M-60	5/19/2017	42874	0.53	1	92	1	1400	1	1.45	1	7.7	1	360	1	2800	1
M-60	5/25/2017	42880	0.51	1	86	1	1300	1	1.45	1	7.7	1	350	1	2800	1

M-60	6/29/2017	42915	0.505	1	84	1	1500	1	1.5	1	7.75	1	410	1	2600	1
M-60	7/29/2017	42945	0.53	1	89	1	1400	1	1.5	1	7.6	1	370	1	2800	1
M-60	9/5/2017	42983	0.525	1	89.5	1	1400	1	1.5	1	7.6	1	360	1	2750	1
M-60	12/7/2017	43076	0.505	1	85.5	1	1450	1	1.4	1	7.6	1	355	1	2900	1
M-60	5/25/2018	43245	0.5	1	83	1	1400	1	1.5	1	7.5	1	350	1	2800	1
M-60	10/26/2018	43399	0.49	1	88	1	1400	1	1.4	1	7.7	1	350	1	2600	1
M-60	4/9/2019	43564	0.51	1	84	1	1300	1	1.4	1	7.7	1	350	1	2800	1
M-60	10/22/2019	43760	0.5	1	85	1	1400	1	1.4	1	7.6	1	360	1	2800	1
M-61	12/3/2015	42341	0.51	1	90	1	1400	1	1.3	1	7.22	1	350	1	2800	1
M-61	3/10/2016	42439	0.49	1	90	1	1400	1	1.4	1	7.59	1	340	1	2800	1
M-61	5/20/2016	42510	0.49	1	89	1	1400	1	1.4	1	NA	1	350	1	2800	1
M-61	8/27/2016	42609	0.5	1	90	1	1400	1	1.5	1	7.5	1	360	1	2900	1
M-61	9/22/2016	42635	0.5	1	90	1	1300	1	1.45	1	7.9	1	350	1	3000	1
M-61	2/22/2017	42788	0.5	1	92	1	1100	1	1.45	1	7.8	1	340	1	2700	1
M-61	4/11/2017	42836	0.5	1	93	1	1700	1	1.35	1	8	1	420	1	3000	1
M-61	4/24/2017	42849	0.52	1	88	1	1400	1	1.4	1	7.7	1	360	1	2700	1
M-61	5/19/2017	42874	0.5	1	92	1	1400	1	1.35	1	7.8	1	370	1	2800	1
M-61	5/25/2017	42880	0.51	1	92	1	1400	1	1.4	1	7.7	1	370	1	2800	1
M-61	6/29/2017	42915	0.5	1	86	1	1500	1	1.5	1	7.8	1	380	1	2700	1
M-61	7/29/2017	42945	0.52	1	94	1	1300	1	1.5	1	7.6	1	360	1	2900	1
M-61	9/5/2017	42983	0.5	1	91	1	1400	1	1.5	1	7.6	1	360	1	2800	1
M-61	12/7/2017	43076	0.49	1	88	1	1500	1	1.4	1	7.6	1	360	1	2900	1
M-61	5/25/2018	43245	0.48	1	87	1	1400	1	1.5	1	7.5	1	390	1	2800	1
M-61	10/26/2018	43399	0.48	1	91	1	1400	1	1.4	1	7.5	1	360	1	2600	1
M-61	4/9/2019	43564	0.5	1	88	1	1300	1	1.4	1	7.7	1	340	1	2800	1
M-61	10/22/2019	43760	0.48	1	87	1	1400	1	1.4	1	7.8	1	350	1	2700	1

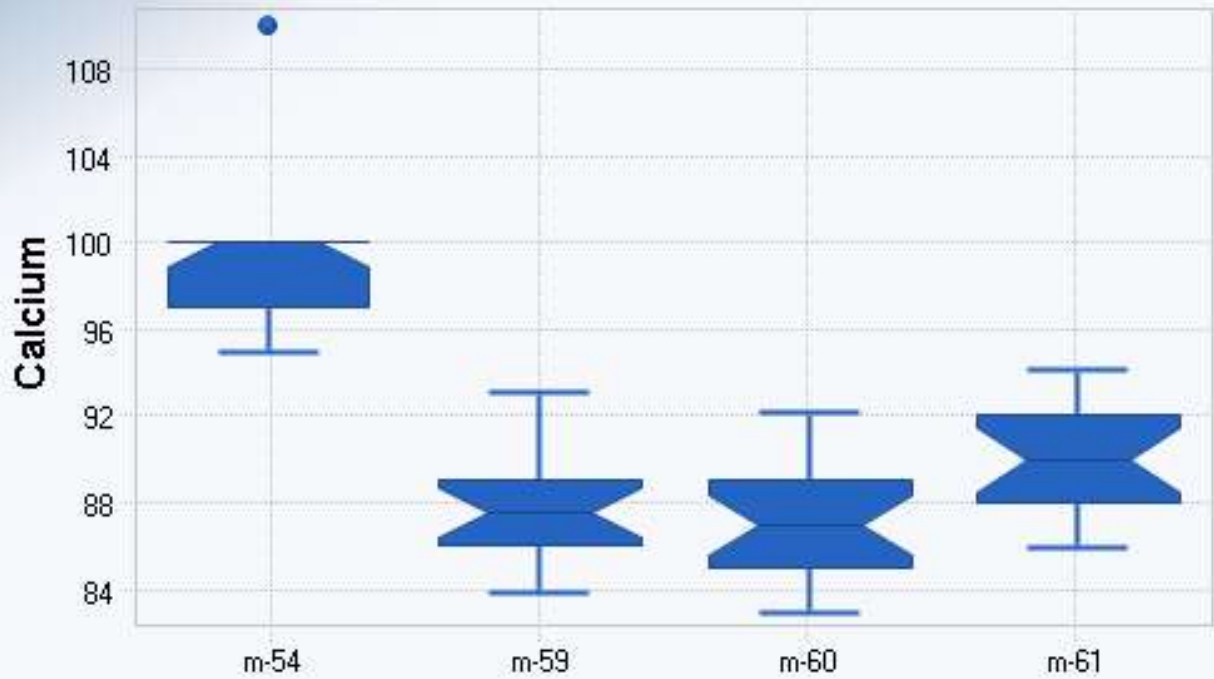
APPENDIX B

PROUCL EDA OUTPUT FILES

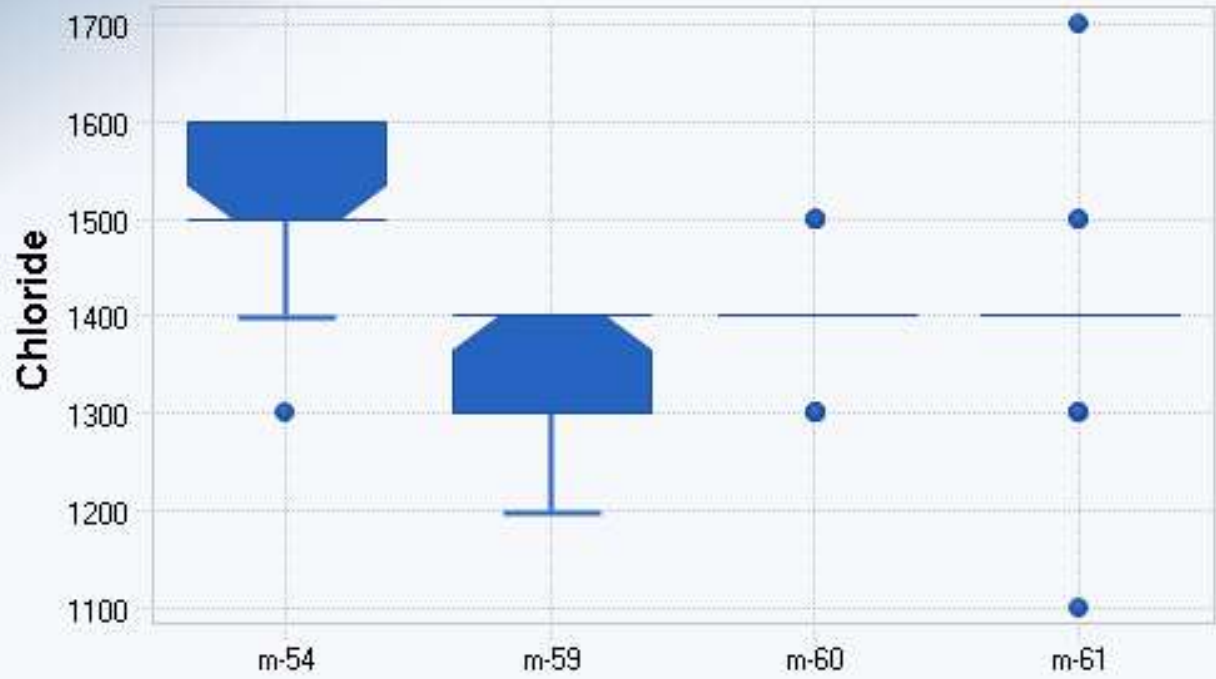
Box Plot for Boron



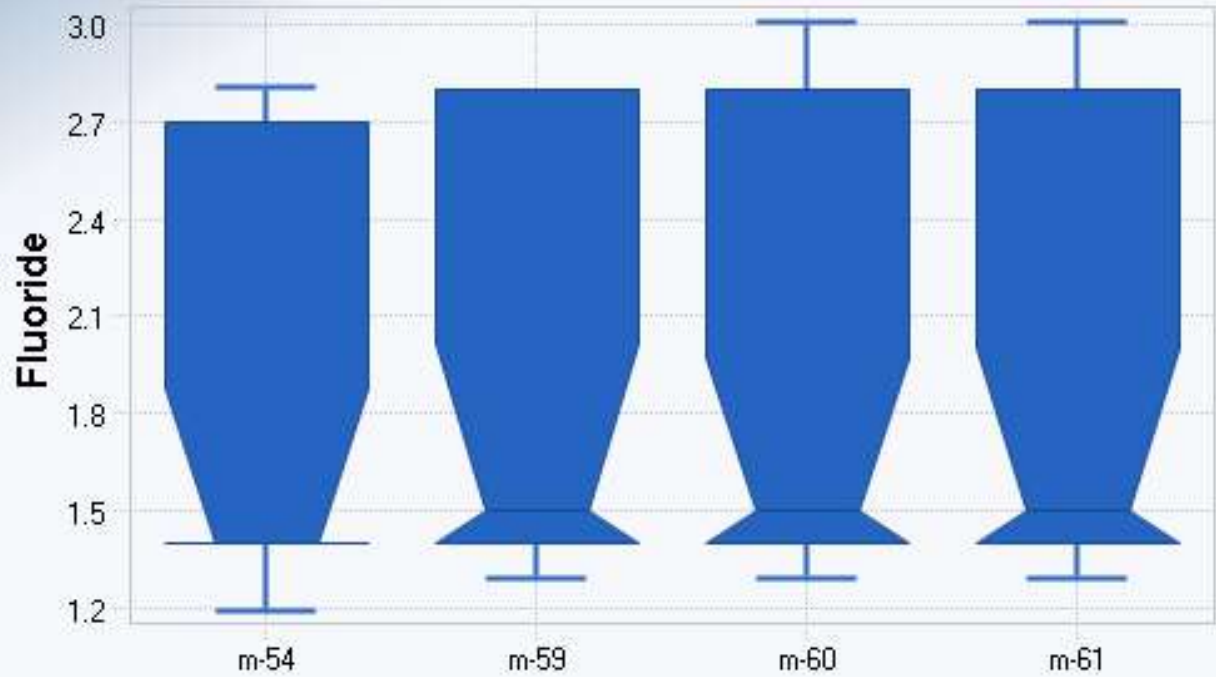
Box Plot for Calcium



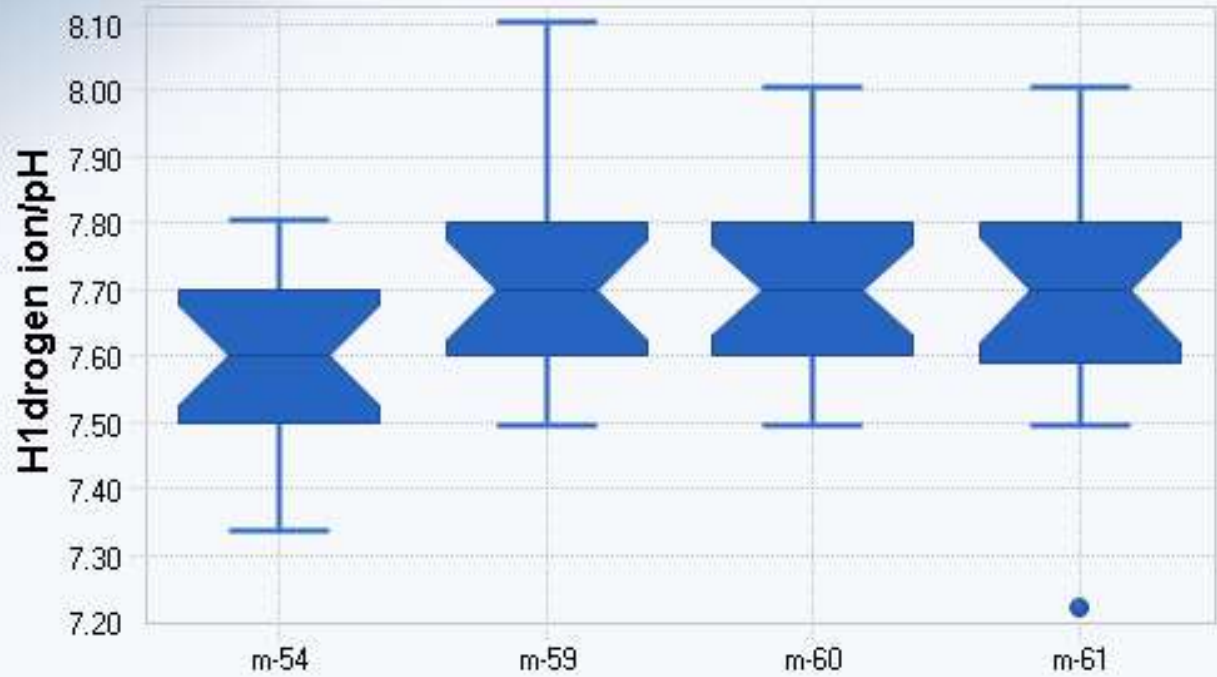
Box Plot for Chloride



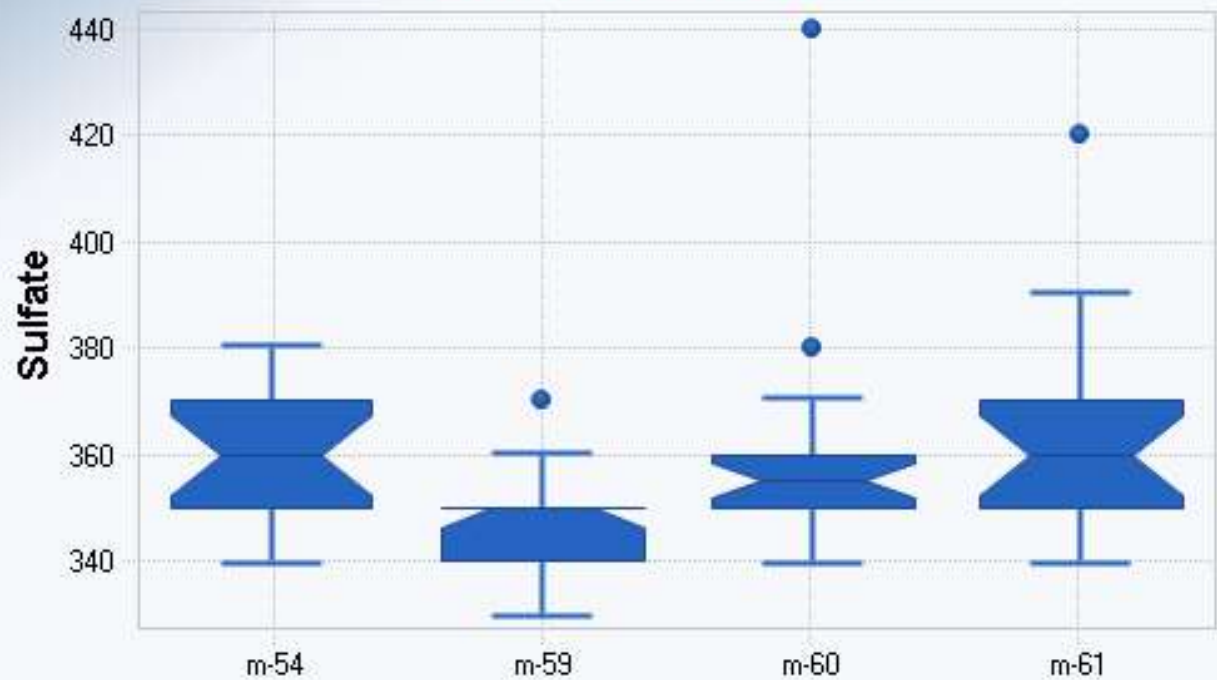
Box Plot for Fluoride



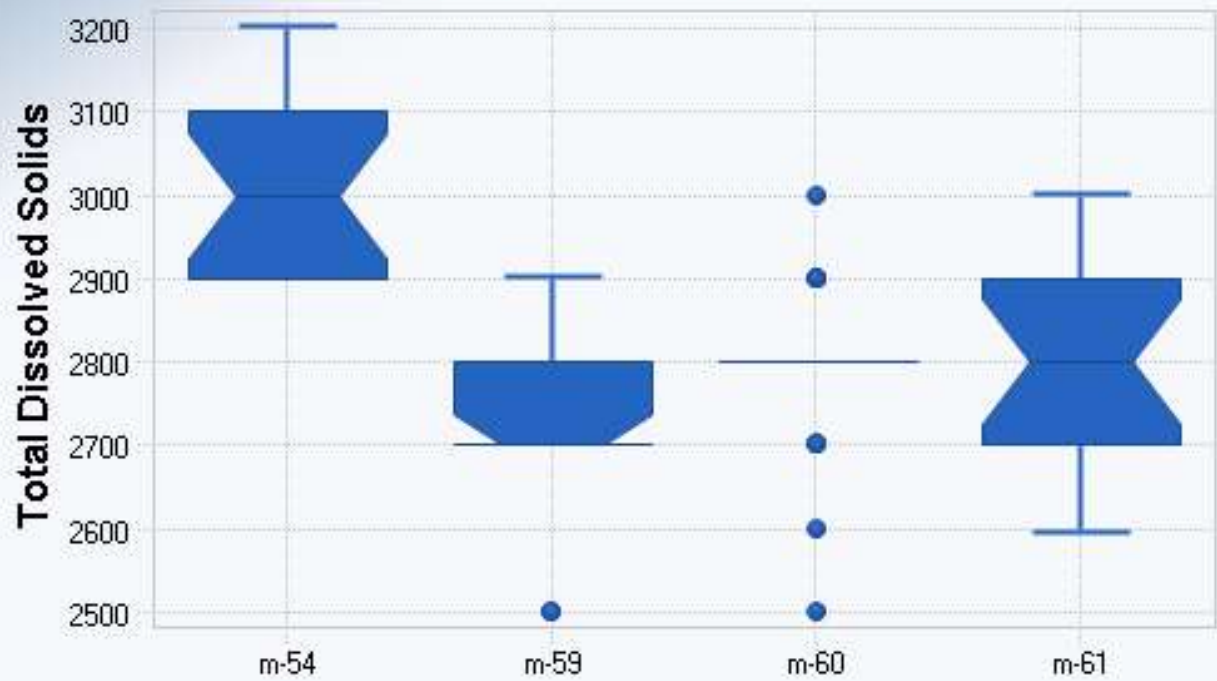
Box Plot for H1drogen ion/pH



Box Plot for Sulfate



Box Plot for Total Dissolved Solids



	A	B	C	D	E	F	G	H	I	J	K	L
1				Goodness-of-Fit Test Statistics for Data Sets with Non-Detects								
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.14/1/2020 1:23:01 PM								
4	From File			20200330APS_BAM_DetMon_Oct2019_NoDups.xls								
5	Full Precision			OFF								
6	Confidence Coefficient			0.95								
7												
8												
9	Boron (m-54)											
10												
11	Raw Statistics											
12	Number of Valid Observations					18						
13	Number of Distinct Observations					7						
14	Minimum					0.49						
15	Maximum					0.56						
16	Mean of Raw Data					0.519						
17	Standard Deviation of Raw Data					0.0178						
18	Khat					912.5						
19	Theta hat					5.6866E-4						
20	Kstar					760.4						
21	Theta star					6.8235E-4						
22	Mean of Log Transformed Data					-0.657						
23	Standard Deviation of Log Transformed Data					0.034						
24												
25	Normal GOF Test Results											
26												
27	Correlation Coefficient R					0.968						
28	Shapiro Wilk Test Statistic					0.94						
29	Shapiro Wilk Critical (0.05) Value					0.897						
30	Approximate Shapiro Wilk P Value					0.289						
31	Lilliefors Test Statistic					0.155						
32	Lilliefors Critical (0.05) Value					0.202						
33	Data appear Normal at (0.05) Significance Level											
34												
35	Gamma GOF Test Results											
36												
37	Correlation Coefficient R					0.971						
38	A-D Test Statistic					0.451						
39	A-D Critical (0.05) Value					0.737						
40	K-S Test Statistic					0.146						
41	K-S Critical(0.05) Value					0.203						
42	Data appear Gamma Distributed at (0.05) Significance Level											
43												
44	Lognormal GOF Test Results											
45												
46	Correlation Coefficient R					0.971						
47	Shapiro Wilk Test Statistic					0.946						
48	Shapiro Wilk Critical (0.05) Value					0.897						
49	Approximate Shapiro Wilk P Value					0.365						
50	Lilliefors Test Statistic					0.15						

	A	B	C	D	E	F	G	H	I	J	K	L
51	Lilliefors Critical (0.05) Value					0.202						
52	Data appear Lognormal at (0.05) Significance Level											
53												
54	Boron (m-59)											
55												
56	Raw Statistics											
57	Number of Valid Observations					18						
58	Number of Distinct Observations					6						
59	Minimum					0.48						
60	Maximum					0.53						
61	Mean of Raw Data					0.496						
62	Standard Deviation of Raw Data					0.0138						
63	Khat					1393						
64	Theta hat					3.5616E-4						
65	Kstar					1161						
66	Theta star					4.2738E-4						
67	Mean of Log Transformed Data					-0.701						
68	Standard Deviation of Log Transformed Data					0.0275						
69												
70	Normal GOF Test Results											
71												
72	Correlation Coefficient R					0.941						
73	Shapiro Wilk Test Statistic					0.885						
74	Shapiro Wilk Critical (0.05) Value					0.897						
75	Approximate Shapiro Wilk P Value					0.0308						
76	Lilliefors Test Statistic					0.222						
77	Lilliefors Critical (0.05) Value					0.202						
78	Data not Normal at (0.05) Significance Level											
79												
80	Gamma GOF Test Results											
81												
82	Correlation Coefficient R					0.944						
83	A-D Test Statistic					0.778						
84	A-D Critical (0.05) Value					0.737						
85	K-S Test Statistic					0.215						
86	K-S Critical(0.05) Value					0.203						
87	Data not Gamma Distributed at (0.05) Significance Level											
88												
89	Lognormal GOF Test Results											
90												
91	Correlation Coefficient R					0.944						
92	Shapiro Wilk Test Statistic					0.89						
93	Shapiro Wilk Critical (0.05) Value					0.897						
94	Approximate Shapiro Wilk P Value					0.0385						
95	Lilliefors Test Statistic					0.216						
96	Lilliefors Critical (0.05) Value					0.202						
97	Data not Lognormal at (0.05) Significance Level											
98												
99	Non-parametric GOF Test Results											
100												

	A	B	C	D	E	F	G	H	I	J	K	L
101	Data do not follow a discernible distribution at (0.05) Level of Significance											
102												
103	Boron (m-60)											
104												
105	Raw Statistics											
106	Number of Valid Observations					18						
107	Number of Distinct Observations					9						
108	Minimum					0.475						
109	Maximum					0.54						
110	Mean of Raw Data					0.511						
111	Standard Deviation of Raw Data					0.0164						
112	Khat					1022						
113	Theta hat					5.0015E-4						
114	Kstar					851.6						
115	Theta star					6.0015E-4						
116	Mean of Log Transformed Data					-0.672						
117	Standard Deviation of Log Transformed Data					0.0322						
118												
119	Normal GOF Test Results											
120												
121	Correlation Coefficient R					0.98						
122	Shapiro Wilk Test Statistic					0.962						
123	Shapiro Wilk Critical (0.05) Value					0.897						
124	Approximate Shapiro Wilk P Value					0.64						
125	Lilliefors Test Statistic					0.138						
126	Lilliefors Critical (0.05) Value					0.202						
127	Data appear Normal at (0.05) Significance Level											
128												
129	Gamma GOF Test Results											
130												
131	Correlation Coefficient R					0.979						
132	A-D Test Statistic					0.359						
133	A-D Critical (0.05) Value					0.737						
134	K-S Test Statistic					0.135						
135	K-S Critical(0.05) Value					0.203						
136	Data appear Gamma Distributed at (0.05) Significance Level											
137												
138	Lognormal GOF Test Results											
139												
140	Correlation Coefficient R					0.978						
141	Shapiro Wilk Test Statistic					0.96						
142	Shapiro Wilk Critical (0.05) Value					0.897						
143	Approximate Shapiro Wilk P Value					0.599						
144	Lilliefors Test Statistic					0.141						
145	Lilliefors Critical (0.05) Value					0.202						
146	Data appear Lognormal at (0.05) Significance Level											
147												
148	Boron (m-61)											
149												
150	Raw Statistics											

	A	B	C	D	E	F	G	H	I	J	K	L
151	Number of Valid Observations					18						
152	Number of Distinct Observations					5						
153	Minimum					0.48						
154	Maximum					0.52						
155	Mean of Raw Data					0.498						
156	Standard Deviation of Raw Data					0.012						
157	Khat					1827						
158	Theta hat					2.7280E-4						
159	Kstar					1522						
160	Theta star					3.2735E-4						
161	Mean of Log Transformed Data					-0.697						
162	Standard Deviation of Log Transformed Data					0.0241						
163												
164	Normal GOF Test Results											
165												
166	Correlation Coefficient R					0.955						
167	Shapiro Wilk Test Statistic					0.904						
168	Shapiro Wilk Critical (0.05) Value					0.897						
169	Approximate Shapiro Wilk P Value					0.072						
170	Lilliefors Test Statistic					0.223						
171	Lilliefors Critical (0.05) Value					0.202						
172	Data appear Approximate Normal at (0.05) Significance Level											
173												
174	Gamma GOF Test Results											
175												
176	Correlation Coefficient R					0.955						
177	A-D Test Statistic					0.813						
178	A-D Critical (0.05) Value					0.737						
179	K-S Test Statistic					0.227						
180	K-S Critical(0.05) Value					0.203						
181	Data not Gamma Distributed at (0.05) Significance Level											
182												
183	Lognormal GOF Test Results											
184												
185	Correlation Coefficient R					0.955						
186	Shapiro Wilk Test Statistic					0.904						
187	Shapiro Wilk Critical (0.05) Value					0.897						
188	Approximate Shapiro Wilk P Value					0.073						
189	Lilliefors Test Statistic					0.226						
190	Lilliefors Critical (0.05) Value					0.202						
191	Data appear Approximate_Lognormal at (0.05) Significance Level											
192												
193	Calcium (m-54)											
194												
195	Raw Statistics											
196	Number of Valid Observations					18						
197	Number of Distinct Observations					7						
198	Minimum					95						
199	Maximum					110						
200	Mean of Raw Data					99.22						

	A	B	C	D	E	F	G	H	I	J	K	L
201	Standard Deviation of Raw Data					3.246						
202	Khat					1026						
203	Theta hat					0.0967						
204	Kstar					855.1						
205	Theta star					0.116						
206	Mean of Log Transformed Data					4.597						
207	Standard Deviation of Log Transformed Data					0.0318						
208												
209	Normal GOF Test Results											
210												
211	Correlation Coefficient R					0.838						
212	Shapiro Wilk Test Statistic					0.73						
213	Shapiro Wilk Critical (0.05) Value					0.897						
214	Approximate Shapiro Wilk P Value					7.0934E-5						
215	Lilliefors Test Statistic					0.35						
216	Lilliefors Critical (0.05) Value					0.202						
217	Data not Normal at (0.05) Significance Level											
218												
219	Gamma GOF Test Results											
220												
221	Correlation Coefficient R					0.845						
222	A-D Test Statistic					1.628						
223	A-D Critical (0.05) Value					0.737						
224	K-S Test Statistic					0.342						
225	K-S Critical(0.05) Value					0.203						
226	Data not Gamma Distributed at (0.05) Significance Level											
227												
228	Lognormal GOF Test Results											
229												
230	Correlation Coefficient R					0.849						
231	Shapiro Wilk Test Statistic					0.747						
232	Shapiro Wilk Critical (0.05) Value					0.897						
233	Approximate Shapiro Wilk P Value					1.2992E-4						
234	Lilliefors Test Statistic					0.342						
235	Lilliefors Critical (0.05) Value					0.202						
236	Data not Lognormal at (0.05) Significance Level											
237												
238	Non-parametric GOF Test Results											
239												
240	Data do not follow a discernible distribution at (0.05) Level of Significance											
241												
242	Calcium (m-59)											
243												
244	Raw Statistics											
245	Number of Valid Observations					18						
246	Number of Distinct Observations					9						
247	Minimum					84						
248	Maximum					93						
249	Mean of Raw Data					87.56						
250	Standard Deviation of Raw Data					2.595						

	A	B	C	D	E	F	G	H	I	J	K	L
251	Khat					1217						
252	Theta hat					0.072						
253	Kstar					1014						
254	Theta star					0.0864						
255	Mean of Log Transformed Data					4.472						
256	Standard Deviation of Log Transformed Data					0.0294						
257												
258	Normal GOF Test Results											
259												
260	Correlation Coefficient R					0.977						
261	Shapiro Wilk Test Statistic					0.947						
262	Shapiro Wilk Critical (0.05) Value					0.897						
263	Approximate Shapiro Wilk P Value					0.407						
264	Lilliefors Test Statistic					0.17						
265	Lilliefors Critical (0.05) Value					0.202						
266	Data appear Normal at (0.05) Significance Level											
267												
268	Gamma GOF Test Results											
269												
270	Correlation Coefficient R					0.978						
271	A-D Test Statistic					0.359						
272	A-D Critical (0.05) Value					0.737						
273	K-S Test Statistic					0.175						
274	K-S Critical(0.05) Value					0.203						
275	Data appear Gamma Distributed at (0.05) Significance Level											
276												
277	Lognormal GOF Test Results											
278												
279	Correlation Coefficient R					0.979						
280	Shapiro Wilk Test Statistic					0.95						
281	Shapiro Wilk Critical (0.05) Value					0.897						
282	Approximate Shapiro Wilk P Value					0.458						
283	Lilliefors Test Statistic					0.168						
284	Lilliefors Critical (0.05) Value					0.202						
285	Data appear Lognormal at (0.05) Significance Level											
286												
287	Calcium (m-60)											
288												
289	Raw Statistics											
290	Number of Valid Observations					18						
291	Number of Distinct Observations					12						
292	Minimum					83						
293	Maximum					92						
294	Mean of Raw Data					87.28						
295	Standard Deviation of Raw Data					2.533						
296	Khat					1258						
297	Theta hat					0.0694						
298	Kstar					1048						
299	Theta star					0.0832						
300	Mean of Log Transformed Data					4.469						

	A	B	C	D	E	F	G	H	I	J	K	L
301	Standard Deviation of Log Transformed Data					0.029						
302												
303	Normal GOF Test Results											
304												
305	Correlation Coefficient R					0.992						
306	Shapiro Wilk Test Statistic					0.975						
307	Shapiro Wilk Critical (0.05) Value					0.897						
308	Approximate Shapiro Wilk P Value					0.904						
309	Lilliefors Test Statistic					0.137						
310	Lilliefors Critical (0.05) Value					0.202						
311	Data appear Normal at (0.05) Significance Level											
312												
313	Gamma GOF Test Results											
314												
315	Correlation Coefficient R					0.991						
316	A-D Test Statistic					0.223						
317	A-D Critical (0.05) Value					0.737						
318	K-S Test Statistic					0.141						
319	K-S Critical(0.05) Value					0.203						
320	Data appear Gamma Distributed at (0.05) Significance Level											
321												
322	Lognormal GOF Test Results											
323												
324	Correlation Coefficient R					0.992						
325	Shapiro Wilk Test Statistic					0.976						
326	Shapiro Wilk Critical (0.05) Value					0.897						
327	Approximate Shapiro Wilk P Value					0.91						
328	Lilliefors Test Statistic					0.134						
329	Lilliefors Critical (0.05) Value					0.202						
330	Data appear Lognormal at (0.05) Significance Level											
331												
332	Calcium (m-61)											
333												
334	Raw Statistics											
335	Number of Valid Observations					18						
336	Number of Distinct Observations					9						
337	Minimum					86						
338	Maximum					94						
339	Mean of Raw Data					89.89						
340	Standard Deviation of Raw Data					2.246						
341	Khat					1695						
342	Theta hat					0.053						
343	Kstar					1413						
344	Theta star					0.0636						
345	Mean of Log Transformed Data					4.498						
346	Standard Deviation of Log Transformed Data					0.025						
347												
348	Normal GOF Test Results											
349												
350	Correlation Coefficient R					0.987						

	A	B	C	D	E	F	G	H	I	J	K	L
351	Shapiro Wilk Test Statistic					0.967						
352	Shapiro Wilk Critical (0.05) Value					0.897						
353	Approximate Shapiro Wilk P Value					0.776						
354	Lilliefors Test Statistic					0.133						
355	Lilliefors Critical (0.05) Value					0.202						
356	Data appear Normal at (0.05) Significance Level											
357												
358	Gamma GOF Test Results											
359												
360	Correlation Coefficient R					0.987						
361	A-D Test Statistic					0.309						
362	A-D Critical (0.05) Value					0.737						
363	K-S Test Statistic					0.14						
364	K-S Critical(0.05) Value					0.203						
365	Data appear Gamma Distributed at (0.05) Significance Level											
366												
367	Lognormal GOF Test Results											
368												
369	Correlation Coefficient R					0.987						
370	Shapiro Wilk Test Statistic					0.967						
371	Shapiro Wilk Critical (0.05) Value					0.897						
372	Approximate Shapiro Wilk P Value					0.772						
373	Lilliefors Test Statistic					0.136						
374	Lilliefors Critical (0.05) Value					0.202						
375	Data appear Lognormal at (0.05) Significance Level											
376												
377	Chloride (m-54)											
378												
379	Raw Statistics											
380	Number of Valid Observations					18						
381	Number of Distinct Observations					4						
382	Minimum					1300						
383	Maximum					1600						
384	Mean of Raw Data					1506						
385	Standard Deviation of Raw Data					80.24						
386	Khat					361.1						
387	Theta hat					4.17						
388	Kstar					300.9						
389	Theta star					5.003						
390	Mean of Log Transformed Data					7.316						
391	Standard Deviation of Log Transformed Data					0.0546						
392												
393	Normal GOF Test Results											
394												
395	Correlation Coefficient R					0.9						
396	Shapiro Wilk Test Statistic					0.816						
397	Shapiro Wilk Critical (0.05) Value					0.897						
398	Approximate Shapiro Wilk P Value					0.00187						
399	Lilliefors Test Statistic					0.306						
400	Lilliefors Critical (0.05) Value					0.202						

	A	B	C	D	E	F	G	H	I	J	K	L
401	Data not Normal at (0.05) Significance Level											
402												
403	Gamma GOF Test Results											
404												
405	Correlation Coefficient R					0.897						
406	A-D Test Statistic					1.566						
407	A-D Critical (0.05) Value					0.737						
408	K-S Test Statistic					0.312						
409	K-S Critical(0.05) Value					0.203						
410	Data not Gamma Distributed at (0.05) Significance Level											
411												
412	Lognormal GOF Test Results											
413												
414	Correlation Coefficient R					0.894						
415	Shapiro Wilk Test Statistic					0.807						
416	Shapiro Wilk Critical (0.05) Value					0.897						
417	Approximate Shapiro Wilk P Value					0.0013						
418	Lilliefors Test Statistic					0.316						
419	Lilliefors Critical (0.05) Value					0.202						
420	Data not Lognormal at (0.05) Significance Level											
421												
422	Non-parametric GOF Test Results											
423												
424	Data do not follow a discernible distribution at (0.05) Level of Significance											
425												
426	Chloride (m-59)											
427												
428	Raw Statistics											
429	Number of Valid Observations					18						
430	Number of Distinct Observations					3						
431	Minimum					1200						
432	Maximum					1400						
433	Mean of Raw Data					1344						
434	Standard Deviation of Raw Data					70.48						
435	Khat					373.5						
436	Theta hat					3.599						
437	Kstar					311.3						
438	Theta star					4.319						
439	Mean of Log Transformed Data					7.202						
440	Standard Deviation of Log Transformed Data					0.0537						
441												
442	Normal GOF Test Results											
443												
444	Correlation Coefficient R					0.866						
445	Shapiro Wilk Test Statistic					0.739						
446	Shapiro Wilk Critical (0.05) Value					0.897						
447	Approximate Shapiro Wilk P Value					1.3180E-4						
448	Lilliefors Test Statistic					0.34						
449	Lilliefors Critical (0.05) Value					0.202						
450	Data not Normal at (0.05) Significance Level											

	A	B	C	D	E	F	G	H	I	J	K	L
451												
452	Gamma GOF Test Results											
453												
454	Correlation Coefficient R					0.857						
455	A-D Test Statistic					2.145						
456	A-D Critical (0.05) Value					0.737						
457	K-S Test Statistic					0.345						
458	K-S Critical(0.05) Value					0.203						
459	Data not Gamma Distributed at (0.05) Significance Level											
460												
461	Lognormal GOF Test Results											
462												
463	Correlation Coefficient R					0.864						
464	Shapiro Wilk Test Statistic					0.736						
465	Shapiro Wilk Critical (0.05) Value					0.897						
466	Approximate Shapiro Wilk P Value					1.2058E-4						
467	Lilliefors Test Statistic					0.338						
468	Lilliefors Critical (0.05) Value					0.202						
469	Data not Lognormal at (0.05) Significance Level											
470												
471	Non-parametric GOF Test Results											
472												
473	Data do not follow a discernible distribution at (0.05) Level of Significance											
474												
475	Chloride (m-60)											
476												
477	Raw Statistics											
478	Number of Valid Observations					18						
479	Number of Distinct Observations					5						
480	Minimum					1300						
481	Maximum					1500						
482	Mean of Raw Data					1383						
483	Standard Deviation of Raw Data					54.23						
484	Khat					684.9						
485	Theta hat					2.02						
486	Kstar					570.8						
487	Theta star					2.424						
488	Mean of Log Transformed Data					7.232						
489	Standard Deviation of Log Transformed Data					0.0394						
490												
491	Normal GOF Test Results											
492												
493	Correlation Coefficient R					0.893						
494	Shapiro Wilk Test Statistic					0.802						
495	Shapiro Wilk Critical (0.05) Value					0.897						
496	Approximate Shapiro Wilk P Value					0.0011						
497	Lilliefors Test Statistic					0.343						
498	Lilliefors Critical (0.05) Value					0.202						
499	Data not Normal at (0.05) Significance Level											
500												

	A	B	C	D	E	F	G	H	I	J	K	L
501	Gamma GOF Test Results											
502												
503	Correlation Coefficient R					0.893						
504	A-D Test Statistic					1.981						
505	A-D Critical (0.05) Value					0.737						
506	K-S Test Statistic					0.35						
507	K-S Critical(0.05) Value					0.203						
508	Data not Gamma Distributed at (0.05) Significance Level											
509												
510	Lognormal GOF Test Results											
511												
512	Correlation Coefficient R					0.892						
513	Shapiro Wilk Test Statistic					0.799						
514	Shapiro Wilk Critical (0.05) Value					0.897						
515	Approximate Shapiro Wilk P Value					9.8721E-4						
516	Lilliefors Test Statistic					0.349						
517	Lilliefors Critical (0.05) Value					0.202						
518	Data not Lognormal at (0.05) Significance Level											
519												
520	Non-parametric GOF Test Results											
521												
522	Data do not follow a discernible distribution at (0.05) Level of Significance											
523												
524	Chloride (m-61)											
525												
526	Raw Statistics											
527	Number of Valid Observations					18						
528	Number of Distinct Observations					5						
529	Minimum					1100						
530	Maximum					1700						
531	Mean of Raw Data					1394						
532	Standard Deviation of Raw Data					116.2						
533	Khat					150.7						
534	Theta hat					9.251						
535	Kstar					125.6						
536	Theta star					11.1						
537	Mean of Log Transformed Data					7.237						
538	Standard Deviation of Log Transformed Data					0.0843						
539												
540	Normal GOF Test Results											
541												
542	Correlation Coefficient R					0.875						
543	Shapiro Wilk Test Statistic					0.804						
544	Shapiro Wilk Critical (0.05) Value					0.897						
545	Approximate Shapiro Wilk P Value					8.9210E-4						
546	Lilliefors Test Statistic					0.314						
547	Lilliefors Critical (0.05) Value					0.202						
548	Data not Normal at (0.05) Significance Level											
549												
550	Gamma GOF Test Results											

	A	B	C	D	E	F	G	H	I	J	K	L
551												
552	Correlation Coefficient R					0.881						
553	A-D Test Statistic					1.813						
554	A-D Critical (0.05) Value					0.737						
555	K-S Test Statistic					0.308						
556	K-S Critical(0.05) Value					0.203						
557	Data not Gamma Distributed at (0.05) Significance Level											
558												
559	Lognormal GOF Test Results											
560												
561	Correlation Coefficient R					0.872						
562	Shapiro Wilk Test Statistic					0.799						
563	Shapiro Wilk Critical (0.05) Value					0.897						
564	Approximate Shapiro Wilk P Value					7.3739E-4						
565	Lilliefors Test Statistic					0.312						
566	Lilliefors Critical (0.05) Value					0.202						
567	Data not Lognormal at (0.05) Significance Level											
568												
569	Non-parametric GOF Test Results											
570												
571	Data do not follow a discernible distribution at (0.05) Level of Significance											
572												
573	Fluoride (m-54)											
574												
575	Raw Statistics											
576	Number of Valid Observations					18						
577	Number of Distinct Observations					5						
578	Minimum					1.2						
579	Maximum					1.4						
580	Mean of Raw Data					1.353						
581	Standard Deviation of Raw Data					0.0606						
582	Khat					509.9						
583	Theta hat					0.00265						
584	Kstar					425						
585	Theta star					0.00318						
586	Mean of Log Transformed Data					0.301						
587	Standard Deviation of Log Transformed Data					0.046						
588												
589	Normal GOF Test Results											
590												
591	Correlation Coefficient R					0.89						
592	Shapiro Wilk Test Statistic					0.788						
593	Shapiro Wilk Critical (0.05) Value					0.897						
594	Approximate Shapiro Wilk P Value					7.2243E-4						
595	Lilliefors Test Statistic					0.282						
596	Lilliefors Critical (0.05) Value					0.202						
597	Data not Normal at (0.05) Significance Level											
598												
599	Gamma GOF Test Results											
600												

	A	B	C	D	E	F	G	H	I	J	K	L
601	Correlation Coefficient R					0.882						
602	A-D Test Statistic					1.572						
603	A-D Critical (0.05) Value					0.737						
604	K-S Test Statistic					0.286						
605	K-S Critical(0.05) Value					0.203						
606	Data not Gamma Distributed at (0.05) Significance Level											
607												
608	Lognormal GOF Test Results											
609												
610	Correlation Coefficient R					0.886						
611	Shapiro Wilk Test Statistic					0.782						
612	Shapiro Wilk Critical (0.05) Value					0.897						
613	Approximate Shapiro Wilk P Value					5.7666E-4						
614	Lilliefors Test Statistic					0.279						
615	Lilliefors Critical (0.05) Value					0.202						
616	Data not Lognormal at (0.05) Significance Level											
617												
618	Non-parametric GOF Test Results											
619												
620	Data do not follow a discernible distribution at (0.05) Level of Significance											
621												
622	Fluoride (m-59)											
623												
624	Raw Statistics											
625	Number of Valid Observations					18						
626	Number of Distinct Observations					4						
627	Minimum					1.3						
628	Maximum					1.5						
629	Mean of Raw Data					1.383						
630	Standard Deviation of Raw Data					0.0618						
631	Khat					530.1						
632	Theta hat					0.00261						
633	Kstar					441.8						
634	Theta star					0.00313						
635	Mean of Log Transformed Data					0.324						
636	Standard Deviation of Log Transformed Data					0.0447						
637												
638	Normal GOF Test Results											
639												
640	Correlation Coefficient R					0.883						
641	Shapiro Wilk Test Statistic					0.775						
642	Shapiro Wilk Critical (0.05) Value					0.897						
643	Approximate Shapiro Wilk P Value					4.3686E-4						
644	Lilliefors Test Statistic					0.328						
645	Lilliefors Critical (0.05) Value					0.202						
646	Data not Normal at (0.05) Significance Level											
647												
648	Gamma GOF Test Results											
649												
650	Correlation Coefficient R					0.883						

	A	B	C	D	E	F	G	H	I	J	K	L
651	A-D Test Statistic					2.108						
652	A-D Critical (0.05) Value					0.737						
653	K-S Test Statistic					0.337						
654	K-S Critical(0.05) Value					0.203						
655	Data not Gamma Distributed at (0.05) Significance Level											
656												
657	Lognormal GOF Test Results											
658												
659	Correlation Coefficient R					0.882						
660	Shapiro Wilk Test Statistic					0.774						
661	Shapiro Wilk Critical (0.05) Value					0.897						
662	Approximate Shapiro Wilk P Value					4.2528E-4						
663	Lilliefors Test Statistic					0.336						
664	Lilliefors Critical (0.05) Value					0.202						
665	Data not Lognormal at (0.05) Significance Level											
666												
667	Non-parametric GOF Test Results											
668												
669	Data do not follow a discernible distribution at (0.05) Level of Significance											
670												
671	Fluoride (m-60)											
672												
673	Raw Statistics											
674	Number of Valid Observations					18						
675	Number of Distinct Observations					4						
676	Minimum					1.3						
677	Maximum					1.5						
678	Mean of Raw Data					1.439						
679	Standard Deviation of Raw Data					0.0557						
680	Khat					694.2						
681	Theta hat					0.00207						
682	Kstar					578.6						
683	Theta star					0.00249						
684	Mean of Log Transformed Data					0.363						
685	Standard Deviation of Log Transformed Data					0.0392						
686												
687	Normal GOF Test Results											
688												
689	Correlation Coefficient R					0.917						
690	Shapiro Wilk Test Statistic					0.84						
691	Shapiro Wilk Critical (0.05) Value					0.897						
692	Approximate Shapiro Wilk P Value					0.00531						
693	Lilliefors Test Statistic					0.202						
694	Lilliefors Critical (0.05) Value					0.202						
695	Data not Normal at (0.05) Significance Level											
696												
697	Gamma GOF Test Results											
698												
699	Correlation Coefficient R					0.914						
700	A-D Test Statistic					1.161						

	A	B	C	D	E	F	G	H	I	J	K	L
701	A-D Critical (0.05) Value					0.737						
702	K-S Test Statistic					0.204						
703	K-S Critical(0.05) Value					0.203						
704	Data not Gamma Distributed at (0.05) Significance Level											
705												
706	Lognormal GOF Test Results											
707												
708	Correlation Coefficient R					0.914						
709	Shapiro Wilk Test Statistic					0.835						
710	Shapiro Wilk Critical (0.05) Value					0.897						
711	Approximate Shapiro Wilk P Value					0.00436						
712	Lilliefors Test Statistic					0.196						
713	Lilliefors Critical (0.05) Value					0.202						
714	Data appear Approximate_Lognormal at (0.05) Significance Level											
715												
716	Fluoride (m-61)											
717												
718	Raw Statistics											
719	Number of Valid Observations					18						
720	Number of Distinct Observations					5						
721	Minimum					1.3						
722	Maximum					1.5						
723	Mean of Raw Data					1.422						
724	Standard Deviation of Raw Data					0.06						
725	Khat					593.6						
726	Theta hat					0.0024						
727	Kstar					494.7						
728	Theta star					0.00288						
729	Mean of Log Transformed Data					0.351						
730	Standard Deviation of Log Transformed Data					0.0423						
731												
732	Normal GOF Test Results											
733												
734	Correlation Coefficient R					0.939						
735	Shapiro Wilk Test Statistic					0.874						
736	Shapiro Wilk Critical (0.05) Value					0.897						
737	Approximate Shapiro Wilk P Value					0.0218						
738	Lilliefors Test Statistic					0.256						
739	Lilliefors Critical (0.05) Value					0.202						
740	Data not Normal at (0.05) Significance Level											
741												
742	Gamma GOF Test Results											
743												
744	Correlation Coefficient R					0.937						
745	A-D Test Statistic					1.075						
746	A-D Critical (0.05) Value					0.737						
747	K-S Test Statistic					0.255						
748	K-S Critical(0.05) Value					0.203						
749	Data not Gamma Distributed at (0.05) Significance Level											
750												

	A	B	C	D	E	F	G	H	I	J	K	L
751	Lognormal GOF Test Results											
752												
753	Correlation Coefficient R					0.939						
754	Shapiro Wilk Test Statistic					0.876						
755	Shapiro Wilk Critical (0.05) Value					0.897						
756	Approximate Shapiro Wilk P Value					0.0231						
757	Lilliefors Test Statistic					0.249						
758	Lilliefors Critical (0.05) Value					0.202						
759	Data not Lognormal at (0.05) Significance Level											
760												
761	Non-parametric GOF Test Results											
762												
763	Data do not follow a discernible distribution at (0.05) Level of Significance											
764												
765	pH (m-54)											
766												
767	Raw Statistics											
768	Number of Valid Observations					17						
769	Number of Missing Observations					1						
770	Number of Distinct Observations					7						
771	Minimum					7.34						
772	Maximum					7.8						
773	Mean of Raw Data					7.571						
774	Standard Deviation of Raw Data					0.136						
775	Khat					3303						
776	Theta hat					0.00229						
777	Kstar					2720						
778	Theta star					0.00278						
779	Mean of Log Transformed Data					2.024						
780	Standard Deviation of Log Transformed Data					0.0179						
781												
782	Normal GOF Test Results											
783												
784	Correlation Coefficient R					0.971						
785	Shapiro Wilk Test Statistic					0.932						
786	Shapiro Wilk Critical (0.05) Value					0.892						
787	Approximate Shapiro Wilk P Value					0.275						
788	Lilliefors Test Statistic					0.183						
789	Lilliefors Critical (0.05) Value					0.207						
790	Data appear Normal at (0.05) Significance Level											
791												
792	Gamma GOF Test Results											
793												
794	Correlation Coefficient R					0.969						
795	A-D Test Statistic					0.569						
796	A-D Critical (0.05) Value					0.736						
797	K-S Test Statistic					0.19						
798	K-S Critical(0.05) Value					0.208						
799	Data appear Gamma Distributed at (0.05) Significance Level											
800												

	A	B	C	D	E	F	G	H	I	J	K	L
801	Lognormal GOF Test Results											
802												
803	Correlation Coefficient R					0.97						
804	Shapiro Wilk Test Statistic					0.931						
805	Shapiro Wilk Critical (0.05) Value					0.892						
806	Approximate Shapiro Wilk P Value					0.27						
807	Lilliefors Test Statistic					0.183						
808	Lilliefors Critical (0.05) Value					0.207						
809	Data appear Lognormal at (0.05) Significance Level											
810												
811	pH (m-59)											
812												
813	Raw Statistics											
814	Number of Valid Observations					17						
815	Number of Missing Observations					1						
816	Number of Distinct Observations					8						
817	Minimum					7.5						
818	Maximum					8.1						
819	Mean of Raw Data					7.694						
820	Standard Deviation of Raw Data					0.159						
821	Khat					2512						
822	Theta hat					0.00306						
823	Kstar					2069						
824	Theta star					0.00372						
825	Mean of Log Transformed Data					2.04						
826	Standard Deviation of Log Transformed Data					0.0205						
827												
828	Normal GOF Test Results											
829												
830	Correlation Coefficient R					0.952						
831	Shapiro Wilk Test Statistic					0.909						
832	Shapiro Wilk Critical (0.05) Value					0.892						
833	Approximate Shapiro Wilk P Value					0.0966						
834	Lilliefors Test Statistic					0.193						
835	Lilliefors Critical (0.05) Value					0.207						
836	Data appear Normal at (0.05) Significance Level											
837												
838	Gamma GOF Test Results											
839												
840	Correlation Coefficient R					0.955						
841	A-D Test Statistic					0.558						
842	A-D Critical (0.05) Value					0.736						
843	K-S Test Statistic					0.204						
844	K-S Critical(0.05) Value					0.208						
845	Data appear Gamma Distributed at (0.05) Significance Level											
846												
847	Lognormal GOF Test Results											
848												
849	Correlation Coefficient R					0.955						
850	Shapiro Wilk Test Statistic					0.913						

	A	B	C	D	E	F	G	H	I	J	K	L
851	Shapiro Wilk Critical (0.05) Value					0.892						
852	Approximate Shapiro Wilk P Value					0.116						
853	Lilliefors Test Statistic					0.193						
854	Lilliefors Critical (0.05) Value					0.207						
855	Data appear Lognormal at (0.05) Significance Level											
856												
857	pH (m-60)											
858												
859	Raw Statistics											
860	Number of Valid Observations					17						
861	Number of Missing Observations					1						
862	Number of Distinct Observations					8						
863	Minimum					7.5						
864	Maximum					7.9						
865	Mean of Raw Data					7.685						
866	Standard Deviation of Raw Data					0.119						
867	Khat					4462						
868	Theta hat					0.00172						
869	Kstar					3675						
870	Theta star					0.00209						
871	Mean of Log Transformed Data					2.039						
872	Standard Deviation of Log Transformed Data					0.0154						
873												
874	Normal GOF Test Results											
875												
876	Correlation Coefficient R					0.979						
877	Shapiro Wilk Test Statistic					0.948						
878	Shapiro Wilk Critical (0.05) Value					0.892						
879	Approximate Shapiro Wilk P Value					0.474						
880	Lilliefors Test Statistic					0.174						
881	Lilliefors Critical (0.05) Value					0.207						
882	Data appear Normal at (0.05) Significance Level											
883												
884	Gamma GOF Test Results											
885												
886	Correlation Coefficient R					0.978						
887	A-D Test Statistic					0.474						
888	A-D Critical (0.05) Value					0.736						
889	K-S Test Statistic					0.193						
890	K-S Critical(0.05) Value					0.208						
891	Data appear Gamma Distributed at (0.05) Significance Level											
892												
893	Lognormal GOF Test Results											
894												
895	Correlation Coefficient R					0.979						
896	Shapiro Wilk Test Statistic					0.948						
897	Shapiro Wilk Critical (0.05) Value					0.892						
898	Approximate Shapiro Wilk P Value					0.471						
899	Lilliefors Test Statistic					0.173						
900	Lilliefors Critical (0.05) Value					0.207						

	A	B	C	D	E	F	G	H	I	J	K	L
901	Data appear Lognormal at (0.05) Significance Level											
902												
903	pH (m-61)											
904												
905	Raw Statistics											
906	Number of Valid Observations					17						
907	Number of Missing Observations					1						
908	Number of Distinct Observations					8						
909	Minimum					7.22						
910	Maximum					8						
911	Mean of Raw Data					7.665						
912	Standard Deviation of Raw Data					0.184						
913	Khat					1829						
914	Theta hat					0.00419						
915	Kstar					1506						
916	Theta star					0.00509						
917	Mean of Log Transformed Data					2.036						
918	Standard Deviation of Log Transformed Data					0.0242						
919												
920	Normal GOF Test Results											
921												
922	Correlation Coefficient R					0.971						
923	Shapiro Wilk Test Statistic					0.955						
924	Shapiro Wilk Critical (0.05) Value					0.892						
925	Approximate Shapiro Wilk P Value					0.48						
926	Lilliefors Test Statistic					0.126						
927	Lilliefors Critical (0.05) Value					0.207						
928	Data appear Normal at (0.05) Significance Level											
929												
930	Gamma GOF Test Results											
931												
932	Correlation Coefficient R					0.972						
933	A-D Test Statistic					0.373						
934	A-D Critical (0.05) Value					0.736						
935	K-S Test Statistic					0.128						
936	K-S Critical(0.05) Value					0.208						
937	Data appear Gamma Distributed at (0.05) Significance Level											
938												
939	Lognormal GOF Test Results											
940												
941	Correlation Coefficient R					0.968						
942	Shapiro Wilk Test Statistic					0.95						
943	Shapiro Wilk Critical (0.05) Value					0.892						
944	Approximate Shapiro Wilk P Value					0.416						
945	Lilliefors Test Statistic					0.128						
946	Lilliefors Critical (0.05) Value					0.207						
947	Data appear Lognormal at (0.05) Significance Level											
948												
949	Sulfate (m-54)											
950												

	A	B	C	D	E	F	G	H	I	J	K	L
951	Raw Statistics											
952	Number of Valid Observations					18						
953	Number of Distinct Observations					5						
954	Minimum					340						
955	Maximum					380						
956	Mean of Raw Data					361.1						
957	Standard Deviation of Raw Data					12.31						
958	Khat					913.3						
959	Theta hat					0.395						
960	Kstar					761.1						
961	Theta star					0.474						
962	Mean of Log Transformed Data					5.889						
963	Standard Deviation of Log Transformed Data					0.034						
964												
965	Normal GOF Test Results											
966												
967	Correlation Coefficient R					0.957						
968	Shapiro Wilk Test Statistic					0.903						
969	Shapiro Wilk Critical (0.05) Value					0.897						
970	Approximate Shapiro Wilk P Value					0.0778						
971	Lilliefors Test Statistic					0.205						
972	Lilliefors Critical (0.05) Value					0.202						
973	Data appear Approximate Normal at (0.05) Significance Level											
974												
975	Gamma GOF Test Results											
976												
977	Correlation Coefficient R					0.956						
978	A-D Test Statistic					0.789						
979	A-D Critical (0.05) Value					0.737						
980	K-S Test Statistic					0.212						
981	K-S Critical(0.05) Value					0.203						
982	Data not Gamma Distributed at (0.05) Significance Level											
983												
984	Lognormal GOF Test Results											
985												
986	Correlation Coefficient R					0.958						
987	Shapiro Wilk Test Statistic					0.905						
988	Shapiro Wilk Critical (0.05) Value					0.897						
989	Approximate Shapiro Wilk P Value					0.083						
990	Lilliefors Test Statistic					0.205						
991	Lilliefors Critical (0.05) Value					0.202						
992	Data appear Approximate_Lognormal at (0.05) Significance Level											
993												
994	Sulfate (m-59)											
995												
996	Raw Statistics											
997	Number of Valid Observations					18						
998	Number of Distinct Observations					5						
999	Minimum					330						
1000	Maximum					370						

	A	B	C	D	E	F	G	H	I	J	K	L
1001	Mean of Raw Data					348.3						
1002	Standard Deviation of Raw Data					10.43						
1003	Khat					1180						
1004	Theta hat					0.295						
1005	Kstar					983.2						
1006	Theta star					0.354						
1007	Mean of Log Transformed Data					5.853						
1008	Standard Deviation of Log Transformed Data					0.03						
1009												
1010	Normal GOF Test Results											
1011												
1012	Correlation Coefficient R					0.958						
1013	Shapiro Wilk Test Statistic					0.92						
1014	Shapiro Wilk Critical (0.05) Value					0.897						
1015	Approximate Shapiro Wilk P Value					0.127						
1016	Lilliefors Test Statistic					0.23						
1017	Lilliefors Critical (0.05) Value					0.202						
1018	Data appear Approximate Normal at (0.05) Significance Level											
1019												
1020	Gamma GOF Test Results											
1021												
1022	Correlation Coefficient R					0.958						
1023	A-D Test Statistic					0.805						
1024	A-D Critical (0.05) Value					0.737						
1025	K-S Test Statistic					0.236						
1026	K-S Critical(0.05) Value					0.203						
1027	Data not Gamma Distributed at (0.05) Significance Level											
1028												
1029	Lognormal GOF Test Results											
1030												
1031	Correlation Coefficient R					0.957						
1032	Shapiro Wilk Test Statistic					0.919						
1033	Shapiro Wilk Critical (0.05) Value					0.897						
1034	Approximate Shapiro Wilk P Value					0.124						
1035	Lilliefors Test Statistic					0.236						
1036	Lilliefors Critical (0.05) Value					0.202						
1037	Data appear Approximate_Lognormal at (0.05) Significance Level											
1038												
1039	Sulfate (m-60)											
1040												
1041	Raw Statistics											
1042	Number of Valid Observations					18						
1043	Number of Distinct Observations					7						
1044	Minimum					340						
1045	Maximum					410						
1046	Mean of Raw Data					357.2						
1047	Standard Deviation of Raw Data					14.97						
1048	Khat					642.6						
1049	Theta hat					0.556						
1050	Kstar					535.5						

	A	B	C	D	E	F	G	H	I	J	K	L
1051	Theta star					0.667						
1052	Mean of Log Transformed Data					5.878						
1053	Standard Deviation of Log Transformed Data					0.04						
1054												
1055	Normal GOF Test Results											
1056												
1057	Correlation Coefficient R					0.798						
1058	Shapiro Wilk Test Statistic					0.667						
1059	Shapiro Wilk Critical (0.05) Value					0.897						
1060	Approximate Shapiro Wilk P Value					9.0340E-6						
1061	Lilliefors Test Statistic					0.26						
1062	Lilliefors Critical (0.05) Value					0.202						
1063	Data not Normal at (0.05) Significance Level											
1064												
1065	Gamma GOF Test Results											
1066												
1067	Correlation Coefficient R					0.81						
1068	A-D Test Statistic					1.992						
1069	A-D Critical (0.05) Value					0.737						
1070	K-S Test Statistic					0.252						
1071	K-S Critical(0.05) Value					0.203						
1072	Data not Gamma Distributed at (0.05) Significance Level											
1073												
1074	Lognormal GOF Test Results											
1075												
1076	Correlation Coefficient R					0.812						
1077	Shapiro Wilk Test Statistic					0.69						
1078	Shapiro Wilk Critical (0.05) Value					0.897						
1079	Approximate Shapiro Wilk P Value					1.8637E-5						
1080	Lilliefors Test Statistic					0.256						
1081	Lilliefors Critical (0.05) Value					0.202						
1082	Data not Lognormal at (0.05) Significance Level											
1083												
1084	Non-parametric GOF Test Results											
1085												
1086	Data do not follow a discernible distribution at (0.05) Level of Significance											
1087												
1088	Sulfate (m-61)											
1089												
1090	Raw Statistics											
1091	Number of Valid Observations					18						
1092	Number of Distinct Observations					7						
1093	Minimum					340						
1094	Maximum					420						
1095	Mean of Raw Data					361.7						
1096	Standard Deviation of Raw Data					19.78						
1097	Khat					371.4						
1098	Theta hat					0.974						
1099	Kstar					309.6						
1100	Theta star					1.168						

	A	B	C	D	E	F	G	H	I	J	K	L
1101	Mean of Log Transformed Data					5.889						
1102	Standard Deviation of Log Transformed Data					0.0528						
1103												
1104	Normal GOF Test Results											
1105												
1106	Correlation Coefficient R					0.911						
1107	Shapiro Wilk Test Statistic					0.842						
1108	Shapiro Wilk Critical (0.05) Value					0.897						
1109	Approximate Shapiro Wilk P Value					0.00488						
1110	Lilliefors Test Statistic					0.256						
1111	Lilliefors Critical (0.05) Value					0.202						
1112	Data not Normal at (0.05) Significance Level											
1113												
1114	Gamma GOF Test Results											
1115												
1116	Correlation Coefficient R					0.921						
1117	A-D Test Statistic					0.882						
1118	A-D Critical (0.05) Value					0.737						
1119	K-S Test Statistic					0.251						
1120	K-S Critical(0.05) Value					0.203						
1121	Data not Gamma Distributed at (0.05) Significance Level											
1122												
1123	Lognormal GOF Test Results											
1124												
1125	Correlation Coefficient R					0.923						
1126	Shapiro Wilk Test Statistic					0.862						
1127	Shapiro Wilk Critical (0.05) Value					0.897						
1128	Approximate Shapiro Wilk P Value					0.011						
1129	Lilliefors Test Statistic					0.247						
1130	Lilliefors Critical (0.05) Value					0.202						
1131	Data not Lognormal at (0.05) Significance Level											
1132												
1133	Non-parametric GOF Test Results											
1134												
1135	Data do not follow a discernible distribution at (0.05) Level of Significance											
1136												
1137	TDS (m-54)											
1138												
1139	Raw Statistics											
1140	Number of Valid Observations					18						
1141	Number of Distinct Observations					4						
1142	Minimum					2900						
1143	Maximum					3200						
1144	Mean of Raw Data					3033						
1145	Standard Deviation of Raw Data					108.5						
1146	Khat					830.4						
1147	Theta hat					3.653						
1148	Kstar					692						
1149	Theta star					4.383						
1150	Mean of Log Transformed Data					8.017						

	A	B	C	D	E	F	G	H	I	J	K	L
1151	Standard Deviation of Log Transformed Data					0.0357						
1152												
1153	Normal GOF Test Results											
1154												
1155	Correlation Coefficient R					0.947						
1156	Shapiro Wilk Test Statistic					0.875						
1157	Shapiro Wilk Critical (0.05) Value					0.897						
1158	Approximate Shapiro Wilk P Value					0.026						
1159	Lilliefors Test Statistic					0.176						
1160	Lilliefors Critical (0.05) Value					0.202						
1161	Data appear Approximate Normal at (0.05) Significance Level											
1162												
1163	Gamma GOF Test Results											
1164												
1165	Correlation Coefficient R					0.945						
1166	A-D Test Statistic					0.876						
1167	A-D Critical (0.05) Value					0.737						
1168	K-S Test Statistic					0.183						
1169	K-S Critical(0.05) Value					0.203						
1170	Data follow Appr. Gamma Distribution at (0.05) Significance Level											
1171												
1172	Lognormal GOF Test Results											
1173												
1174	Correlation Coefficient R					0.947						
1175	Shapiro Wilk Test Statistic					0.875						
1176	Shapiro Wilk Critical (0.05) Value					0.897						
1177	Approximate Shapiro Wilk P Value					0.0261						
1178	Lilliefors Test Statistic					0.179						
1179	Lilliefors Critical (0.05) Value					0.202						
1180	Data appear Approximate_Lognormal at (0.05) Significance Level											
1181												
1182	TDS (m-59)											
1183												
1184	Raw Statistics											
1185	Number of Valid Observations					18						
1186	Number of Distinct Observations					4						
1187	Minimum					2500						
1188	Maximum					2900						
1189	Mean of Raw Data					2717						
1190	Standard Deviation of Raw Data					98.52						
1191	Khat					790						
1192	Theta hat					3.439						
1193	Kstar					658.4						
1194	Theta star					4.126						
1195	Mean of Log Transformed Data					7.907						
1196	Standard Deviation of Log Transformed Data					0.0368						
1197												
1198	Normal GOF Test Results											
1199												
1200	Correlation Coefficient R					0.895						

	A	B	C	D	E	F	G	H	I	J	K	L
1201	Shapiro Wilk Test Statistic					0.815						
1202	Shapiro Wilk Critical (0.05) Value					0.897						
1203	Approximate Shapiro Wilk P Value					0.00165						
1204	Lilliefors Test Statistic					0.322						
1205	Lilliefors Critical (0.05) Value					0.202						
1206	Data not Normal at (0.05) Significance Level											
1207												
1208	Gamma GOF Test Results											
1209												
1210	Correlation Coefficient R					0.896						
1211	A-D Test Statistic					1.681						
1212	A-D Critical (0.05) Value					0.737						
1213	K-S Test Statistic					0.325						
1214	K-S Critical(0.05) Value					0.203						
1215	Data not Gamma Distributed at (0.05) Significance Level											
1216												
1217	Lognormal GOF Test Results											
1218												
1219	Correlation Coefficient R					0.89						
1220	Shapiro Wilk Test Statistic					0.806						
1221	Shapiro Wilk Critical (0.05) Value					0.897						
1222	Approximate Shapiro Wilk P Value					0.00116						
1223	Lilliefors Test Statistic					0.329						
1224	Lilliefors Critical (0.05) Value					0.202						
1225	Data not Lognormal at (0.05) Significance Level											
1226												
1227	Non-parametric GOF Test Results											
1228												
1229	Data do not follow a discernible distribution at (0.05) Level of Significance											
1230												
1231	TDS (m-60)											
1232												
1233	Raw Statistics											
1234	Number of Valid Observations					18						
1235	Number of Distinct Observations					6						
1236	Minimum					2600						
1237	Maximum					3000						
1238	Mean of Raw Data					2792						
1239	Standard Deviation of Raw Data					94.32						
1240	Khat					920.9						
1241	Theta hat					3.032						
1242	Kstar					767.4						
1243	Theta star					3.638						
1244	Mean of Log Transformed Data					7.934						
1245	Standard Deviation of Log Transformed Data					0.034						
1246												
1247	Normal GOF Test Results											
1248												
1249	Correlation Coefficient R					0.901						
1250	Shapiro Wilk Test Statistic					0.83						

	A	B	C	D	E	F	G	H	I	J	K	L
1251	Shapiro Wilk Critical (0.05) Value					0.897						
1252	Approximate Shapiro Wilk P Value					0.00273						
1253	Lilliefors Test Statistic					0.313						
1254	Lilliefors Critical (0.05) Value					0.202						
1255	Data not Normal at (0.05) Significance Level											
1256												
1257	Gamma GOF Test Results											
1258												
1259	Correlation Coefficient R					0.904						
1260	A-D Test Statistic					1.74						
1261	A-D Critical (0.05) Value					0.737						
1262	K-S Test Statistic					0.318						
1263	K-S Critical(0.05) Value					0.203						
1264	Data not Gamma Distributed at (0.05) Significance Level											
1265												
1266	Lognormal GOF Test Results											
1267												
1268	Correlation Coefficient R					0.899						
1269	Shapiro Wilk Test Statistic					0.826						
1270	Shapiro Wilk Critical (0.05) Value					0.897						
1271	Approximate Shapiro Wilk P Value					0.00239						
1272	Lilliefors Test Statistic					0.319						
1273	Lilliefors Critical (0.05) Value					0.202						
1274	Data not Lognormal at (0.05) Significance Level											
1275												
1276	Non-parametric GOF Test Results											
1277												
1278	Data do not follow a discernible distribution at (0.05) Level of Significance											
1279												
1280	TDS (m-61)											
1281												
1282	Raw Statistics											
1283	Number of Valid Observations					18						
1284	Number of Distinct Observations					5						
1285	Minimum					2600						
1286	Maximum					3000						
1287	Mean of Raw Data					2806						
1288	Standard Deviation of Raw Data					105.6						
1289	Khat					750.3						
1290	Theta hat					3.739						
1291	Kstar					625.3						
1292	Theta star					4.487						
1293	Mean of Log Transformed Data					7.939						
1294	Standard Deviation of Log Transformed Data					0.0375						
1295												
1296	Normal GOF Test Results											
1297												
1298	Correlation Coefficient R					0.956						
1299	Shapiro Wilk Test Statistic					0.915						
1300	Shapiro Wilk Critical (0.05) Value					0.897						

	A	B	C	D	E	F	G	H	I	J	K	L
1301	Approximate Shapiro Wilk P Value					0.107						
1302	Lilliefors Test Statistic					0.243						
1303	Lilliefors Critical (0.05) Value					0.202						
1304	Data appear Approximate Normal at (0.05) Significance Level											
1305												
1306	Gamma GOF Test Results											
1307												
1308	Correlation Coefficient R					0.957						
1309	A-D Test Statistic					0.82						
1310	A-D Critical (0.05) Value					0.737						
1311	K-S Test Statistic					0.239						
1312	K-S Critical(0.05) Value					0.203						
1313	Data not Gamma Distributed at (0.05) Significance Level											
1314												
1315	Lognormal GOF Test Results											
1316												
1317	Correlation Coefficient R					0.957						
1318	Shapiro Wilk Test Statistic					0.917						
1319	Shapiro Wilk Critical (0.05) Value					0.897						
1320	Approximate Shapiro Wilk P Value					0.116						
1321	Lilliefors Test Statistic					0.236						
1322	Lilliefors Critical (0.05) Value					0.202						
1323	Data appear Approximate_Lognormal at (0.05) Significance Level											

	A	B	C	D	E	F	G	H	I	J	K	L
1					Outlier Tests for Selected Variables excluding nondetects							
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.14/1/2020 1:24:14 PM								
4				From File	20200330APS_BAM_DetMon_Oct2019_NoDups.xls							
5				Full Precision	OFF							
6												
7												
8	Dixon's Outlier Test for Boron (m-54)											
9												
10	Total N = 18											
11	Number NDs = 0											
12	Number Detects = 18											
13	10% critical value: 0.424											
14	5% critical value: 0.475											
15	1% critical value: 0.561											
16	Note: NDs excluded from Outlier Test											
17												
18	1. Data Value 0.56 is a Potential Outlier (Upper Tail)?											
19												
20	Test Statistic: 0.500											
21												
22	For 10% significance level, 0.56 is an outlier.											
23	For 5% significance level, 0.56 is an outlier.											
24	For 1% significance level, 0.56 is not an outlier.											
25												
26	2. Data Value 0.49 is a Potential Outlier (Lower Tail)?											
27												
28	Test Statistic: 0.250											
29												
30	For 10% significance level, 0.49 is not an outlier.											
31	For 5% significance level, 0.49 is not an outlier.											
32	For 1% significance level, 0.49 is not an outlier.											
33												
34												
35	Dixon's Outlier Test for Boron (m-59)											
36												
37	Total N = 18											
38	Number NDs = 0											
39	Number Detects = 18											
40	10% critical value: 0.424											
41	5% critical value: 0.475											
42	1% critical value: 0.561											
43	Note: NDs excluded from Outlier Test											
44												
45	1. Data Value 0.53 is a Potential Outlier (Upper Tail)?											
46												
47	Test Statistic: 0.400											
48												
49	For 10% significance level, 0.53 is not an outlier.											
50	For 5% significance level, 0.53 is not an outlier.											

	A	B	C	D	E	F	G	H	I	J	K	L
51	For 1% significance level, 0.53 is not an outlier.											
52												
53	2. Data Value 0.48 is a Potential Outlier (Lower Tail)?											
54												
55	Test Statistic: 0.000											
56												
57	For 10% significance level, 0.48 is not an outlier.											
58	For 5% significance level, 0.48 is not an outlier.											
59	For 1% significance level, 0.48 is not an outlier.											
60												
61												
62	Dixon's Outlier Test for Boron (m-60)											
63												
64	Total N = 18											
65	Number NDs = 0											
66	Number Detects = 18											
67	10% critical value: 0.424											
68	5% critical value: 0.475											
69	1% critical value: 0.561											
70	Note: NDs excluded from Outlier Test											
71												
72	1. Data Value 0.54 is a Potential Outlier (Upper Tail)?											
73												
74	Test Statistic: 0.250											
75												
76	For 10% significance level, 0.54 is not an outlier.											
77	For 5% significance level, 0.54 is not an outlier.											
78	For 1% significance level, 0.54 is not an outlier.											
79												
80	2. Data Value 0.475 is a Potential Outlier (Lower Tail)?											
81												
82	Test Statistic: 0.455											
83												
84	For 10% significance level, 0.475 is an outlier.											
85	For 5% significance level, 0.475 is not an outlier.											
86	For 1% significance level, 0.475 is not an outlier.											
87												
88												
89	Dixon's Outlier Test for Boron (m-61)											
90												
91	Total N = 18											
92	Number NDs = 0											
93	Number Detects = 18											
94	10% critical value: 0.424											
95	5% critical value: 0.475											
96	1% critical value: 0.561											
97	Note: NDs excluded from Outlier Test											
98												
99	1. Data Value 0.52 is a Potential Outlier (Upper Tail)?											
100												

	A	B	C	D	E	F	G	H	I	J	K	L
101	Test Statistic: 0.250											
102												
103	For 10% significance level, 0.52 is not an outlier.											
104	For 5% significance level, 0.52 is not an outlier.											
105	For 1% significance level, 0.52 is not an outlier.											
106												
107	2. Data Value 0.48 is a Potential Outlier (Lower Tail)?											
108												
109	Test Statistic: 0.000											
110												
111	For 10% significance level, 0.48 is not an outlier.											
112	For 5% significance level, 0.48 is not an outlier.											
113	For 1% significance level, 0.48 is not an outlier.											
114												
115												
116	Dixon's Outlier Test for Calcium (m-54)											
117												
118	Total N = 18											
119	Number NDs = 0											
120	Number Detects = 18											
121	10% critical value: 0.424											
122	5% critical value: 0.475											
123	1% critical value: 0.561											
124	Note: NDs excluded from Outlier Test											
125												
126	1. Data Value 110 is a Potential Outlier (Upper Tail)?											
127												
128	Test Statistic: 0.714											
129												
130	For 10% significance level, 110 is an outlier.											
131	For 5% significance level, 110 is an outlier.											
132	For 1% significance level, 110 is an outlier.											
133												
134	2. Data Value 95 is a Potential Outlier (Lower Tail)?											
135												
136	Test Statistic: 0.200											
137												
138	For 10% significance level, 95 is not an outlier.											
139	For 5% significance level, 95 is not an outlier.											
140	For 1% significance level, 95 is not an outlier.											
141												
142												
143	Dixon's Outlier Test for Calcium (m-59)											
144												
145	Total N = 18											
146	Number NDs = 0											
147	Number Detects = 18											
148	10% critical value: 0.424											
149	5% critical value: 0.475											
150	1% critical value: 0.561											

	A	B	C	D	E	F	G	H	I	J	K	L
151	Note: NDs excluded from Outlier Test											
152												
153	1. Data Value 93 is a Potential Outlier (Upper Tail)?											
154												
155	Test Statistic: 0.375											
156												
157	For 10% significance level, 93 is not an outlier.											
158	For 5% significance level, 93 is not an outlier.											
159	For 1% significance level, 93 is not an outlier.											
160												
161	2. Data Value 84 is a Potential Outlier (Lower Tail)?											
162												
163	Test Statistic: 0.167											
164												
165	For 10% significance level, 84 is not an outlier.											
166	For 5% significance level, 84 is not an outlier.											
167	For 1% significance level, 84 is not an outlier.											
168												
169												
170	Dixon's Outlier Test for Calcium (m-60)											
171												
172	Total N = 18											
173	Number NDs = 0											
174	Number Detects = 18											
175	10% critical value: 0.424											
176	5% critical value: 0.475											
177	1% critical value: 0.561											
178	Note: NDs excluded from Outlier Test											
179												
180	1. Data Value 92 is a Potential Outlier (Upper Tail)?											
181												
182	Test Statistic: 0.250											
183												
184	For 10% significance level, 92 is not an outlier.											
185	For 5% significance level, 92 is not an outlier.											
186	For 1% significance level, 92 is not an outlier.											
187												
188	2. Data Value 83 is a Potential Outlier (Lower Tail)?											
189												
190	Test Statistic: 0.143											
191												
192	For 10% significance level, 83 is not an outlier.											
193	For 5% significance level, 83 is not an outlier.											
194	For 1% significance level, 83 is not an outlier.											
195												
196												
197	Dixon's Outlier Test for Calcium (m-61)											
198												
199	Total N = 18											
200	Number NDs = 0											

	A	B	C	D	E	F	G	H	I	J	K	L
201	Number Detects = 18											
202	10% critical value: 0.424											
203	5% critical value: 0.475											
204	1% critical value: 0.561											
205	Note: NDs excluded from Outlier Test											
206												
207	1. Data Value 94 is a Potential Outlier (Upper Tail)?											
208												
209	Test Statistic: 0.286											
210												
211	For 10% significance level, 94 is not an outlier.											
212	For 5% significance level, 94 is not an outlier.											
213	For 1% significance level, 94 is not an outlier.											
214												
215	2. Data Value 86 is a Potential Outlier (Lower Tail)?											
216												
217	Test Statistic: 0.167											
218												
219	For 10% significance level, 86 is not an outlier.											
220	For 5% significance level, 86 is not an outlier.											
221	For 1% significance level, 86 is not an outlier.											
222												
223												
224	Dixon's Outlier Test for Chloride (m-54)											
225												
226	Total N = 18											
227	Number NDs = 0											
228	Number Detects = 18											
229	10% critical value: 0.424											
230	5% critical value: 0.475											
231	1% critical value: 0.561											
232	Note: NDs excluded from Outlier Test											
233												
234	1. Data Value 1600 is a Potential Outlier (Upper Tail)?											
235												
236	Test Statistic: 0.000											
237												
238	For 10% significance level, 1600 is not an outlier.											
239	For 5% significance level, 1600 is not an outlier.											
240	For 1% significance level, 1600 is not an outlier.											
241												
242	2. Data Value 1300 is a Potential Outlier (Lower Tail)?											
243												
244	Test Statistic: 0.333											
245												
246	For 10% significance level, 1300 is not an outlier.											
247	For 5% significance level, 1300 is not an outlier.											
248	For 1% significance level, 1300 is not an outlier.											
249												
250												

	A	B	C	D	E	F	G	H	I	J	K	L
251	Dixon's Outlier Test for Chloride (m-59)											
252												
253	Total N = 18											
254	Number NDs = 0											
255	Number Detects = 18											
256	10% critical value: 0.424											
257	5% critical value: 0.475											
258	1% critical value: 0.561											
259	Note: NDs excluded from Outlier Test											
260												
261	1. Data Value 1400 is a Potential Outlier (Upper Tail)?											
262												
263	Test Statistic: 0.000											
264												
265	For 10% significance level, 1400 is not an outlier.											
266	For 5% significance level, 1400 is not an outlier.											
267	For 1% significance level, 1400 is not an outlier.											
268												
269	2. Data Value 1200 is a Potential Outlier (Lower Tail)?											
270												
271	Test Statistic: 0.500											
272												
273	For 10% significance level, 1200 is an outlier.											
274	For 5% significance level, 1200 is an outlier.											
275	For 1% significance level, 1200 is not an outlier.											
276												
277												
278	Dixon's Outlier Test for Chloride (m-60)											
279												
280	Total N = 18											
281	Number NDs = 0											
282	Number Detects = 18											
283	10% critical value: 0.424											
284	5% critical value: 0.475											
285	1% critical value: 0.561											
286	Note: NDs excluded from Outlier Test											
287												
288	1. Data Value 1500 is a Potential Outlier (Upper Tail)?											
289												
290	Test Statistic: 0.500											
291												
292	For 10% significance level, 1500 is an outlier.											
293	For 5% significance level, 1500 is an outlier.											
294	For 1% significance level, 1500 is not an outlier.											
295												
296	2. Data Value 1300 is a Potential Outlier (Lower Tail)?											
297												
298	Test Statistic: 0.000											
299												
300	For 10% significance level, 1300 is not an outlier.											

	A	B	C	D	E	F	G	H	I	J	K	L
301	For 5% significance level, 1300 is not an outlier.											
302	For 1% significance level, 1300 is not an outlier.											
303												
304												
305	Dixon's Outlier Test for Chloride (m-61)											
306												
307	Total N = 18											
308	Number NDs = 0											
309	Number Detects = 18											
310	10% critical value: 0.424											
311	5% critical value: 0.475											
312	1% critical value: 0.561											
313	Note: NDs excluded from Outlier Test											
314												
315	1. Data Value 1700 is a Potential Outlier (Upper Tail)?											
316												
317	Test Statistic: 0.500											
318												
319	For 10% significance level, 1700 is an outlier.											
320	For 5% significance level, 1700 is an outlier.											
321	For 1% significance level, 1700 is not an outlier.											
322												
323	2. Data Value 1100 is a Potential Outlier (Lower Tail)?											
324												
325	Test Statistic: 0.500											
326												
327	For 10% significance level, 1100 is an outlier.											
328	For 5% significance level, 1100 is an outlier.											
329	For 1% significance level, 1100 is not an outlier.											
330												
331												
332	Dixon's Outlier Test for Fluoride (m-54)											
333												
334	Total N = 18											
335	Number NDs = 0											
336	Number Detects = 18											
337	10% critical value: 0.424											
338	5% critical value: 0.475											
339	1% critical value: 0.561											
340	Note: NDs excluded from Outlier Test											
341												
342	1. Data Value 1.4 is a Potential Outlier (Upper Tail)?											
343												
344	Test Statistic: 0.000											
345												
346	For 10% significance level, 1.4 is not an outlier.											
347	For 5% significance level, 1.4 is not an outlier.											
348	For 1% significance level, 1.4 is not an outlier.											
349												
350	2. Data Value 1.2 is a Potential Outlier (Lower Tail)?											

	A	B	C	D	E	F	G	H	I	J	K	L
351												
352	Test Statistic: 0.500											
353												
354	For 10% significance level, 1.2 is an outlier.											
355	For 5% significance level, 1.2 is an outlier.											
356	For 1% significance level, 1.2 is not an outlier.											
357												
358												
359	Dixon's Outlier Test for Fluoride (m-59)											
360												
361	Total N = 18											
362	Number NDs = 0											
363	Number Detects = 18											
364	10% critical value: 0.424											
365	5% critical value: 0.475											
366	1% critical value: 0.561											
367	Note: NDs excluded from Outlier Test											
368												
369	1. Data Value 1.5 is a Potential Outlier (Upper Tail)?											
370												
371	Test Statistic: 0.500											
372												
373	For 10% significance level, 1.5 is an outlier.											
374	For 5% significance level, 1.5 is an outlier.											
375	For 1% significance level, 1.5 is not an outlier.											
376												
377	2. Data Value 1.3 is a Potential Outlier (Lower Tail)?											
378												
379	Test Statistic: 0.000											
380												
381	For 10% significance level, 1.3 is not an outlier.											
382	For 5% significance level, 1.3 is not an outlier.											
383	For 1% significance level, 1.3 is not an outlier.											
384												
385												
386	Dixon's Outlier Test for Fluoride (m-60)											
387												
388	Total N = 18											
389	Number NDs = 0											
390	Number Detects = 18											
391	10% critical value: 0.424											
392	5% critical value: 0.475											
393	1% critical value: 0.561											
394	Note: NDs excluded from Outlier Test											
395												
396	1. Data Value 1.5 is a Potential Outlier (Upper Tail)?											
397												
398	Test Statistic: 0.000											
399												
400	For 10% significance level, 1.5 is not an outlier.											

	A	B	C	D	E	F	G	H	I	J	K	L
401	For 5% significance level, 1.5 is not an outlier.											
402	For 1% significance level, 1.5 is not an outlier.											
403												
404	2. Data Value 1.3 is a Potential Outlier (Lower Tail)?											
405												
406	Test Statistic: 0.500											
407												
408	For 10% significance level, 1.3 is an outlier.											
409	For 5% significance level, 1.3 is an outlier.											
410	For 1% significance level, 1.3 is not an outlier.											
411												
412												
413	Dixon's Outlier Test for Fluoride (m-61)											
414												
415	Total N = 18											
416	Number NDs = 0											
417	Number Detects = 18											
418	10% critical value: 0.424											
419	5% critical value: 0.475											
420	1% critical value: 0.561											
421	Note: NDs excluded from Outlier Test											
422												
423	1. Data Value 1.5 is a Potential Outlier (Upper Tail)?											
424												
425	Test Statistic: 0.000											
426												
427	For 10% significance level, 1.5 is not an outlier.											
428	For 5% significance level, 1.5 is not an outlier.											
429	For 1% significance level, 1.5 is not an outlier.											
430												
431	2. Data Value 1.3 is a Potential Outlier (Lower Tail)?											
432												
433	Test Statistic: 0.250											
434												
435	For 10% significance level, 1.3 is not an outlier.											
436	For 5% significance level, 1.3 is not an outlier.											
437	For 1% significance level, 1.3 is not an outlier.											
438												
439												
440	Dixon's Outlier Test for pH (m-54)											
441												
442	Total N = 17											
443	Number NDs = 0											
444	Number Detects = 17											
445	10% critical value: 0.438											
446	5% critical value: 0.49											
447	1% critical value: 0.577											
448	Note: NDs excluded from Outlier Test											
449												
450	1. Data Value 7.8 is a Potential Outlier (Upper Tail)?											

	A	B	C	D	E	F	G	H	I	J	K	L
451												
452	Test Statistic: 0.250											
453												
454	For 10% significance level, 7.8 is not an outlier.											
455	For 5% significance level, 7.8 is not an outlier.											
456	For 1% significance level, 7.8 is not an outlier.											
457												
458	2. Data Value 7.34 is a Potential Outlier (Lower Tail)?											
459												
460	Test Statistic: 0.167											
461												
462	For 10% significance level, 7.34 is not an outlier.											
463	For 5% significance level, 7.34 is not an outlier.											
464	For 1% significance level, 7.34 is not an outlier.											
465												
466												
467	Dixon's Outlier Test for pH (m-59)											
468												
469	Total N = 17											
470	Number NDs = 0											
471	Number Detects = 17											
472	10% critical value: 0.438											
473	5% critical value: 0.49											
474	1% critical value: 0.577											
475	Note: NDs excluded from Outlier Test											
476												
477	1. Data Value 8.1 is a Potential Outlier (Upper Tail)?											
478												
479	Test Statistic: 0.526											
480												
481	For 10% significance level, 8.1 is an outlier.											
482	For 5% significance level, 8.1 is an outlier.											
483	For 1% significance level, 8.1 is not an outlier.											
484												
485	2. Data Value 7.5 is a Potential Outlier (Lower Tail)?											
486												
487	Test Statistic: 0.100											
488												
489	For 10% significance level, 7.5 is not an outlier.											
490	For 5% significance level, 7.5 is not an outlier.											
491	For 1% significance level, 7.5 is not an outlier.											
492												
493												
494	Dixon's Outlier Test for pH (m-60)											
495												
496	Total N = 17											
497	Number NDs = 0											
498	Number Detects = 17											
499	10% critical value: 0.438											
500	5% critical value: 0.49											

	A	B	C	D	E	F	G	H	I	J	K	L
501	1% critical value: 0.577											
502	Note: NDs excluded from Outlier Test											
503												
504	1. Data Value 7.9 is a Potential Outlier (Upper Tail)?											
505												
506	Test Statistic: 0.294											
507												
508	For 10% significance level, 7.9 is not an outlier.											
509	For 5% significance level, 7.9 is not an outlier.											
510	For 1% significance level, 7.9 is not an outlier.											
511												
512	2. Data Value 7.5 is a Potential Outlier (Lower Tail)?											
513												
514	Test Statistic: 0.200											
515												
516	For 10% significance level, 7.5 is not an outlier.											
517	For 5% significance level, 7.5 is not an outlier.											
518	For 1% significance level, 7.5 is not an outlier.											
519												
520												
521	Dixon's Outlier Test for pH (m-61)											
522												
523	Total N = 17											
524	Number NDs = 0											
525	Number Detects = 17											
526	10% critical value: 0.438											
527	5% critical value: 0.49											
528	1% critical value: 0.577											
529	Note: NDs excluded from Outlier Test											
530												
531	1. Data Value 8 is a Potential Outlier (Upper Tail)?											
532												
533	Test Statistic: 0.400											
534												
535	For 10% significance level, 8 is not an outlier.											
536	For 5% significance level, 8 is not an outlier.											
537	For 1% significance level, 8 is not an outlier.											
538												
539	2. Data Value 7.22 is a Potential Outlier (Lower Tail)?											
540												
541	Test Statistic: 0.483											
542												
543	For 10% significance level, 7.22 is an outlier.											
544	For 5% significance level, 7.22 is not an outlier.											
545	For 1% significance level, 7.22 is not an outlier.											
546												
547												
548	Dixon's Outlier Test for Sulfate (m-54)											
549												
550	Total N = 18											

	A	B	C	D	E	F	G	H	I	J	K	L
551	Number NDs = 0											
552	Number Detects = 18											
553	10% critical value: 0.424											
554	5% critical value: 0.475											
555	1% critical value: 0.561											
556	Note: NDs excluded from Outlier Test											
557												
558	1. Data Value 380 is a Potential Outlier (Upper Tail)?											
559												
560	Test Statistic: 0.000											
561												
562	For 10% significance level, 380 is not an outlier.											
563	For 5% significance level, 380 is not an outlier.											
564	For 1% significance level, 380 is not an outlier.											
565												
566	2. Data Value 340 is a Potential Outlier (Lower Tail)?											
567												
568	Test Statistic: 0.250											
569												
570	For 10% significance level, 340 is not an outlier.											
571	For 5% significance level, 340 is not an outlier.											
572	For 1% significance level, 340 is not an outlier.											
573												
574												
575	Dixon's Outlier Test for Sulfate (m-59)											
576												
577	Total N = 18											
578	Number NDs = 0											
579	Number Detects = 18											
580	10% critical value: 0.424											
581	5% critical value: 0.475											
582	1% critical value: 0.561											
583	Note: NDs excluded from Outlier Test											
584												
585	1. Data Value 370 is a Potential Outlier (Upper Tail)?											
586												
587	Test Statistic: 0.333											
588												
589	For 10% significance level, 370 is not an outlier.											
590	For 5% significance level, 370 is not an outlier.											
591	For 1% significance level, 370 is not an outlier.											
592												
593	2. Data Value 330 is a Potential Outlier (Lower Tail)?											
594												
595	Test Statistic: 0.333											
596												
597	For 10% significance level, 330 is not an outlier.											
598	For 5% significance level, 330 is not an outlier.											
599	For 1% significance level, 330 is not an outlier.											
600												

	A	B	C	D	E	F	G	H	I	J	K	L
601	Dixon's Outlier Test for Sulfate (m-60)											
602												
603												
604												
605												
606												
607												
608												
609												
610												
611												
612	1. Data Value 410 is a Potential Outlier (Upper Tail)?											
613												
614	Test Statistic: 0.750											
615												
616	For 10% significance level, 410 is an outlier.											
617	For 5% significance level, 410 is an outlier.											
618	For 1% significance level, 410 is an outlier.											
619												
620	2. Data Value 340 is a Potential Outlier (Lower Tail)?											
621												
622	Test Statistic: 0.400											
623												
624	For 10% significance level, 340 is not an outlier.											
625	For 5% significance level, 340 is not an outlier.											
626	For 1% significance level, 340 is not an outlier.											
627												
628												
629	Dixon's Outlier Test for Sulfate (m-61)											
630												
631	Total N = 18											
632	Number NDs = 0											
633	Number Detects = 18											
634	10% critical value: 0.424											
635	5% critical value: 0.475											
636	1% critical value: 0.561											
637	Note: NDs excluded from Outlier Test											
638												
639	1. Data Value 420 is a Potential Outlier (Upper Tail)?											
640												
641	Test Statistic: 0.500											
642												
643	For 10% significance level, 420 is an outlier.											
644	For 5% significance level, 420 is an outlier.											
645	For 1% significance level, 420 is not an outlier.											
646												
647	2. Data Value 340 is a Potential Outlier (Lower Tail)?											
648												
649	Test Statistic: 0.000											
650												

	A	B	C	D	E	F	G	H	I	J	K	L
651	For 10% significance level, 340 is not an outlier.											
652	For 5% significance level, 340 is not an outlier.											
653	For 1% significance level, 340 is not an outlier.											
654												
655												
656	Dixon's Outlier Test for TDS (m-54)											
657												
658	Total N = 18											
659	Number NDs = 0											
660	Number Detects = 18											
661	10% critical value: 0.424											
662	5% critical value: 0.475											
663	1% critical value: 0.561											
664	Note: NDs excluded from Outlier Test											
665												
666	1. Data Value 3200 is a Potential Outlier (Upper Tail)?											
667												
668	Test Statistic: 0.000											
669												
670	For 10% significance level, 3200 is not an outlier.											
671	For 5% significance level, 3200 is not an outlier.											
672	For 1% significance level, 3200 is not an outlier.											
673												
674	2. Data Value 2900 is a Potential Outlier (Lower Tail)?											
675												
676	Test Statistic: 0.000											
677												
678	For 10% significance level, 2900 is not an outlier.											
679	For 5% significance level, 2900 is not an outlier.											
680	For 1% significance level, 2900 is not an outlier.											
681												
682												
683	Dixon's Outlier Test for TDS (m-59)											
684												
685	Total N = 18											
686	Number NDs = 0											
687	Number Detects = 18											
688	10% critical value: 0.424											
689	5% critical value: 0.475											
690	1% critical value: 0.561											
691	Note: NDs excluded from Outlier Test											
692												
693	1. Data Value 2900 is a Potential Outlier (Upper Tail)?											
694												
695	Test Statistic: 0.500											
696												
697	For 10% significance level, 2900 is an outlier.											
698	For 5% significance level, 2900 is an outlier.											
699	For 1% significance level, 2900 is not an outlier.											
700												

	A	B	C	D	E	F	G	H	I	J	K	L
701	2. Data Value 2500 is a Potential Outlier (Lower Tail)?											
702												
703	Test Statistic: 0.667											
704												
705	For 10% significance level, 2500 is an outlier.											
706	For 5% significance level, 2500 is an outlier.											
707	For 1% significance level, 2500 is an outlier.											
708												
709												
710	Dixon's Outlier Test for TDS (m-60)											
711												
712	Total N = 18											
713	Number NDs = 0											
714	Number Detects = 18											
715	10% critical value: 0.424											
716	5% critical value: 0.475											
717	1% critical value: 0.561											
718	Note: NDs excluded from Outlier Test											
719												
720	1. Data Value 3000 is a Potential Outlier (Upper Tail)?											
721												
722	Test Statistic: 0.333											
723												
724	For 10% significance level, 3000 is not an outlier.											
725	For 5% significance level, 3000 is not an outlier.											
726	For 1% significance level, 3000 is not an outlier.											
727												
728	2. Data Value 2600 is a Potential Outlier (Lower Tail)?											
729												
730	Test Statistic: 0.333											
731												
732	For 10% significance level, 2600 is not an outlier.											
733	For 5% significance level, 2600 is not an outlier.											
734	For 1% significance level, 2600 is not an outlier.											
735												
736												
737	Dixon's Outlier Test for TDS (m-61)											
738												
739	Total N = 18											
740	Number NDs = 0											
741	Number Detects = 18											
742	10% critical value: 0.424											
743	5% critical value: 0.475											
744	1% critical value: 0.561											
745	Note: NDs excluded from Outlier Test											
746												
747	1. Data Value 3000 is a Potential Outlier (Upper Tail)?											
748												
749	Test Statistic: 0.333											
750												

	A	B	C	D	E	F	G	H	I	J	K	L
751	For 10% significance level, 3000 is not an outlier.											
752	For 5% significance level, 3000 is not an outlier.											
753	For 1% significance level, 3000 is not an outlier.											
754												
755	2. Data Value 2600 is a Potential Outlier (Lower Tail)?											
756												
757	Test Statistic: 0.333											
758												
759	For 10% significance level, 2600 is not an outlier.											
760	For 5% significance level, 2600 is not an outlier.											
761	For 1% significance level, 2600 is not an outlier.											
762												

	A	B	C	D	E	F	G	H	I	J	K	L	M	
1				General Statistics on Uncensored Data										
2	Date/Time of Computation			ProUCL 5.13/31/2020 8:47:30 PM										
3	User Selected Options													
4	From File			20200330APS_BAM_DetMon_Oct2019_NoDups.xls										
5	Full Precision			OFF										
6														
7	From File: 20200330APS_BAM_DetMon_Oct2019_NoDups.xls													
8														
9	General Statistics for Censored Data Set (with NDs) using Kaplan Meier Method													
10														
11	Variable	NumObs	# Missing	Num Ds	NumNDs	% NDs	Min ND	Max ND	KM Mean	KM Var	KM SD	KM CV		
12	Boron (m-54)	18	0	18	0	0.00%	N/A	N/A	0.519	3.1634E-4	0.0178	0.0343		
13	Boron (m-59)	18	0	18	0	0.00%	N/A	N/A	0.496	1.8987E-4	0.0138	0.0278		
14	Boron (m-60)	18	0	18	0	0.00%	N/A	N/A	0.511	2.6928E-4	0.0164	0.0321		
15	Boron (m-61)	18	0	18	0	0.00%	N/A	N/A	0.498	1.4412E-4	0.012	0.0241		
16	Calcium (m-54)	18	0	18	0	0.00%	N/A	N/A	99.22	10.54	3.246	0.0327		
17	Calcium (m-59)	18	0	18	0	0.00%	N/A	N/A	87.56	6.732	2.595	0.0296		
18	Calcium (m-60)	18	0	18	0	0.00%	N/A	N/A	87.28	6.418	2.533	0.029		
19	Calcium (m-61)	18	0	18	0	0.00%	N/A	N/A	89.89	5.046	2.246	0.025		
20	Chloride (m-54)	18	0	18	0	0.00%	N/A	N/A	1506	6438	80.24	0.0533		
21	Chloride (m-59)	18	0	18	0	0.00%	N/A	N/A	1344	4967	70.48	0.0524		
22	Chloride (m-60)	18	0	18	0	0.00%	N/A	N/A	1383	2941	54.23	0.0392		
23	Chloride (m-61)	18	0	18	0	0.00%	N/A	N/A	1394	13497	116.2	0.0833		
24	Fluoride (m-54)	18	0	18	0	0.00%	N/A	N/A	1.353	0.00367	0.0606	0.0448		
25	Fluoride (m-59)	18	0	18	0	0.00%	N/A	N/A	1.383	0.00382	0.0618	0.0447		
26	Fluoride (m-60)	18	0	18	0	0.00%	N/A	N/A	1.439	0.0031	0.0557	0.0387		
27	Fluoride (m-61)	18	0	18	0	0.00%	N/A	N/A	1.422	0.00359	0.06	0.0422		
28	pH (m-54)	17	1	17	0	0.00%	N/A	N/A	7.571	0.0184	0.136	0.0179		
29	pH (m-59)	17	1	17	0	0.00%	N/A	N/A	7.694	0.0253	0.159	0.0207		
30	pH (m-60)	17	1	17	0	0.00%	N/A	N/A	7.685	0.0141	0.119	0.0154		
31	pH (m-61)	17	1	17	0	0.00%	N/A	N/A	7.665	0.0339	0.184	0.024		
32	Sulfate (m-54)	18	0	18	0	0.00%	N/A	N/A	361.1	151.6	12.31	0.0341		
33	Sulfate (m-59)	18	0	18	0	0.00%	N/A	N/A	348.3	108.8	10.43	0.0299		
34	Sulfate (m-60)	18	0	18	0	0.00%	N/A	N/A	357.2	224.2	14.97	0.0419		
35	Sulfate (m-61)	18	0	18	0	0.00%	N/A	N/A	361.7	391.2	19.78	0.0547		
36	TDS (m-54)	18	0	18	0	0.00%	N/A	N/A	3033	11765	108.5	0.0358		
37	TDS (m-59)	18	0	18	0	0.00%	N/A	N/A	2717	9706	98.52	0.0363		
38	TDS (m-60)	18	0	18	0	0.00%	N/A	N/A	2792	8897	94.32	0.0338		
39	TDS (m-61)	18	0	18	0	0.00%	N/A	N/A	2806	11144	105.6	0.0376		
40														
41	General Statistics for Raw Data Sets using Detected Data Only													
42														
43	Variable	NumObs	# Missing	Minimum	Maximum	Mean	Median	Var	SD	MAD/0.675	Skewness	CV		
44	Boron (m-54)	18	0	0.49	0.56	0.519	0.52	3.1634E-4	0.0178	0.0148	0.682	0.0343		
45	Boron (m-59)	18	0	0.48	0.53	0.496	0.495	1.8987E-4	0.0138	0.00741	0.954	0.0278		
46	Boron (m-60)	18	0	0.475	0.54	0.511	0.51	2.6928E-4	0.0164	0.0148	-0.21	0.0321		
47	Boron (m-61)	18	0	0.48	0.52	0.498	0.5	1.4412E-4	0.012	0.0148	0.127	0.0241		
48	Calcium (m-54)	18	0	95	110	99.22	100	10.54	3.246	0.741	2.029	0.0327		
49	Calcium (m-59)	18	0	84	93	87.56	87.5	6.732	2.595	2.224	0.554	0.0296		
50	Calcium (m-60)	18	0	83	92	87.28	87.5	6.418	2.533	2.595	0.11	0.029		
51	Calcium (m-61)	18	0	86	94	89.89	90	5.046	2.246	2.965	0.0153	0.025		
52	Chloride (m-54)	18	0	1300	1600	1506	1500	6438	80.24	0	-0.875	0.0533		

	A	B	C	D	E	F	G	H	I	J	K	L	M
53	Chloride (m-59)		18	0	1200	1400	1344	1400	4967	70.48	0	-0.915	0.0524
54	Chloride (m-60)		18	0	1300	1500	1383	1400	2941	54.23	0	-0.173	0.0392
55	Chloride (m-61)		18	0	1100	1700	1394	1400	13497	116.2	0	0.119	0.0833
56	Fluoride (m-54)		18	0	1.2	1.4	1.353	1.375	0.00367	0.0606	0.0371	-1.235	0.0448
57	Fluoride (m-59)		18	0	1.3	1.5	1.383	1.4	0.00382	0.0618	0	0.0933	0.0447
58	Fluoride (m-60)		18	0	1.3	1.5	1.439	1.45	0.0031	0.0557	0.0741	-0.656	0.0387
59	Fluoride (m-61)		18	0	1.3	1.5	1.422	1.4	0.00359	0.06	0.0741	-0.0834	0.0422
60	pH (m-54)		17	1	7.34	7.8	7.571	7.6	0.0184	0.136	0.148	-0.148	0.0179
61	pH (m-59)		17	1	7.5	8.1	7.694	7.7	0.0253	0.159	0.148	0.985	0.0207
62	pH (m-60)		17	1	7.5	7.9	7.685	7.7	0.0141	0.119	0.148	0.0409	0.0154
63	pH (m-61)		17	1	7.22	8	7.665	7.7	0.0339	0.184	0.148	-0.486	0.024
64	Sulfate (m-54)		18	0	340	380	361.1	360	151.6	12.31	14.83	0.191	0.0341
65	Sulfate (m-59)		18	0	330	370	348.3	350	108.8	10.43	14.83	0.0194	0.0299
66	Sulfate (m-60)		18	0	340	410	357.2	350	224.2	14.97	3.706	2.783	0.0419
67	Sulfate (m-61)		18	0	340	420	361.7	360	391.2	19.78	14.83	1.639	0.0547
68	TDS (m-54)		18	0	2900	3200	3033	3000	11765	108.5	148.3	0.173	0.0358
69	TDS (m-59)		18	0	2500	2900	2717	2700	9706	98.52	0	-0.784	0.0363
70	TDS (m-60)		18	0	2600	3000	2792	2800	8897	94.32	0	-0.263	0.0338
71	TDS (m-61)		18	0	2600	3000	2806	2800	11144	105.6	148.3	0.216	0.0376
72													
73	Percentiles using all Detects (Ds) and Non-Detects (NDs)												
74													
75	Variable		NumObs	# Missing	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
76	Boron (m-54)		18	0	0.5	0.504	0.51	0.52	0.53	0.53	0.536	0.552	0.558
77	Boron (m-59)		18	0	0.48	0.484	0.49	0.495	0.5	0.5	0.513	0.522	0.528
78	Boron (m-60)		18	0	0.497	0.5	0.5	0.51	0.524	0.528	0.53	0.532	0.538
79	Boron (m-61)		18	0	0.48	0.49	0.49	0.5	0.5	0.506	0.513	0.52	0.52
80	Calcium (m-54)		18	0	95.7	97	97.25	100	100	100	100	101.5	108.3
81	Calcium (m-59)		18	0	84.7	85.4	86	87.5	89	89.6	90.6	92.15	92.83
82	Calcium (m-60)		18	0	84	85.2	85.63	87.5	89	89.3	90.3	91.15	91.83
83	Calcium (m-61)		18	0	87	88	88	90	91.75	92	92.3	93.15	93.83
84	Chloride (m-54)		18	0	1400	1500	1500	1500	1575	1600	1600	1600	1600
85	Chloride (m-59)		18	0	1270	1300	1300	1400	1400	1400	1400	1400	1400
86	Chloride (m-60)		18	0	1300	1320	1363	1400	1400	1400	1415	1458	1492
87	Chloride (m-61)		18	0	1300	1340	1400	1400	1400	1400	1500	1530	1666
88	Fluoride (m-54)		18	0	1.285	1.3	1.313	1.375	1.4	1.4	1.4	1.4	1.4
89	Fluoride (m-59)		18	0	1.3	1.3	1.325	1.4	1.4	1.4	1.43	1.5	1.5
90	Fluoride (m-60)		18	0	1.4	1.4	1.4	1.45	1.5	1.5	1.5	1.5	1.5
91	Fluoride (m-61)		18	0	1.35	1.4	1.4	1.4	1.488	1.5	1.5	1.5	1.5
92	pH (m-54)		17	1	7.4	7.42	7.5	7.6	7.7	7.7	7.7	7.72	7.784
93	pH (m-59)		17	1	7.518	7.576	7.6	7.7	7.8	7.8	7.84	7.94	8.068
94	pH (m-60)		17	1	7.536	7.6	7.6	7.7	7.8	7.8	7.812	7.844	7.889
95	pH (m-61)		17	1	7.5	7.518	7.59	7.7	7.8	7.8	7.84	7.92	7.984
96	Sulfate (m-54)		18	0	350	350	350	360	370	370	380	380	380
97	Sulfate (m-59)		18	0	337	340	340	350	350	356	360	361.5	368.3
98	Sulfate (m-60)		18	0	350	350	350	350	360	360	366.5	376	403.2
99	Sulfate (m-61)		18	0	340	350	350	360	367.5	370	383	394.5	414.9
100	TDS (m-54)		18	0	2900	2900	2925	3000	3100	3100	3200	3200	3200
101	TDS (m-59)		18	0	2640	2700	2700	2700	2800	2800	2800	2815	2883
102	TDS (m-60)		18	0	2670	2770	2800	2800	2800	2800	2900	2915	2983
103	TDS (m-61)		18	0	2700	2700	2725	2800	2875	2900	2930	3000	3000

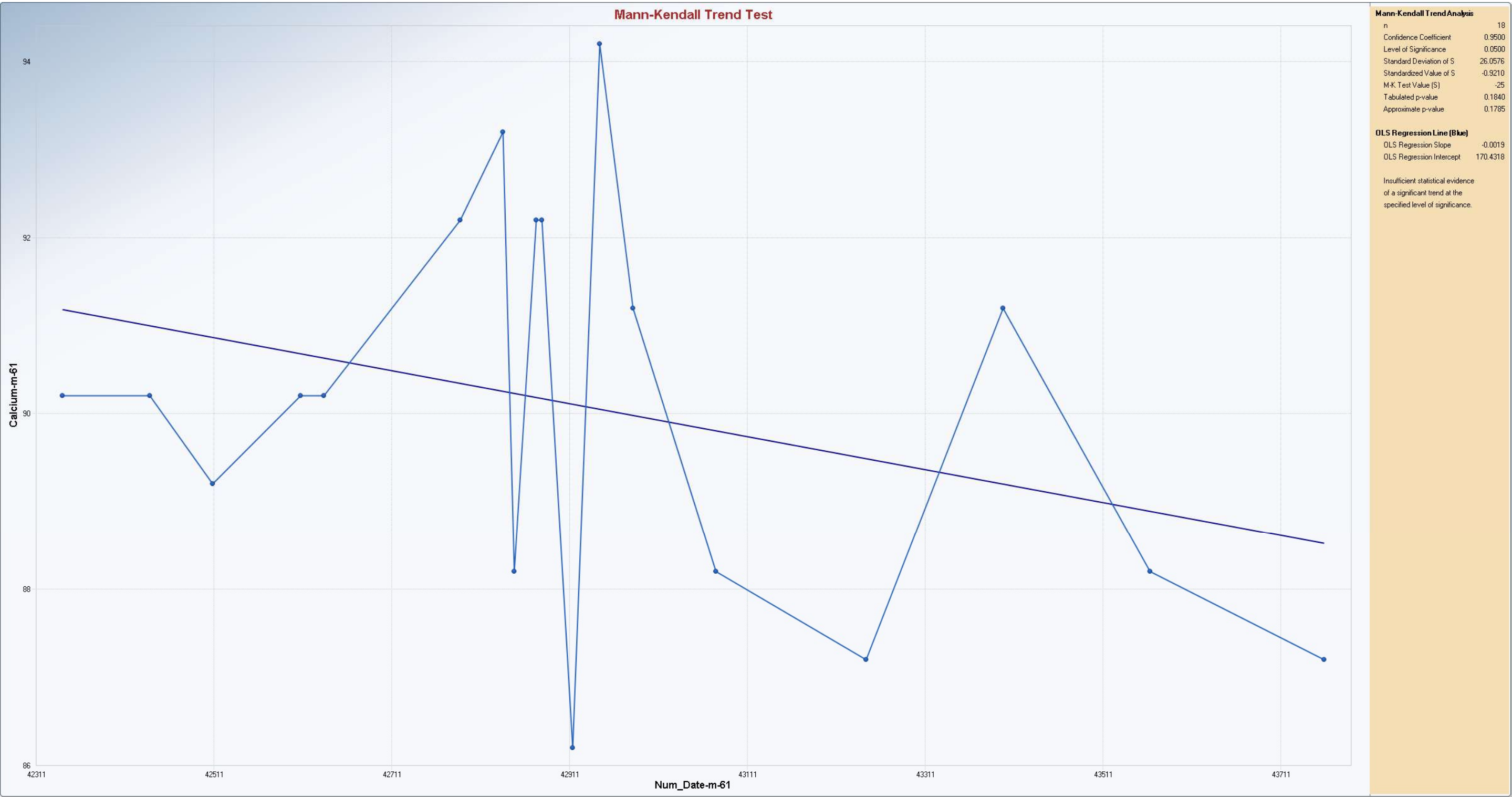








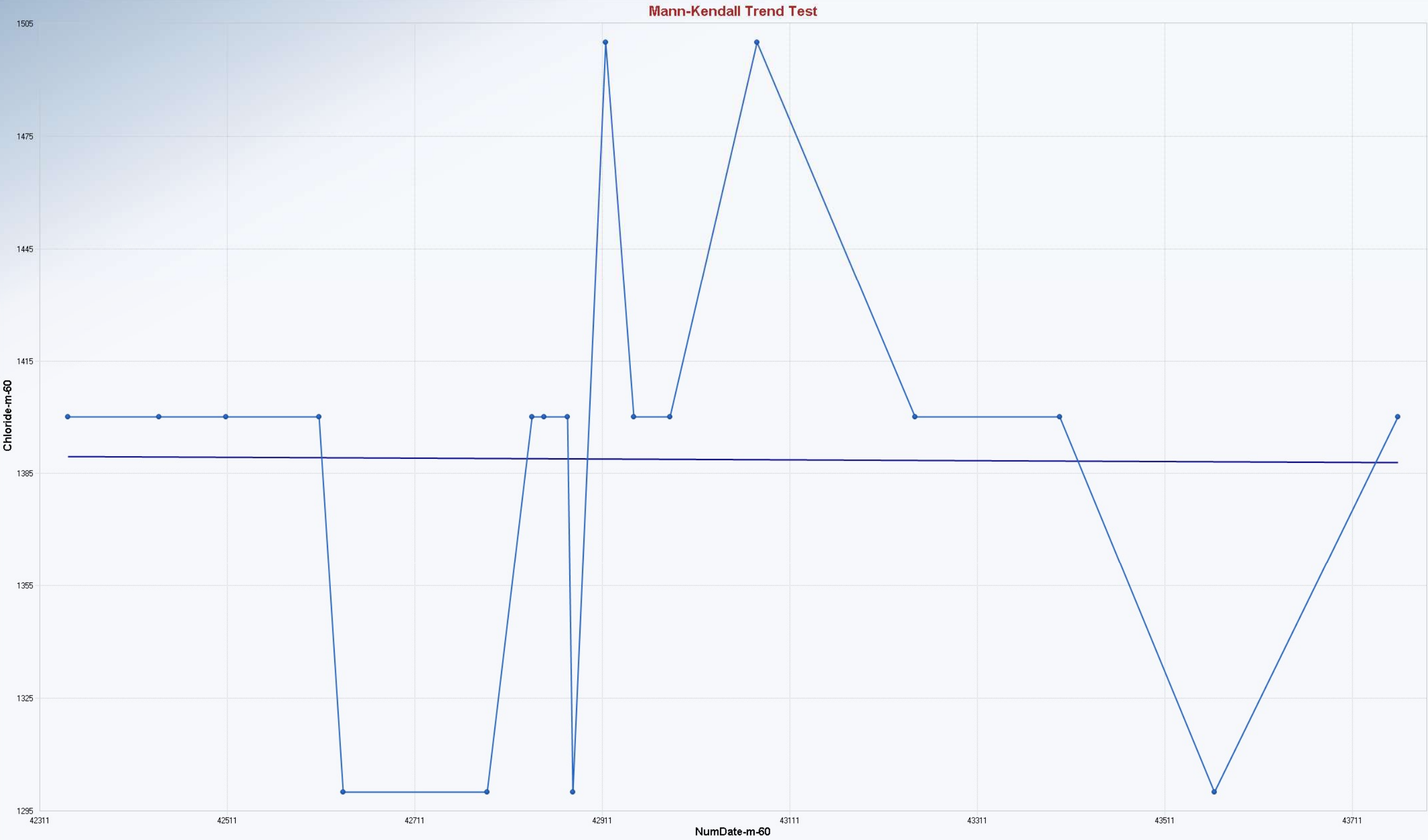






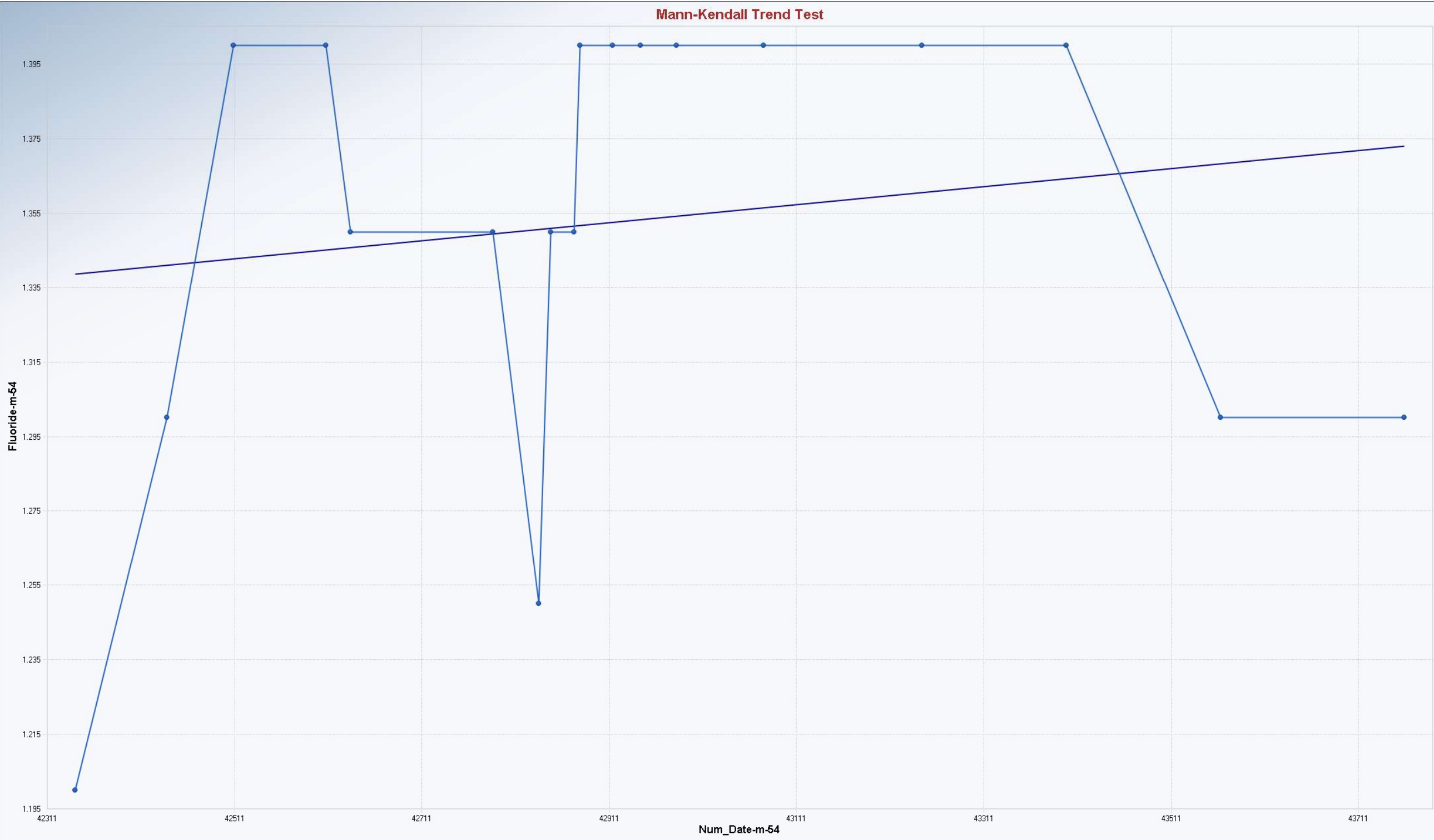
Mann-Kendall Trend Analysis	
n	18
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	23.5443
Standardized Value of S	-0.4247
M-K Test Value (S)	-11
Tabulated p-value	0.3540
Approximate p-value	0.3355
OLS Regression Line (Blue)	
OLS Regression Slope	-0.0323
OLS Regression Intercept	2,891.8782
Insufficient statistical evidence of a significant trend at the specified level of significance.	

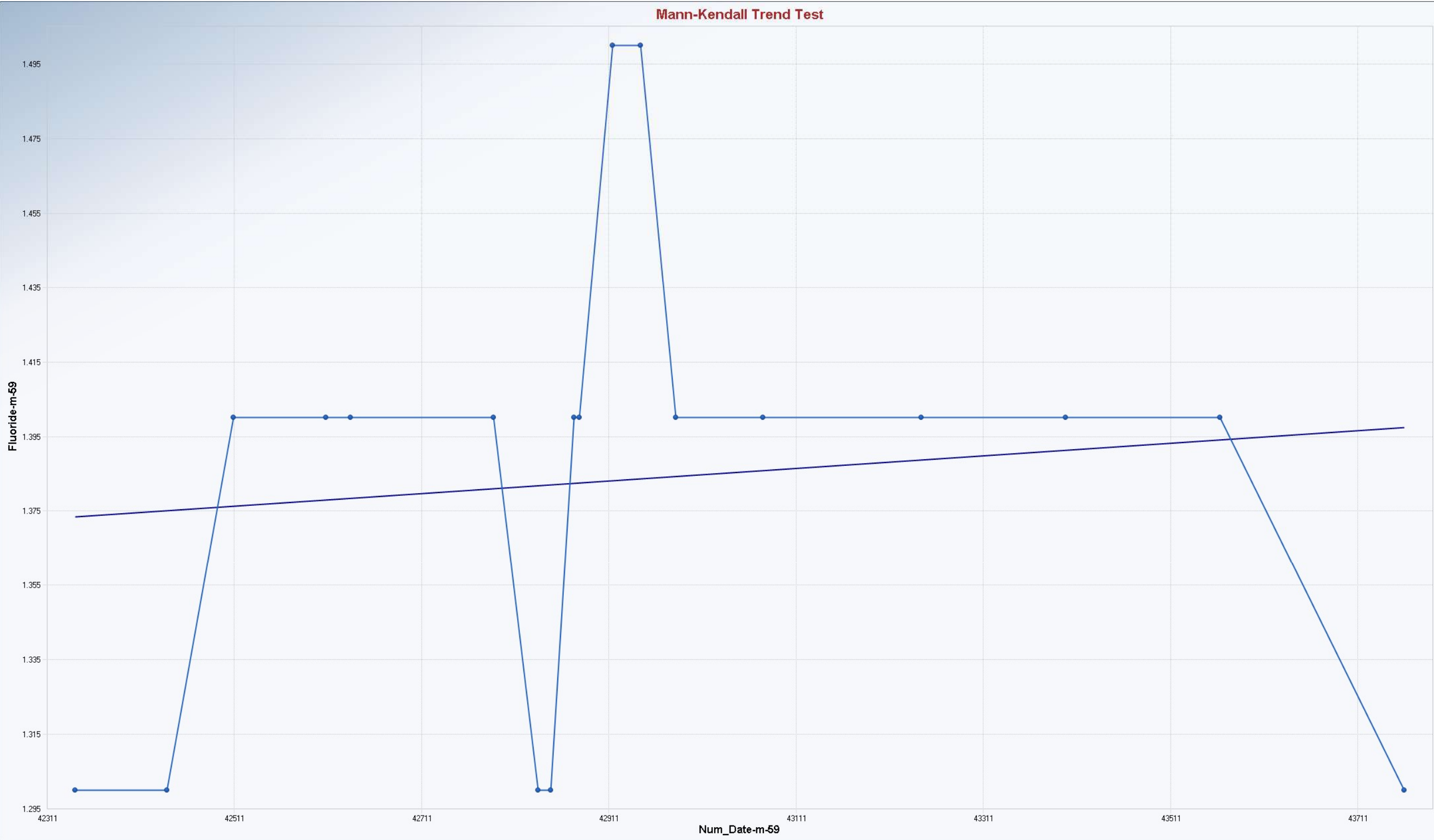




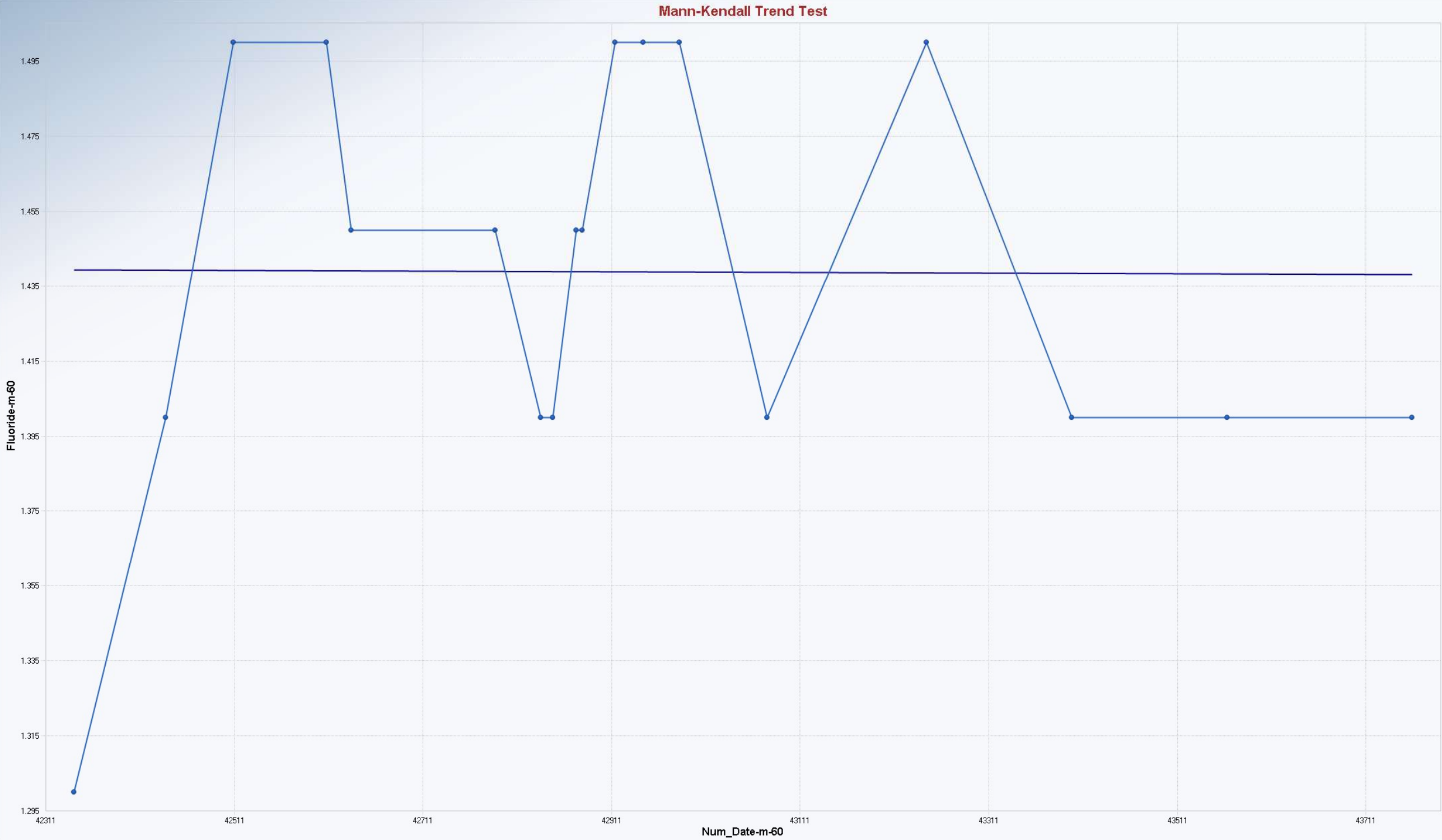
Mann-Kendall Trend Analysis	
n	18
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	21.7868
Standardized Value of S	0.3213
M-K Test Value (S)	8
Tabulated p-value	0.3830
Approximate p-value	0.3740
OLS Regression Line (Blue)	
OLS Regression Slope	-0.0011
OLS Regression Intercept	1,435.3905
Insufficient statistical evidence of a significant trend at the specified level of significance.	



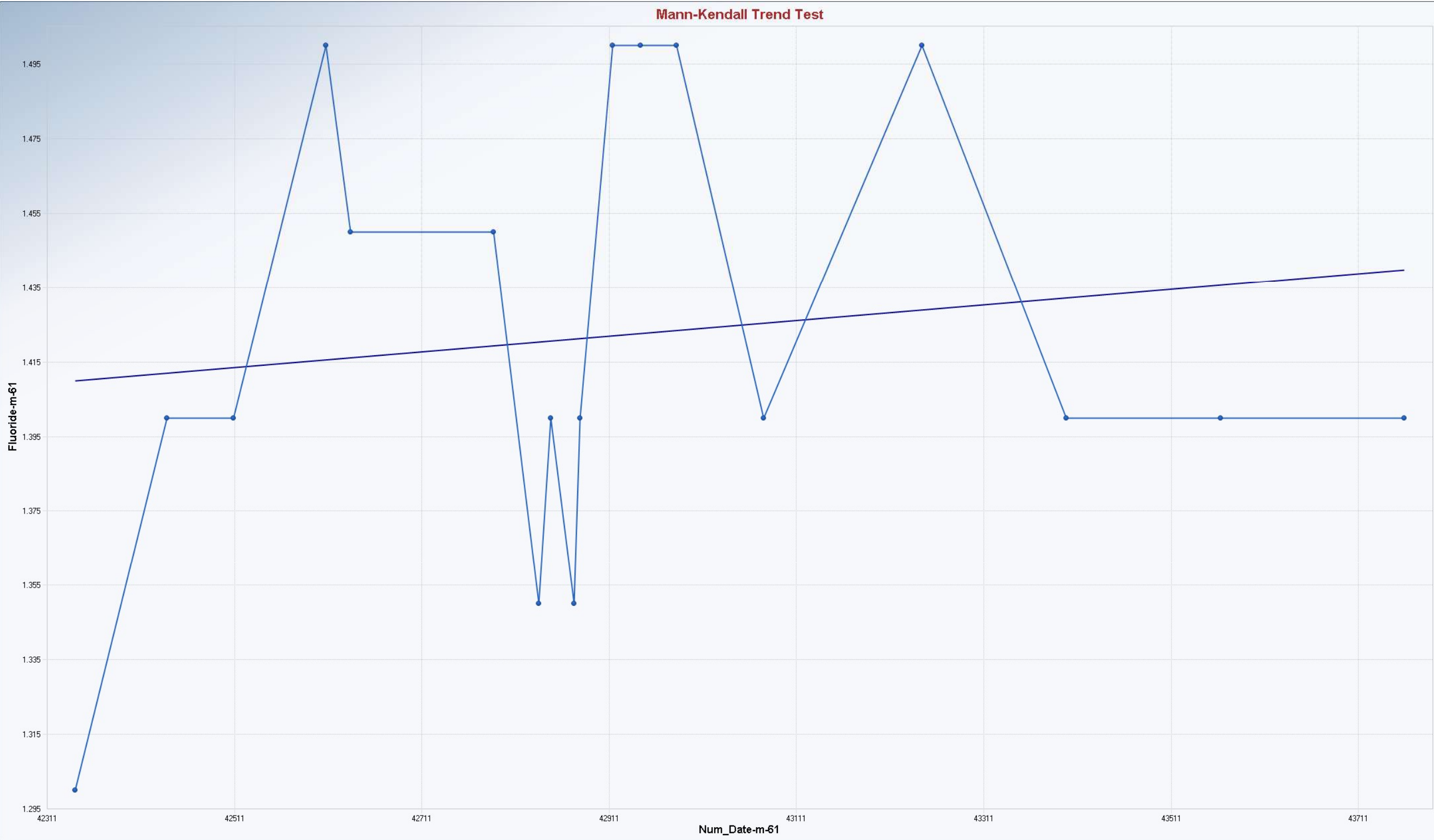




Mann-Kendall Trend Analysis	
n	18
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	22.8546
Standardized Value of S	0.9626
M-K Test Value (S)	23
Tabulated p-value	0.2050
Approximate p-value	0.1679
OLS Regression Line (Blue)	
OLS Regression Slope	0.0000
OLS Regression Intercept	0.6616
Insufficient statistical evidence of a significant trend at the specified level of significance.	



Mann-Kendall Trend Analysis	
n	18
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	24.8126
Standardized Value of S	0.0000
M-K Test Value (S)	1
Tabulated p-value	0.5000
Approximate p-value	0.5000
OLS Regression Line (Blue)	
OLS Regression Slope	0.0000
OLS Regression Intercept	1.4730
Insufficient statistical evidence of a significant trend at the specified level of significance.	

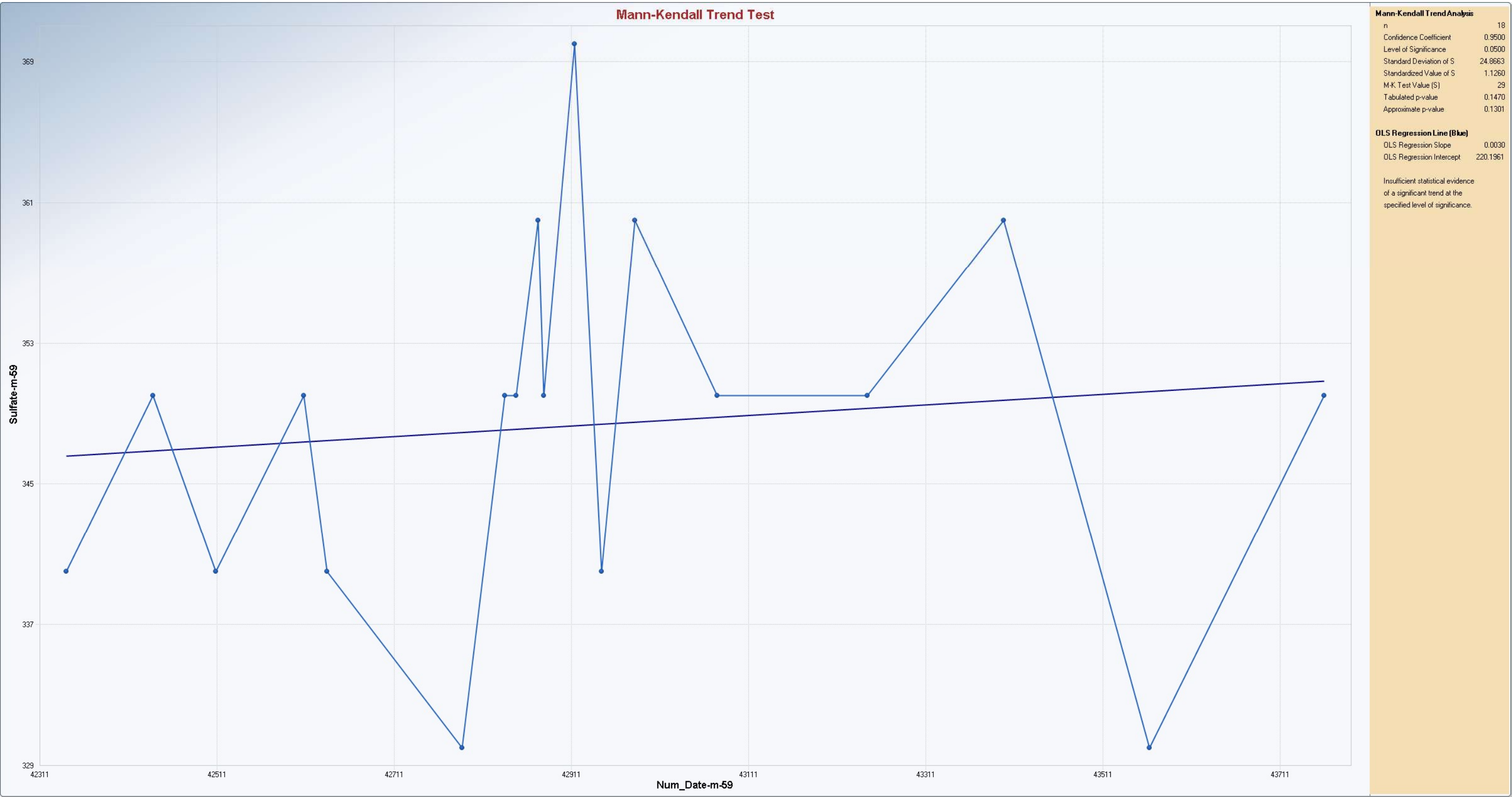


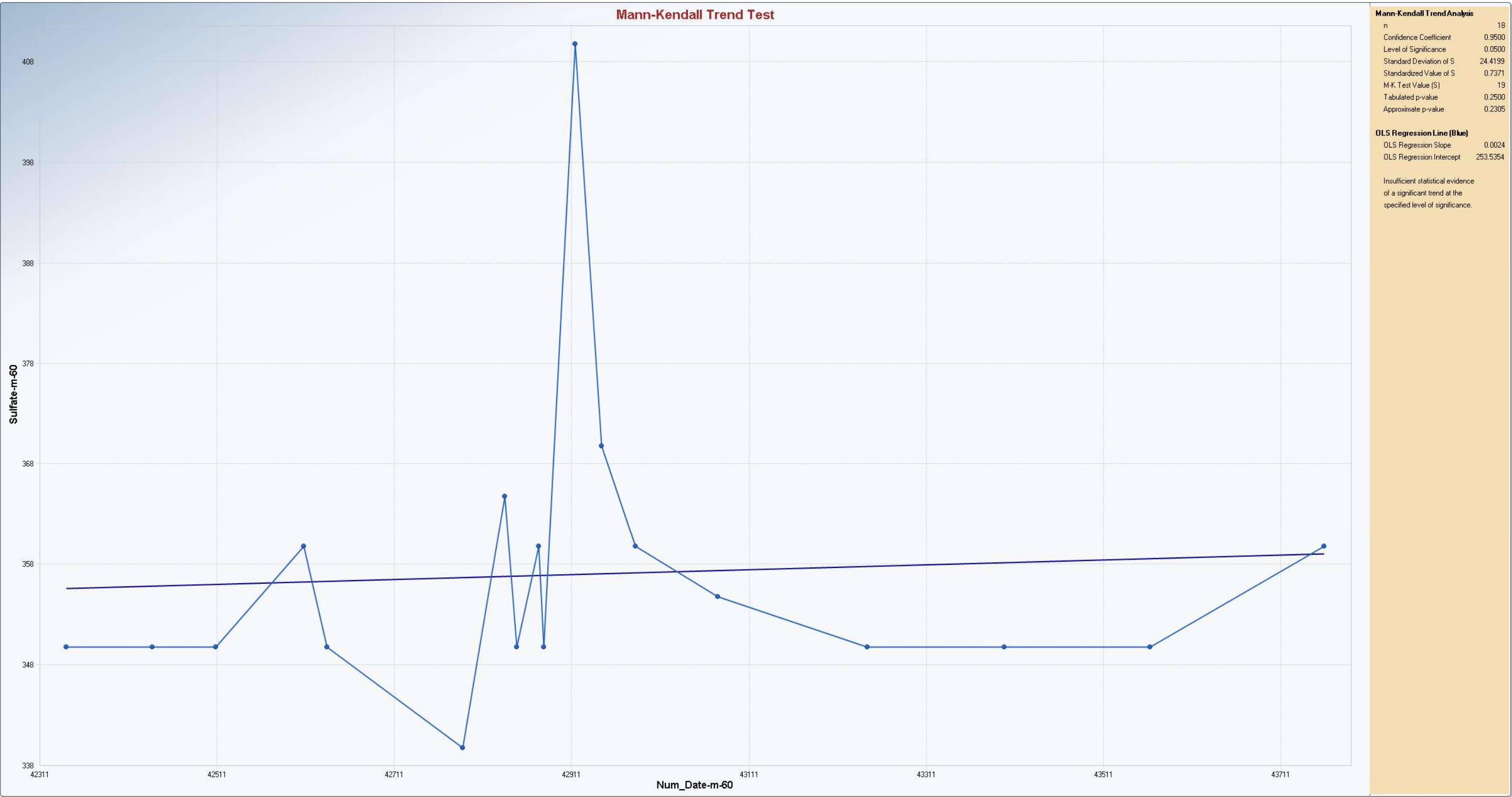
Mann-Kendall Trend Analysis	
n	18
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	24.7588
Standardized Value of S	0.8078
M-K Test Value (S)	21
Tabulated p-value	0.2270
Approximate p-value	0.2096
OLS Regression Line (Blue)	
OLS Regression Slope	0.0000
OLS Regression Intercept	0.5161
Insufficient statistical evidence of a significant trend at the specified level of significance.	

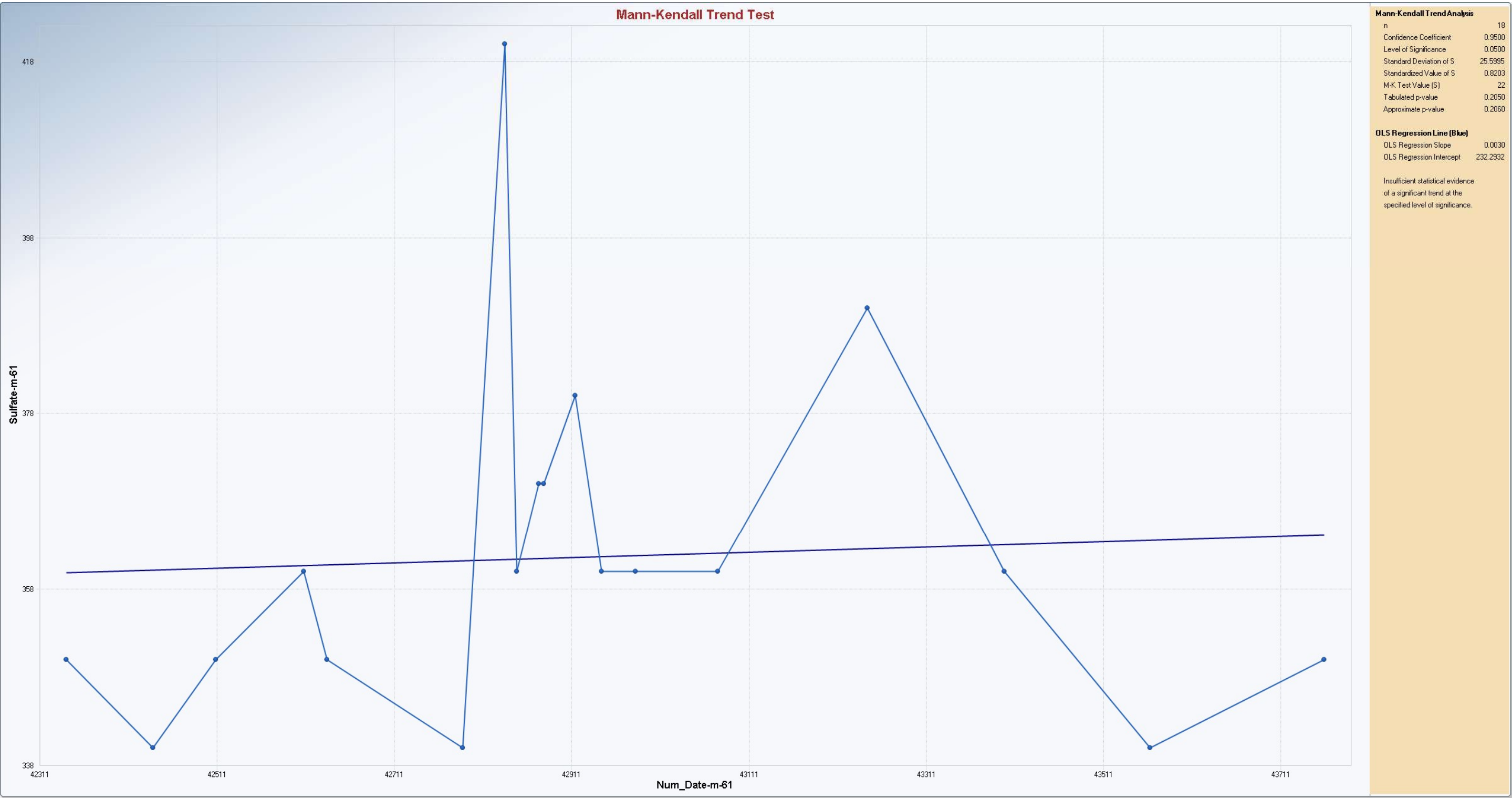


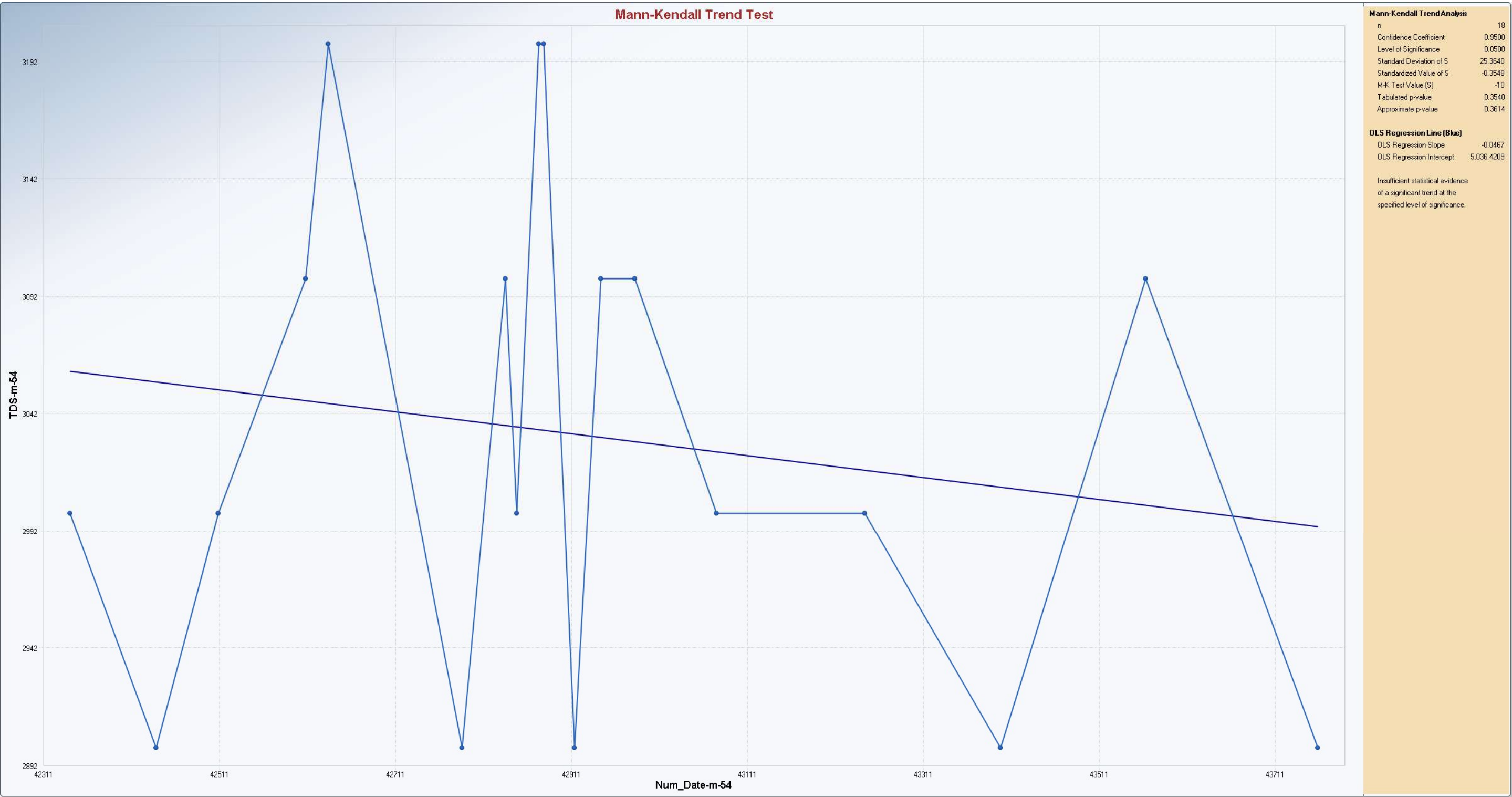


Mann-Kendall Trend Analysis	
n	18
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	25.4493
Standardized Value of S	-1.1788
M-K Test Value (S)	-31
Tabulated p-value	0.1300
Approximate p-value	0.1192
OLS Regression Line (Blue)	
OLS Regression Slope	-0.0135
OLS Regression Intercept	940.2519
Insufficient statistical evidence of a significant trend at the specified level of significance.	



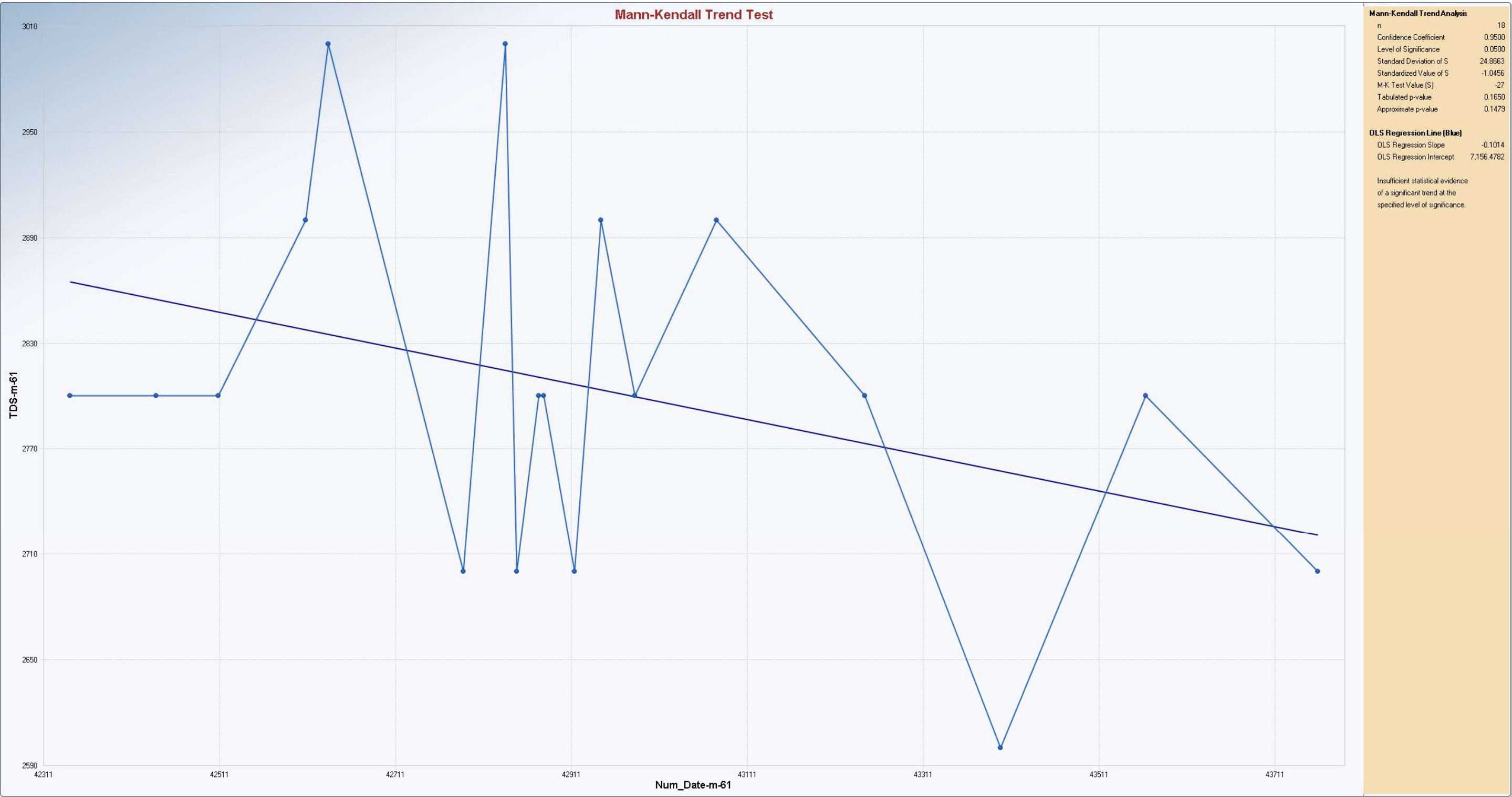










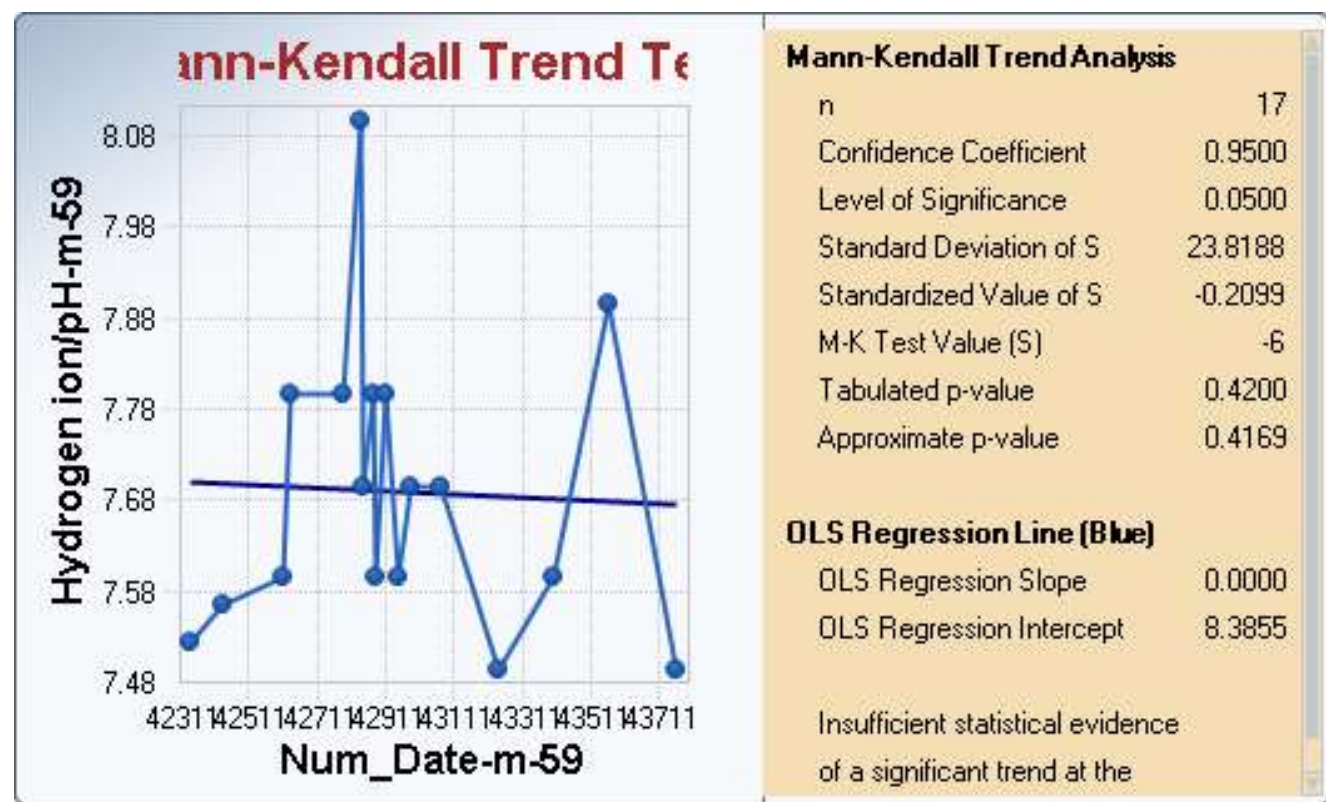
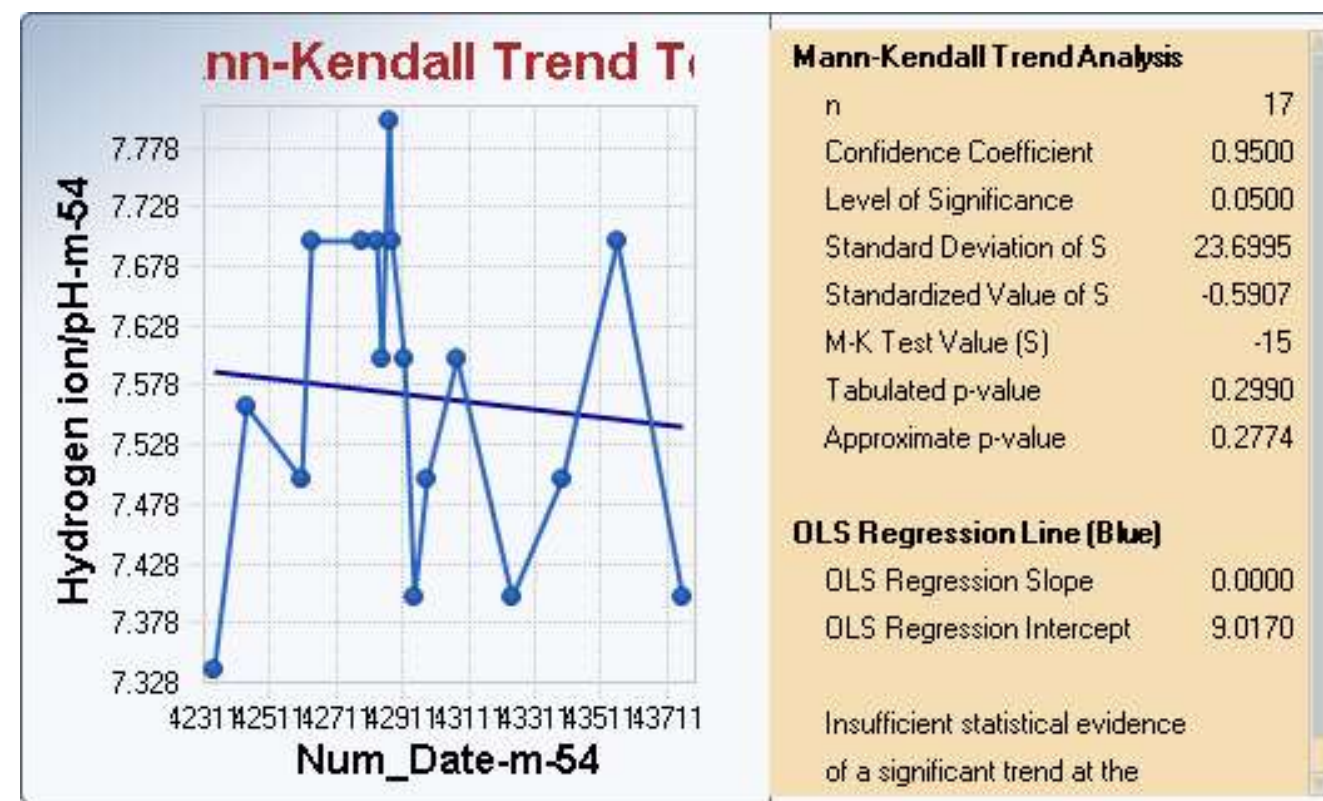
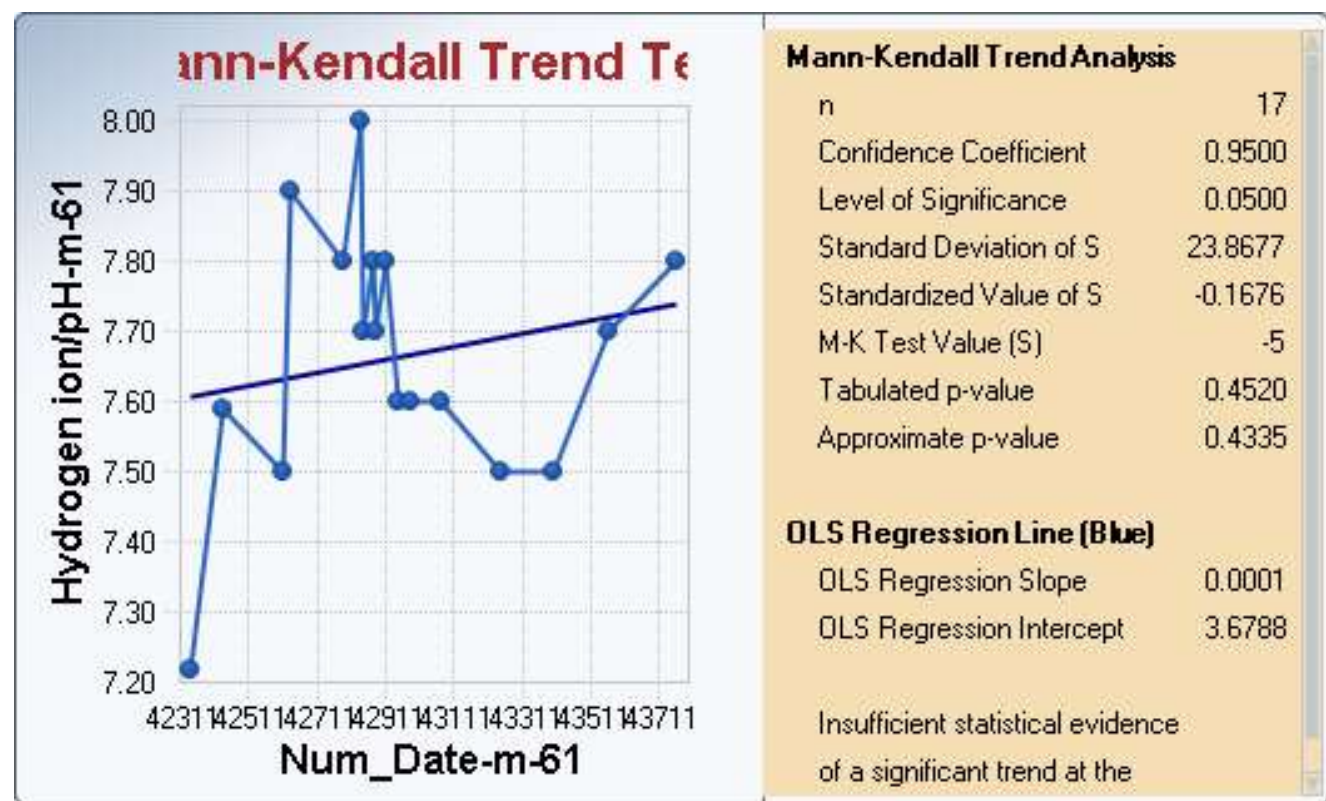




Mann-Kendall Trend Analysis	
n	18
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	25.8328
Standardized Value of S	-1.3549
M-K Test Value (S)	-36
Tabulated p-value	0.0080
Approximate p-value	0.0877
OLS Regression Line (Blue)	
OLS Regression Slope	0.0000
OLS Regression Intercept	1.1571
Statistically significant evidence of a decreasing trend at the specified level of significance.	



Mann-Kendall Trend Analysis	
n	18
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	25.3640
Standardized Value of S	-0.2760
M-K Test Value (S)	-8
Tabulated p-value	0.3830
Approximate p-value	0.3913
OLS Regression Line (Blue)	
OLS Regression Slope	0.0000
OLS Regression Intercept	0.7372
Insufficient statistical evidence of a significant trend at the specified level of significance.	



	A	B	C	D	E	F	G	H	I	J	K	L
1				Mann-Kendall Trend Test Analysis								
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.13/30/2020 9:46:09 PM								
4	From File			20200330APS_BAM_DetMon_Oct2019_NoDups.xls								
5	Full Precision			OFF								
6	Confidence Coefficient			0.95								
7	Level of Significance			0.05								
8												
9	Boron-m-54											
10												
11	General Statistics											
12	Number of Events Reported (m)			18								
13	Number of Missing Events			0								
14	Number or Reported Events Used			18								
15	Number Values Reported (n)			18								
16	Minimum			0.49								
17	Maximum			0.56								
18	Mean			0.519								
19	Geometric Mean			0.519								
20	Median			0.52								
21	Standard Deviation			0.0178								
22	Coefficient of Variation			0.0343								
23												
24	Mann-Kendall Test											
25	M-K Test Value (S)			-36								
26	Tabulated p-value			0.008								
27	Standard Deviation of S			25.83								
28	Standardized Value of S			-1.355								
29	Approximate p-value			0.0877								
30												
31	Statistically significant evidence of a decreasing											
32	trend at the specified level of significance.											
33	Boron-m-59											
34												
35	General Statistics											
36	Number of Events Reported (m)			18								
37	Number of Missing Events			0								
38	Number or Reported Events Used			18								
39	Number Values Reported (n)			18								
40	Minimum			0.48								
41	Maximum			0.53								
42	Mean			0.496								
43	Geometric Mean			0.496								
44	Median			0.495								
45	Standard Deviation			0.0138								
46	Coefficient of Variation			0.0278								
47												
48	Mann-Kendall Test											
49	M-K Test Value (S)			-8								
50	Tabulated p-value			0.383								

	A	B	C	D	E	F	G	H	I	J	K	L
51			Standard Deviation of S		25.36							
52			Standardized Value of S		-0.276							
53			Approximate p-value		0.391							
54												
55			Insufficient evidence to identify a significant									
56			trend at the specified level of significance.									
57			Boron-m-60									
58												
59			General Statistics									
60			Number of Events Reported (m)		18							
61			Number of Missing Events		0							
62			Number or Reported Events Used		18							
63			Number Values Reported (n)		18							
64			Minimum		0.475							
65			Maximum		0.54							
66			Mean		0.511							
67			Geometric Mean		0.511							
68			Median		0.51							
69			Standard Deviation		0.0164							
70			Coefficient of Variation		0.0321							
71												
72			Mann-Kendall Test									
73			M-K Test Value (S)		-29							
74			Tabulated p-value		0.147							
75			Standard Deviation of S		26.06							
76			Standardized Value of S		-1.075							
77			Approximate p-value		0.141							
78												
79			Insufficient evidence to identify a significant									
80			trend at the specified level of significance.									
81			Boron-m-61									
82												
83			General Statistics									
84			Number of Events Reported (m)		18							
85			Number of Missing Events		0							
86			Number or Reported Events Used		18							
87			Number Values Reported (n)		18							
88			Minimum		0.48							
89			Maximum		0.52							
90			Mean		0.498							
91			Geometric Mean		0.498							
92			Median		0.5							
93			Standard Deviation		0.012							
94			Coefficient of Variation		0.0241							
95												
96			Mann-Kendall Test									
97			M-K Test Value (S)		-31							
98			Tabulated p-value		0.13							
99			Standard Deviation of S		24.95							
100			Standardized Value of S		-1.203							

	A	B	C	D	E	F	G	H	I	J	K	L
101	Approximate p-value				0.115							
102												
103	Insufficient evidence to identify a significant											
104	trend at the specified level of significance.											

	A	B	C	D	E	F	G	H	I	J	K	L
1				Mann-Kendall Trend Test Analysis								
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.13/30/2020 9:51:26 PM								
4	From File			20200330APS_BAM_DetMon_Oct2019_NoDups.xls								
5	Full Precision			OFF								
6	Confidence Coefficient			0.95								
7	Level of Significance			0.05								
8												
9	Calcium-m-54											
10												
11	General Statistics											
12	Number of Events Reported (m)			18								
13	Number of Missing Events			0								
14	Number or Reported Events Used			18								
15	Number Values Reported (n)			18								
16	Minimum			95								
17	Maximum			110								
18	Mean			99.22								
19	Geometric Mean			99.17								
20	Median			100								
21	Standard Deviation			3.246								
22	Coefficient of Variation			0.0327								
23												
24	Mann-Kendall Test											
25	M-K Test Value (S)			-54								
26	Tabulated p-value			0.02								
27	Standard Deviation of S			24.54								
28	Standardized Value of S			-2.16								
29	Approximate p-value			0.0154								
30												
31	Statistically significant evidence of a decreasing											
32	trend at the specified level of significance.											
33	Calcium-m-59											
34												
35	General Statistics											
36	Number of Events Reported (m)			18								
37	Number of Missing Events			0								
38	Number or Reported Events Used			18								
39	Number Values Reported (n)			18								
40	Minimum			84								
41	Maximum			93								
42	Mean			87.56								
43	Geometric Mean			87.52								
44	Median			87.5								
45	Standard Deviation			2.595								
46	Coefficient of Variation			0.0296								
47												
48	Mann-Kendall Test											
49	M-K Test Value (S)			-14								
50	Tabulated p-value			0.3								

	A	B	C	D	E	F	G	H	I	J	K	L
51			Standard Deviation of S		26.09							
52			Standardized Value of S		-0.498							
53			Approximate p-value		0.309							
54												
55			Insufficient evidence to identify a significant									
56			trend at the specified level of significance.									
57			Calcium-m-60									
58												
59			General Statistics									
60			Number of Events Reported (m)		18							
61			Number of Missing Events		0							
62			Number or Reported Events Used		18							
63			Number Values Reported (n)		18							
64			Minimum		83							
65			Maximum		92							
66			Mean		87.28							
67			Geometric Mean		87.24							
68			Median		87.5							
69			Standard Deviation		2.533							
70			Coefficient of Variation		0.029							
71												
72			Mann-Kendall Test									
73			M-K Test Value (S)		-49							
74			Tabulated p-value		0.034							
75			Standard Deviation of S		26.22							
76			Standardized Value of S		-1.83							
77			Approximate p-value		0.0336							
78												
79			Statistically significant evidence of a decreasing									
80			trend at the specified level of significance.									
81			Calcium-m-61									
82												
83			General Statistics									
84			Number of Events Reported (m)		18							
85			Number of Missing Events		0							
86			Number or Reported Events Used		18							
87			Number Values Reported (n)		18							
88			Minimum		86							
89			Maximum		94							
90			Mean		89.89							
91			Geometric Mean		89.86							
92			Median		90							
93			Standard Deviation		2.246							
94			Coefficient of Variation		0.025							
95												
96			Mann-Kendall Test									
97			M-K Test Value (S)		-25							
98			Tabulated p-value		0.184							
99			Standard Deviation of S		26.06							
100			Standardized Value of S		-0.921							

	A	B	C	D	E	F	G	H	I	J	K	L
101	Approximate p-value				0.179							
102												
103	Insufficient evidence to identify a significant											
104	trend at the specified level of significance.											

	A	B	C	D	E	F	G	H	I	J	K	L
1				Mann-Kendall Trend Test Analysis								
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.13/30/2020 9:55:42 PM								
4	From File			20200330APS_BAM_DetMon_Oct2019_NoDups.xls								
5	Full Precision			OFF								
6	Confidence Coefficient			0.95								
7	Level of Significance			0.05								
8												
9	Chloride-m-54											
10												
11	General Statistics											
12	Number of Events Reported (m)			18								
13	Number of Missing Events			0								
14	Number or Reported Events Used			18								
15	Number Values Reported (n)			18								
16	Minimum			1300								
17	Maximum			1600								
18	Mean			1506								
19	Geometric Mean			1503								
20	Median			1500								
21	Standard Deviation			80.24								
22	Coefficient of Variation			0.0533								
23												
24	Mann-Kendall Test											
25	M-K Test Value (S)			-11								
26	Tabulated p-value			0.354								
27	Standard Deviation of S			23.54								
28	Standardized Value of S			-0.425								
29	Approximate p-value			0.336								
30												
31	Insufficient evidence to identify a significant											
32	trend at the specified level of significance.											
33	Chloride-m-59											
34												
35	General Statistics											
36	Number of Events Reported (m)			18								
37	Number of Missing Events			0								
38	Number or Reported Events Used			18								
39	Number Values Reported (n)			18								
40	Minimum			1200								
41	Maximum			1400								
42	Mean			1344								
43	Geometric Mean			1343								
44	Median			1400								
45	Standard Deviation			70.48								
46	Coefficient of Variation			0.0524								
47												
48	Mann-Kendall Test											
49	M-K Test Value (S)			4								
50	Tabulated p-value			0.441								

	A	B	C	D	E	F	G	H	I	J	K	L
51	Standard Deviation of S				23.3							
52	Standardized Value of S				0.129							
53	Approximate p-value				0.449							
54												
55	Insufficient evidence to identify a significant											
56	trend at the specified level of significance.											
57	Chloride-m-60											
58												
59	General Statistics											
60	Number of Events Reported (m)				18							
61	Number of Missing Events				0							
62	Number or Reported Events Used				18							
63	Number Values Reported (n)				18							
64	Minimum				1300							
65	Maximum				1500							
66	Mean				1383							
67	Geometric Mean				1382							
68	Median				1400							
69	Standard Deviation				54.23							
70	Coefficient of Variation				0.0392							
71												
72	Mann-Kendall Test											
73	M-K Test Value (S)				10							
74	Tabulated p-value				0.354							
75	Standard Deviation of S				22.88							
76	Standardized Value of S				0.393							
77	Approximate p-value				0.347							
78												
79	Insufficient evidence to identify a significant											
80	trend at the specified level of significance.											
81	Chloride-m-61											
82												
83	General Statistics											
84	Number of Events Reported (m)				18							
85	Number of Missing Events				0							
86	Number or Reported Events Used				18							
87	Number Values Reported (n)				18							
88	Minimum				1100							
89	Maximum				1700							
90	Mean				1394							
91	Geometric Mean				1390							
92	Median				1400							
93	Standard Deviation				116.2							
94	Coefficient of Variation				0.0833							
95												
96	Mann-Kendall Test											
97	M-K Test Value (S)				0							
98	Tabulated p-value				0.5							
99	Standard Deviation of S				22.96							
100	Standardized Value of S				N/A							

	A	B	C	D	E	F	G	H	I	J	K	L
101	Approximate p-value				N/A							
102												
103	Insufficient evidence to identify a significant trend at the specified level of significance.											
104												

	A	B	C	D	E	F	G	H	I	J	K	L
1				Mann-Kendall Trend Test Analysis								
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.13/30/2020 9:59:37 PM								
4	From File			20200330APS_BAM_DetMon_Oct2019_NoDups.xls								
5	Full Precision			OFF								
6	Confidence Coefficient			0.95								
7	Level of Significance			0.05								
8												
9	Fluoride-m-54											
10												
11	General Statistics											
12	Number of Events Reported (m)			18								
13	Number of Missing Events			0								
14	Number or Reported Events Used			18								
15	Number Values Reported (n)			18								
16	Minimum			1.2								
17	Maximum			1.4								
18	Mean			1.353								
19	Geometric Mean			1.351								
20	Median			1.375								
21	Standard Deviation			0.0606								
22	Coefficient of Variation			0.0448								
23												
24	Mann-Kendall Test											
25	M-K Test Value (S)			30								
26	Tabulated p-value			0.13								
27	Standard Deviation of S			24.34								
28	Standardized Value of S			1.191								
29	Approximate p-value			0.117								
30												
31	Insufficient evidence to identify a significant											
32	trend at the specified level of significance.											
33	Fluoride-m-59											
34												
35	General Statistics											
36	Number of Events Reported (m)			18								
37	Number of Missing Events			0								
38	Number or Reported Events Used			18								
39	Number Values Reported (n)			18								
40	Minimum			1.3								
41	Maximum			1.5								
42	Mean			1.383								
43	Geometric Mean			1.382								
44	Median			1.4								
45	Standard Deviation			0.0618								
46	Coefficient of Variation			0.0447								
47												
48	Mann-Kendall Test											
49	M-K Test Value (S)			23								
50	Tabulated p-value			0.205								

	A	B	C	D	E	F	G	H	I	J	K	L
51			Standard Deviation of S		22.85							
52			Standardized Value of S		0.963							
53			Approximate p-value		0.168							
54												
55			Insufficient evidence to identify a significant trend at the specified level of significance.									
56												
57			Fluoride-m-60									
58												
59			General Statistics									
60			Number of Events Reported (m)		18							
61			Number of Missing Events		0							
62			Number or Reported Events Used		18							
63			Number Values Reported (n)		18							
64			Minimum		1.3							
65			Maximum		1.5							
66			Mean		1.439							
67			Geometric Mean		1.438							
68			Median		1.45							
69			Standard Deviation		0.0557							
70			Coefficient of Variation		0.0387							
71												
72			Mann-Kendall Test									
73			M-K Test Value (S)		1							
74			Tabulated p-value		0.5							
75			Standard Deviation of S		24.81							
76			Standardized Value of S		0							
77			Approximate p-value		0.5							
78												
79			Insufficient evidence to identify a significant trend at the specified level of significance.									
80												
81			Fluoride-m-61									
82												
83			General Statistics									
84			Number of Events Reported (m)		18							
85			Number of Missing Events		0							
86			Number or Reported Events Used		18							
87			Number Values Reported (n)		18							
88			Minimum		1.3							
89			Maximum		1.5							
90			Mean		1.422							
91			Geometric Mean		1.421							
92			Median		1.4							
93			Standard Deviation		0.06							
94			Coefficient of Variation		0.0422							
95												
96			Mann-Kendall Test									
97			M-K Test Value (S)		21							
98			Tabulated p-value		0.227							
99			Standard Deviation of S		24.76							
100			Standardized Value of S		0.808							

	A	B	C	D	E	F	G	H	I	J	K	L
101	Approximate p-value				0.21							
102												
103	Insufficient evidence to identify a significant											
104	trend at the specified level of significance.											

	A	B	C	D	E	F	G	H	I	J	K	L
1				Mann-Kendall Trend Test Analysis								
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.13/30/2020 10:04:15 PM								
4	From File			20200330APS_BAM_DetMon_Oct2019_NoDups.xls								
5	Full Precision			OFF								
6	Confidence Coefficient			0.95								
7	Level of Significance			0.05								
8												
9	Hydrogen ion/pH-m-54											
10												
11	General Statistics											
12	Number of Events Reported (m)			18								
13	Number of Missing Events			1								
14	Number or Reported Events Used			17								
15	Number Values Reported (n)			18								
16	Number Values Missing			1								
17	Number Values Used			17								
18	Minimum			7.34								
19	Maximum			7.8								
20	Mean			7.571								
21	Geometric Mean			7.569								
22	Median			7.6								
23	Standard Deviation			0.136								
24	Coefficient of Variation			0.0179								
25												
26	Mann-Kendall Test											
27	M-K Test Value (S)			-15								
28	Tabulated p-value			0.299								
29	Standard Deviation of S			23.7								
30	Standardized Value of S			-0.591								
31	Approximate p-value			0.277								
32												
33	Insufficient evidence to identify a significant											
34	trend at the specified level of significance.											
35	Hydrogen ion/pH-m-59											
36												
37	General Statistics											
38	Number of Events Reported (m)			18								
39	Number of Missing Events			1								
40	Number or Reported Events Used			17								
41	Number Values Reported (n)			18								
42	Number Values Missing			1								
43	Number Values Used			17								
44	Minimum			7.5								
45	Maximum			8.1								
46	Mean			7.694								
47	Geometric Mean			7.693								
48	Median			7.7								
49	Standard Deviation			0.159								
50	Coefficient of Variation			0.0207								

	A	B	C	D	E	F	G	H	I	J	K	L
51												
52	Mann-Kendall Test											
53	M-K Test Value (S)				-6							
54	Tabulated p-value				0.42							
55	Standard Deviation of S				23.82							
56	Standardized Value of S				-0.21							
57	Approximate p-value				0.417							
58												
59	Insufficient evidence to identify a significant											
60	trend at the specified level of significance.											
61	Hydrogen ion/pH-m-60											
62												
63	General Statistics											
64	Number of Events Reported (m)				18							
65	Number of Missing Events				1							
66	Number or Reported Events Used				17							
67	Number Values Reported (n)				18							
68	Number Values Missing				1							
69	Number Values Used				17							
70	Minimum				7.5							
71	Maximum				7.9							
72	Mean				7.685							
73	Geometric Mean				7.684							
74	Median				7.7							
75	Standard Deviation				0.119							
76	Coefficient of Variation				0.0154							
77												
78	Mann-Kendall Test											
79	M-K Test Value (S)				-38							
80	Tabulated p-value				0.064							
81	Standard Deviation of S				23.82							
82	Standardized Value of S				-1.553							
83	Approximate p-value				0.0602							
84												
85	Insufficient evidence to identify a significant											
86	trend at the specified level of significance.											
87	Hydrogen ion/pH-m-61											
88												
89	General Statistics											
90	Number of Events Reported (m)				18							
91	Number of Missing Events				1							
92	Number or Reported Events Used				17							
93	Number Values Reported (n)				18							
94	Number Values Missing				1							
95	Number Values Used				17							
96	Minimum				7.22							
97	Maximum				8							
98	Mean				7.665							
99	Geometric Mean				7.663							
100	Median				7.7							

	A	B	C	D	E	F	G	H	I	J	K	L
101	Standard Deviation				0.184							
102	Coefficient of Variation				0.024							
103												
104	Mann-Kendall Test											
105	M-K Test Value (S)				-5							
106	Tabulated p-value				0.452							
107	Standard Deviation of S				23.87							
108	Standardized Value of S				-0.168							
109	Approximate p-value				0.433							
110												
111	Insufficient evidence to identify a significant											
112	trend at the specified level of significance.											

	A	B	C	D	E	F	G	H	I	J	K	L
1				Mann-Kendall Trend Test Analysis								
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.13/30/2020 10:45:42 PM								
4	From File			20200330APS_BAM_DetMon_Oct2019_NoDups.xls								
5	Full Precision			OFF								
6	Confidence Coefficient			0.95								
7	Level of Significance			0.05								
8												
9	TDS-m-54											
10												
11	General Statistics											
12	Number of Events Reported (m)			18								
13	Number of Missing Events			0								
14	Number or Reported Events Used			18								
15	Number Values Reported (n)			18								
16	Minimum			2900								
17	Maximum			3200								
18	Mean			3033								
19	Geometric Mean			3032								
20	Median			3000								
21	Standard Deviation			108.5								
22	Coefficient of Variation			0.0358								
23												
24	Mann-Kendall Test											
25	M-K Test Value (S)			-10								
26	Tabulated p-value			0.354								
27	Standard Deviation of S			25.36								
28	Standardized Value of S			-0.355								
29	Approximate p-value			0.361								
30												
31	Insufficient evidence to identify a significant											
32	trend at the specified level of significance.											
33	TDS-m-59											
34												
35	General Statistics											
36	Number of Events Reported (m)			18								
37	Number of Missing Events			0								
38	Number or Reported Events Used			18								
39	Number Values Reported (n)			18								
40	Minimum			2500								
41	Maximum			2900								
42	Mean			2717								
43	Geometric Mean			2715								
44	Median			2700								
45	Standard Deviation			98.52								
46	Coefficient of Variation			0.0363								
47												
48	Mann-Kendall Test											
49	M-K Test Value (S)			-17								
50	Tabulated p-value			0.275								

	A	B	C	D	E	F	G	H	I	J	K	L
51			Standard Deviation of S		23.54							
52			Standardized Value of S		-0.68							
53			Approximate p-value		0.248							
54												
55			Insufficient evidence to identify a significant trend at the specified level of significance.									
56												
57			TDS-m-60									
58												
59			General Statistics									
60			Number of Events Reported (m)		18							
61			Number of Missing Events		0							
62			Number or Reported Events Used		18							
63			Number Values Reported (n)		18							
64			Minimum		2600							
65			Maximum		3000							
66			Mean		2792							
67			Geometric Mean		2790							
68			Median		2800							
69			Standard Deviation		94.32							
70			Coefficient of Variation		0.0338							
71												
72			Mann-Kendall Test									
73			M-K Test Value (S)		-22							
74			Tabulated p-value		0.205							
75			Standard Deviation of S		23.02							
76			Standardized Value of S		-0.912							
77			Approximate p-value		0.181							
78												
79			Insufficient evidence to identify a significant trend at the specified level of significance.									
80												
81			TDS-m-61									
82												
83			General Statistics									
84			Number of Events Reported (m)		18							
85			Number of Missing Events		0							
86			Number or Reported Events Used		18							
87			Number Values Reported (n)		18							
88			Minimum		2600							
89			Maximum		3000							
90			Mean		2806							
91			Geometric Mean		2804							
92			Median		2800							
93			Standard Deviation		105.6							
94			Coefficient of Variation		0.0376							
95												
96			Mann-Kendall Test									
97			M-K Test Value (S)		-27							
98			Tabulated p-value		0.165							
99			Standard Deviation of S		24.87							
100			Standardized Value of S		-1.046							

	A	B	C	D	E	F	G	H	I	J	K	L
101	Approximate p-value				0.148							
102												
103	Insufficient evidence to identify a significant											
104	trend at the specified level of significance.											

	A	B	C	D	E	F	G	H	I	J	K	L
1				Mann-Kendall Trend Test Analysis								
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.14/13/2020 6:52:36 PM								
4	From File			20200330APS_BAM_DetMon_Oct2019_NoDups.xls								
5	Full Precision			OFF								
6	Confidence Coefficient			0.95								
7	Level of Significance			0.05								
8												
9	Sulfate-m-54											
10												
11	General Statistics											
12	Number of Events Reported (m)			18								
13	Number of Missing Events			0								
14	Number or Reported Events Used			18								
15	Number Values Reported (n)			18								
16	Minimum			340								
17	Maximum			380								
18	Mean			361.1								
19	Geometric Mean			360.9								
20	Median			360								
21	Standard Deviation			12.31								
22	Coefficient of Variation			0.0341								
23												
24	Mann-Kendall Test											
25	M-K Test Value (S)			-31								
26	Tabulated p-value			0.13								
27	Standard Deviation of S			25.45								
28	Standardized Value of S			-1.179								
29	Approximate p-value			0.119								
30												
31	Insufficient evidence to identify a significant											
32	trend at the specified level of significance.											
33	Sulfate-m-59											
34												
35	General Statistics											
36	Number of Events Reported (m)			18								
37	Number of Missing Events			0								
38	Number or Reported Events Used			18								
39	Number Values Reported (n)			18								
40	Minimum			330								
41	Maximum			370								
42	Mean			348.3								
43	Geometric Mean			348.2								
44	Median			350								
45	Standard Deviation			10.43								
46	Coefficient of Variation			0.0299								
47												
48	Mann-Kendall Test											
49	M-K Test Value (S)			29								
50	Tabulated p-value			0.147								

	A	B	C	D	E	F	G	H	I	J	K	L
51	Standard Deviation of S				24.87							
52	Standardized Value of S				1.126							
53	Approximate p-value				0.13							
54												
55	Insufficient evidence to identify a significant trend at the specified level of significance.											
56												
57	Sulfate-m-60											
58												
59	General Statistics											
60	Number of Events Reported (m)				18							
61	Number of Missing Events				0							
62	Number or Reported Events Used				18							
63	Number Values Reported (n)				18							
64	Minimum				340							
65	Maximum				410							
66	Mean				357.2							
67	Geometric Mean				356.9							
68	Median				350							
69	Standard Deviation				14.97							
70	Coefficient of Variation				0.0419							
71												
72	Mann-Kendall Test											
73	M-K Test Value (S)				19							
74	Tabulated p-value				0.25							
75	Standard Deviation of S				24.42							
76	Standardized Value of S				0.737							
77	Approximate p-value				0.231							
78												
79	Insufficient evidence to identify a significant trend at the specified level of significance.											
80												
81	Sulfate-m-61											
82												
83	General Statistics											
84	Number of Events Reported (m)				18							
85	Number of Missing Events				0							
86	Number or Reported Events Used				18							
87	Number Values Reported (n)				18							
88	Minimum				340							
89	Maximum				420							
90	Mean				361.7							
91	Geometric Mean				361.2							
92	Median				360							
93	Standard Deviation				19.78							
94	Coefficient of Variation				0.0547							
95												
96	Mann-Kendall Test											
97	M-K Test Value (S)				22							
98	Tabulated p-value				0.205							
99	Standard Deviation of S				25.6							
100	Standardized Value of S				0.82							

	A	B	C	D	E	F	G	H	I	J	K	L
101	Approximate p-value				0.206							
102												
103	Insufficient evidence to identify a significant											
104	trend at the specified level of significance.											

APPENDIX F

**WOOD TECHNICAL MEMORANDUM DOCUMENTING THE STATISTICAL ANALYSIS
OF APPENDIX III CONSTITUENT DATA COLLECTED FROM THE BAM THROUGH
MAY 2020**

Technical Memorandum

To:	Arizona Public Service Company	File No:	14-2018-2040
From:	Dane Andersen, GIT	Reviewed by:	Maren Henley, PE Tim Glover
Date:	October 13, 2020		
Subject:	CCR GROUNDWATER DETECTION MONITORING STATISTICAL ANALYSIS AND RESULTS FOR THE BOTTOM ASH MONOFILL APPENDIX III CONSTITUENT DATA COLLECTED THROUGH MAY 2020 Arizona Public Service Cholla Power Plant – Navajo County, Arizona		

1.0 INTRODUCTION

This Technical Memorandum presents the results of a statistical evaluation of groundwater monitoring data collected from monitoring wells downgradient of the Bottom Ash Monofill (BAM) located at the Arizona Public Service Company Cholla Power Plant (Site) in Navajo County, Arizona. The statistical evaluation was performed by Wood Environment and Infrastructure Solutions, Inc.'s (Wood) subcontractor, Formation Environmental, LLC (Formation Environmental) pursuant to Coal Combustion Residuals (CCR) Rule requirements for groundwater monitoring and corrective action detailed in 40 Code of Federal Regulations Sections 257.90 through 257.98 (Federal Register, 2018).

The BAM is a Site CCR unit that is currently in the detection monitoring program. The CCR Rule requires routine evaluations of Appendix III constituent data collected from BAM downgradient wells to determine if a statistically significant increase (SSI) over background threshold values (BTVs) has occurred. The statistical evaluation documented herein incorporates Appendix III constituent data collected from BAM downgradient wells M-59, M-60, and M-61 through May 2020.

2.0 STATISTICAL EVALUATION RESULTS

Attachment A presents the statistical evaluation conducted by Formation Environmental. The results of the evaluation are summarized as follows:

- There are currently no SSIs over BTVs for Appendix III constituents at the BAM downgradient wells.
- An initial exceedance over the fluoride BTV was detected at monitoring wells M-59, M-60, and M-61. The exceedances ranged from 0.2 to 0.4 milligrams per liter over the fluoride BTV. The initial exceedances trigger a 1 of 3 resampling strategy for fluoride at these wells.
- There are no statistically significant increasing trends for Appendix III constituents at the BAM downgradient wells.



3.0 RECOMMENDATIONS

Based on the results of the statistical evaluation presented in Attachment A and pursuant to the CCR Rule, continuation of detection monitoring at a semiannual frequency for Appendix III constituents at the BAM is warranted because there are currently no SSIs over Appendix III constituent BTVs. In accordance with the Statistical Data Analysis Workplan developed for the Site and the US EPA's Unified Guidance (Wood, 2018; US EPA 2009), a 1 of 3 resampling strategy should be implemented at the BAM compliance wells as soon as practicable to determine if the initial exceedance for fluoride is statistically significant. Wood also recommends trend testing after each monitoring event and updates to the statistical method selection and BTVs after 1-2 years of future sampling events.

4.0 REFERENCES

Federal Register, 2018. *40 Code of Federal Regulations Part 257 – Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities; Final Rule promulgated April 17, 2015 with Amendments to the National Minimum Criteria (Phase One, Part One) effective August 29, 2018.*

United States Environmental Protection Agency (U.S. EPA), 2009. *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance*. EPA 530/R-09-007. Environmental Protection Agency Office of Resource Conservation and Recovery.

Wood Environment & Infrastructure Solutions, Inc. (Wood), 2018. *Statistical Data Analysis Work Plan*. Coal Combustion Residual Rule Groundwater Monitoring System Compliance. Cholla Power Plant. Navajo County, Arizona. Prepared for Arizona Public Service. October 15, 2018.

ATTACHMENT A

Technical Memorandum

To: Maren Henley, PE
Dane Andersen, GIT
Wood Environment & Infrastructure Solutions, Inc.

From: Carla Landrum, PhD
Formation Environmental, LLC

Date: October 5, 2020

Subject: **CCR Groundwater Detection Monitoring**
Statistical Evaluation of May 2020 & Preceding Bottom Ash Monofill Data
Arizona Public Service Cholla Power Plant – Navajo County, Arizona

1.0 INTRODUCTION

This Technical Memorandum (Tech Memo) documents the ongoing statistical evaluation of detection monitoring (i.e., Appendix III constituent) groundwater data associated with the Bottom Ash Monofill (BAM) located at the Arizona Public Service (APS) Cholla Power Plant (Cholla) in Navajo County, Arizona. This routine statistical evaluation is completed by Formation Environmental, LLC in accordance with the Statistical Data Analysis Work Plan for the Cholla Power Plant and the Coal Combustion Residuals (CCR) Rule (Federal Register, 2018; Wood Environment & Infrastructure Solutions, Inc. [Wood], 2018).

The statistical evaluation documented herein incorporates the results of detection monitoring at the BAM through May 2020. The Background Threshold Values (BTVs) in this Tech Memo recognize recommendations put forth in the Alternative Source Demonstration to address historic statistically significant increases in fluoride concentrations over BTVs at the BAM (Wood 2019a, Wood 2019b).

The following sections present data inputs, statistical methods, results and recommendations for the subject analysis.

2.0 DATA INPUTS

The BAM groundwater monitoring well network consists of one background monitoring well (M-54) and three compliance (i.e., downgradient), monitoring wells (M-59, M-60 and M-61). The period of evaluation for this BAM Appendix III constituent statistical analysis ranges from December 2015 through May 2020 and includes the minimum of eight initial, or baseline, sampling rounds and four subsequent sampling rounds of detection monitoring. Due principally to the CCR Rule requirement that a minimum of eight initial rounds of data be collected from the site prior to October 17, 2017, the frequency of sample collection prior to this date is short and variable (e.g., biweekly to quarterly sampling).

This data evaluation evaluates 19 samples for boron, calcium, chloride, sulfate and total dissolved solids (TDS) within each compliance monitoring well and 18 samples for pH within each compliance monitoring well. For fluoride, there are 19 samples available for analysis at each monitoring location except for M-61,

where there are 20 samples. The first, second, third, fourth, fifth and sixth rounds of detection monitoring at the BAM were conducted in December 2017, May 2018, October 2018, April 2019, October 2019 and May 2020, respectively; all Appendix III constituents were evaluated in collected samples during these monitoring events.

Appendix A contains the contents of the ProUCL data upload tables for the subject analysis. Data inputs for this statistical analysis were prepared, and provided by, Wood. The Appendix III analytes are listed by name or chemical symbol as column headers in the ProUCL data upload table. By ProUCL convention, each analyte has a corresponding data column (indicated with a "D_" prefix) that indicates if the analyte was detected or not at a concentration that exceeds the analytical reporting limit, where detectable concentrations are symbolized by a "1" and non-detectable concentrations are symbolized by a "0." The detection frequency is 100% for all sample data listed in Appendix A.

3.0 METHODS

The statistical methods and analysis approach used to evaluate BAM Appendix III constituent data are documented in the *Statistical Data Analysis Work Plan (SDAWP)* (Wood, 2018) prepared for the site.

Table 1 details the not to exceed BTVs and method of calculation for the BAM. Table 1 reflects previously calculated BTVs (Wood, 2019a) in addition to recommendations put forth in the 2019 ASD for the BAM (Wood, 2019b).

Precursor exploratory data analysis (EDA) is necessary to help assure that groundwater sample comparisons to their respective BTVs are valid. EDA includes box and whisker plots generation, goodness of fit testing, Mann-Kendall trend testing, and summary statistics.

4.0 RESULTS

Table 2 summarizes: 1) which Appendix III constituents exhibit exceedances above their respective BTVs by compliance well and 2) which constituents exhibit statistically significant temporal trends.

Appendix B contains the raw ProUCL EDA outputs as reference for the following statistical findings:

Monitoring Well M-59. The May 2020 sampling event results in an initial exceedance for fluoride at this monitoring well. For sampling events occurring through May 2020, there are no significant ($p < 0.05$) temporal trends for Appendix III constituents at this monitoring location.

Monitoring Well M-60. The May 2020 sampling event results in an initial exceedance for fluoride at this monitoring well. The statistically significant ($p < 0.05$) decreasing time series trend for calcium at this location

becomes insignificant with the addition of the May 2020 sample. For sampling events occurring through May 2020, there is a statistically significant ($p < 0.05$) decreasing trend for pH at this monitoring location.

Monitoring Well M-61. The May 2020 sampling event results in an initial exceedance for fluoride at this monitoring well. For sampling events occurring through May 2020, there are no significant ($p < 0.05$) temporal trends for Appendix III constituents at this monitoring location.

5.0 CONCLUSIONS AND RECOMMENDATIONS

This statistical analysis results in the following conclusions for the BAM detection monitoring statistical analysis:

- The May 2020 sampling event results in an initial exceedance for fluoride at M-59, M-60 and M-61.
- The remaining Appendix III constituent concentrations for the May 2020 sampling event exhibit sample concentrations that are not in exceedance of their respective BTVs (Table 1).

Formation Environmental, LLC puts forth the following recommendations to Wood for completing future statistical evaluations:

- The May 2020 initial exceedances for fluoride at M-59, M-60 and M-61 triggers the 1 of 3 sampling procedure for this Appendix III constituent. The resampling procedure is put forth to determine if the initial exceedance is statistically significant ($p < 0.05$) at each sample location and is detailed in the Statistical Data Analysis Workplan and in the US EPA's Unified Guidance (Wood, 2018; US EPA 2009).
- Detection Monitoring should continue at the BAM pending the results of implementing the resampling procedure for fluoride.
- Trend testing after each sampling round should continue to assess changes in temporal trend significance.
- Statistical method selection and background threshold values should be updated after 1-2 years of future sampling events.

6.0 REFERENCES

- Federal Register, 2018. *40 Code of Federal Regulations Part 257 – Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule promulgated April 17, 2015 with Amendments to the National Minimum Criteria (Phase One, Part One) effective August 29, 2018.*
- United States Environmental Protection Agency (U.S. EPA), 2009. *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance*. EPA 530/R-09-007. Environmental Protection Agency Office of Resource Conservation and Recovery.
- Wood Environment & Infrastructure Solutions, Inc. (Wood), 2018. *Statistical Data Analysis Work Plan*. Coal Combustion Residual Rule Groundwater Monitoring System Compliance. Cholla Power Plant. Navajo County, Arizona. Prepared for Arizona Public Service. October 15, 2018.
- Wood, 2019a. *CCR Groundwater Detection Monitoring Statistical Analysis and Results for the Bottom Ash Monofill*. Arizona Public Service Cholla Power Plant. Navajo County, Arizona. April 15, 2019.
- Wood, 2019b. *Alternative Source Demonstration for Fluoride at the BAM*. Arizona Public Service Cholla Power Plant. Navajo County, Arizona. August 14, 2019.

ATTACHMENTS

- Table 1 – Interwell and Intrawell BTVs for the Cholla BAM
Table 2 – Cholla BAM Downgradient Sample Data Summary
- Appendix A – ProUCL Data Upload Table
Appendix B – ProUCL EDA Output Files

TABLES

Table 1
Interwell and Intrawell BTVs for the Cholla
BAM Appendix III Statistical Analysis

Background Well	Dates Corresponding to Data Used to Derive UPL	Constituent	Interwell BTV (Calculation Method)	Units	Resampling Strategy ¹	Reference
M-54	12/3/2015-9/5/2017	Boron	0.55 (P-UPL)	mg/L	1 of 2	Wood, 2019a
M-54	12/3/2015-9/5/2017	Calcium	100 (NP-UPL)	mg/L	1 of 3	Wood, 2019a
M-54	12/3/2015-9/5/2017	Chloride	1,600 (NP-UPL)	mg/L	1 of 3	Wood, 2019a
M-54	12/3/2015-9/5/2017	Fluoride	1.4 (NP-UPL) ²	mg/L	1 of 3	Wood, 2019a
M-54	12/3/2015-9/5/2017	pH (upper limit)	7.8 (P-UPL)	SU	1 of 2	Wood, 2019a
M-54	12/3/2015-9/5/2017	pH (lower limit)	7.3 (P-LPL)	SU	1 of 2	Wood, 2019a
M-54	12/3/2015-9/5/2017	Sulfate	380 (P-UPL)	mg/L	1 of 2	Wood, 2019a
M-54	12/3/2015-9/5/2017	TDS	3200 (P-UPL)	mg/L	1 of 2	Wood, 2019a

Compliance Well	Dates Corresponding to Data Used to Derive UPL	Constituent	Intrawell BTV (Calculation Method)	Units	Resampling Strategy ¹	Reference
M-60	12/3/15-9/5/2017	Fluoride	1.5 (NP-UPL)	mg/L	1 of 3	<i>New UPL</i>
M-61	12/3/15-9/5/2017	Fluoride	1.5 (NP-UPL)	mg/L	1 of 3	<i>New UPL</i>

Notes:

BAM = Bottom Ash Pond

BTV = background threshold value

LPL = lower prediction limit

mg/L = milligrams per liter

NP = Non Parametric

P = Parametric

SU = standard units

TDS = total dissolved solids

UPL = upper prediction limit

¹ A 1 of 2 resampling strategy is in place for parametric prediction limits. A 1 of 3 resampling strategy is in place for non-parametric prediction limits and the limit represents the maximum concentration value of the data set (i.e., maximum order statistic). The BTV for calcium represents the second highest concentration value because the maximum concentration value is a perceived outlier and was removed from the evaluation.

² Only applicable to M-59.

Table 2
Cholla BAM Downgradient Sample Data Summary
Appendix III Statistical Analysis

Well	Sample_ID	SampDate	Constituent Concentration						
			Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS
M-59	7803_O	03-Dec-15	0.5	87	1300	1.3	7.53	340	2700
M-59	CH-M-59-0316_O	10-Mar-16	0.48	85	1400	1.3	7.57	350	2700
M-59	CH-CCR-M59-516_O	20-May-16	0.49	86	1400	1.4	---	340	2700
M-59	CH-CCR-M59-816_O	27-Aug-16	0.50	89	1400	1.4	7.6	350	2700
M-59	CH-CCR-M59-916_O	22-Sep-16	0.50	88	1300	1.4	7.8	340	2900
M-59	CH-CCR-M59-217_O	22-Feb-17	0.48	86	1200	1.3	7.8	330	2800
M-59	CH-CCR-M59-41117_O	11-Apr-17	0.49	90	1400	1.3	8.1	350	2800
M-59	CH-CCR-M59-42417_O	24-Apr-17	0.52	89	1300	1.4	7.7	350	2800
M-59	CH-CCR-M59-51917_O	19-May-17	0.50	93	1400	1.4	7.8	360	2700
M-59	CH-CCR-M59-52517_O	25-May-17	0.50	88	1300	1.4	7.6	350	2700
M-59	CH-CCR-M59-62917_O	29-Jun-17	0.49	84	1400	1.5	7.8	370	2500
M-59	CH-CCR-M59-72917_O	29-Jul-17	0.53	92	1300	1.5	7.6	340	2800
M-59	CH-CCR-M59-90517_O	05-Sep-17	0.51	90	1300	1.4	7.7	360	2700
M-59	CH-CCR-M59-120717_O	07-Dec-17	0.49	86	1400	1.4	7.7	350	2700
M-59	CH-CCR-M-59-52518_O	25-May-18	0.49	85	1400	1.4	7.5	350	2700
M-59	CH-CCR-M-59-102618	26-Oct-18	0.48	88	1400	1.4	7.6	360	2500
M-59	CH-CCR-M59-40919	09-Apr-19	0.5	86	1200	1.4	7.9	330	2700
M-59	CH-CCR-M59-102319	23-Oct-19	0.48	84	1400	1.3	7.5	350	2800
M-59	CH-CCR-M59-0520	07-May-20	0.5	89	1200	1.8	7.7	350	2800
Units:			mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
BTV or Intrawell UPL ^{1,2} :			0.55	100	1600	1.4	7.8/7.3	380	3200
Temporal Trend ³ :			None	None	None	None	None	None	None

Table 2
Cholla BAM Downgradient Sample Data Summary
Appendix III Statistical Analysis

Well	Sample_ID	SampDate	Constituent Concentration						
			Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS
M-60	7801_O	03-Dec-15	0.54	88	1400	1.3	7.56	350	2800
M-60	CH-M-60A-0316_O	09-Mar-16	0.50	86	1400	1.4	7.83	350	2800
M-60	CH-CCR-M60-516_O	20-May-16	0.50	89	1400	1.5	---	350	2800
M-60	CH-CCR-M60-816_O	27-Aug-16	0.52	90	1400	1.5	7.5	360	2800
M-60	CH-CCR-M60-916_O	22-Sep-16	0.51	88	1300	1.4	7.8	350	3000
M-60	CH-CCR-M60-217_O	22-Feb-17	0.52	91	1300	1.4	7.8	340	2800
M-60	CH-CCR-M60-41117_O	11-Apr-17	0.48	90	1400	1.4	8.0	360	2900
M-60	CH-CCR-M60-42417_O	24-Apr-17	0.53	86	1400	1.4	7.8	350	2700
M-60	CH-CCR-M60-51917_O	19-May-17	0.53	92	1400	1.4	7.7	360	2800
M-60	CH-CCR-M60-52517_O	25-May-17	0.51	86	1300	1.4	7.7	350	2800
M-60	CH-CCR-M60-62917_O	29-Jun-17	0.51	84	1500	1.5	7.7	440	2500
M-60	CH-CCR-M60-72917_O	29-Jul-17	0.53	89	1400	1.5	7.6	370	2800
M-60	CH-CCR-M60-90517_O	05-Sep-17	0.53	90	1400	1.5	7.6	360	2800
M-60	CH-CCR-M60-120717_O	07-Dec-17	0.50	85	1500	1.4	7.6	360	2900
M-60	CH-CCR-M-60-52518_O	25-May-18	0.50	83	1400	1.5	7.5	350	2800
M-60	CH-CCR-M-60-102618	26-Oct-18	0.49	88	1400	1.4	7.7	350	2600
M-60	CH-CCR-M60-40919	09-Apr-19	0.51	84	1300	1.4	7.7	350	2800
M-60	CH-CCR-M60-102219	22-Oct-19	0.5	85	1400	1.4	7.6	360	2800
M-60	CH-CCR-M60-0520	07-May-20	0.5	88	1200	1.7	7.7	350	2900
Units:			mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
BTV or Intrawell UPL ^{1,2} :			0.55	100	1600	1.5	7.8/7.3	380	3200
Temporal Trend ³ :			None	None	None	None	Decreasing	None	None

Table 2
Cholla BAM Downgradient Sample Data Summary
Appendix III Statistical Analysis

Well	Sample_ID	SampDate	Constituent Concentration						
			Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS
M-61	7802_O	03-Dec-15	0.51	90	1400	1.3	7.22	350	2800
M-61	CH-M-61-0316_O	10-Mar-16	0.49	90	1400	1.4	7.59	340	2800
M-61	CH-CCR-M61-516_O	20-May-16	0.49	89	1400	1.4	---	350	2800
M-61	CH-CCR-M61-816_O	27-Aug-16	0.50	90	1400	1.5	7.5	360	2900
M-61	CH-CCR-M61-916_O	22-Sep-16	0.50	90	1300	1.4	7.9	350	3000
M-61	CH-CCR-M61-217_O	22-Feb-17	0.50	92	1100	1.4	7.8	340	2700
M-61	CH-CCR-M61-41117_O	11-Apr-17	0.50	93	1700	1.4	8.0	420	3000
M-61	CH-CCR-M61-42417_O	24-Apr-17	0.52	88	1400	1.4	7.7	360	2700
M-61	CH-CCR-M61-51917_O	19-May-17	0.5	92	1400	1.3	7.8	370	2800
M-61	CH-CCR-M61-52517_O	25-May-17	0.51	92	1400	1.4	7.7	370	2800
M-61	CH-CCR-M61-62917_O	29-Jun-17	0.50	86	1500	1.5	7.8	380	2700
M-61	CH-CCR-M61-72917_O	29-Jul-17	0.52	94	1300	1.5	7.6	360	2900
M-61	CH-CCR-M61-90517_O	05-Sep-17	0.50	91	1400	1.5	7.6	360	2800
M-61	CH-CCR-M61-120717_O	07-Dec-17	0.49	88	1500	1.4	7.6	360	2900
M-61	CH-CCR-M-61-52518_O	25-May-18	0.48	87	1400	1.5	7.5	390	2800
M-61	CH-CCR-M-61-102618	26-Oct-18	0.48	91	1400	1.4	7.5	360	2600
M-61	CH-CCR-M61-40919	09-Apr-19	0.5	88	1300	1.4	7.7	340	2800
M-61	CH-CCR-M61-102219	22-Oct-19	0.48	87	1400	1.4	7.8	350	2700
M-61	CH-CCR-M61-0520	07-May-20	0.51	93	1300	1.6	7.7	350	3000
Units:			mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L
BTV or Intrawell UPL ^{1,2} :			0.55	100	1600	1.5	7.8/7.3	380	3200
Temporal Trend ³ :			None	None	None	None	None	None	None

Table 2
Cholla BAM Downgradient Sample Data Summary
Appendix III Statistical Analysis

Well	Sample_ID	SampDate	Constituent Concentration						
			Boron	Calcium	Chloride	Fluoride	pH	Sulfate	TDS

Notes:

BTV = background threshold value

mg/L = milligrams per liter

TDS = total dissolved solids

UPL = upper prediction limit

SU = standard units

0.50

Value from baseline monitoring period (December 2015 to September 2017)

Reported value in current sampling round exceeds the BTV or UPL

Statistically significant increasing trend present

None

Insufficient evidence to identify a trend.

¹ New values calculated for this sampling round presented in bolded red text; ⁵ee Table 1 for relevant BTV and Intrawell UPL information

² For pH, values presented refer to the Upper Prediction Limit/Lower Prediction Limit, respectively

³ Temporal trends evaluated with Mann-Kendall trend tests ($p < 0.05$); tied values (sequential sample concentrations)

APPENDIX A

PROUCL DATA UPLOAD TABLE

Appendix A
ProUCL Data

Well Name	Field Sample ID	Sample Date	Boron	D_Boron	Calcium	D_Calcium	Chloride	D_Chloride	Fluoride	D_Fluoride	pH	D_pH	Sulfate	D_Sulfate	TDS	D_TDS
M-54	7799	12/03/2015	0.52	1	100	1	1500	1	1.2	1	7.34	1	380	1	3000	1
M-54	CH-M-54-0316	03/10/2016	0.53	1	100	1	1600	1	1.3	1	7.56	1	360	1	2900	1
M-54	CH-CCR-M54-516	05/20/2016	0.51	1	100	1	1500	1	1.4	1	NA	NA	350	1	3000	1
M-54	CH-CCR-M54-816	08/27/2016	0.53	1	110	1	1600	1	1.4	1	7.5	1	370	1	3100	1
M-54	CH-CCR-M54-916	09/22/2016	0.52	1	99	1	1400	1	1.4	1	7.7	1	350	1	3200	1
M-54	CH-CCR-M54-217	02/21/2017	0.52	1	100	1	1300	1	1.3	1	7.7	1	350	1	2900	1
M-54	CH-CCR-M54-41117	04/11/2017	0.51	1	100	1	1500	1	1.2	1	7.7	1	360	1	3100	1
M-54	CH-CCR-M54-42417	04/24/2017	0.53	1	95	1	1500	1	1.3	1	7.6	1	370	1	3000	1
M-54	CH-CCR-M54-51917	05/19/2017	0.5	1	99	1	1600	1	1.3	1	7.8	1	380	1	3200	1
M-54	CH-CCR-M54-52517	05/25/2017	0.52	1	100	1	1500	1	1.4	1	7.7	1	370	1	3200	1
M-54	CH-CCR-M54-62917	06/29/2017	0.51	1	97	1	1600	1	1.4	1	7.6	1	380	1	2900	1
M-54	CH-CCR-M54-72917	07/29/2017	0.56	1	100	1	1500	1	1.4	1	7.4	1	350	1	3100	1
M-54	CH-CCR-M54-90517	09/05/2017	0.55	1	100	1	1500	1	1.4	1	7.5	1	370	1	3100	1
M-54	CH-CCR-M54-120717	12/07/2017	0.51	1	97	1	1600	1	1.4	1	7.6	1	360	1	3000	1
M-54	CH-CCR-M-54-52518	05/25/2018	0.5	1	96	1	1500	1	1.4	1	7.4	1	350	1	3000	1
M-54	CH-CCR-M-54-102618	10/26/2018	0.5	1	100	1	1500	1	1.4	1	7.5	1	360	1	2900	1
M-54	CH-CCR-M54-40919	04/09/2019	0.53	1	98	1	1400	1	1.3	1	7.7	1	340	1	3100	1
M-54	CH-CCR-M54-102219	10/22/2019	0.49	1	95	1	1500	1	1.3	1	7.4	1	350	1	2900	1
M-54	CH-CCR-M54-0520	05/07/2020	0.51	1	98	1	1400	1	1.8	1	7.6	1	360	1	3100	1
M-59	7803	12/03/2015	0.5	1	87	1	1300	1	1.3	1	7.53	1	340	1	2700	1
M-59	CH-M-59-0316	03/10/2016	0.48	1	85	1	1400	1	1.3	1	7.57	1	350	1	2700	1
M-59	CH-CCR-M59-516	05/20/2016	0.49	1	86	1	1400	1	1.4	1	NA	NA	340	1	2700	1
M-59	CH-CCR-M59-816	08/27/2016	0.5	1	89	1	1400	1	1.4	1	7.6	1	350	1	2700	1
M-59	CH-CCR-M59-916	09/22/2016	0.5	1	88	1	1300	1	1.4	1	7.8	1	340	1	2900	1
M-59	CH-CCR-M59-217	02/22/2017	0.48	1	86	1	1200	1	1.3	1	7.8	1	330	1	2800	1
M-59	CH-CCR-M59-41117	04/11/2017	0.49	1	90	1	1400	1	1.3	1	8.1	1	350	1	2800	1
M-59	CH-CCR-M59-42417	04/24/2017	0.52	1	89	1	1300	1	1.4	1	7.7	1	350	1	2800	1
M-59	CH-CCR-M59-51917	05/19/2017	0.5	1	93	1	1400	1	1.4	1	7.8	1	360	1	2700	1
M-59	CH-CCR-M59-52517	05/25/2017	0.5	1	88	1	1300	1	1.4	1	7.6	1	350	1	2700	1
M-59	CH-CCR-M59-62917	06/29/2017	0.49	1	84	1	1400	1	1.5	1	7.8	1	370	1	2500	1
M-59	CH-CCR-M59-72917	07/29/2017	0.53	1	92	1	1300	1	1.5	1	7.6	1	340	1	2800	1
M-59	CH-CCR-M59-90517	09/05/2017	0.51	1	90	1	1300	1	1.4	1	7.7	1	360	1	2700	1
M-59	CH-CCR-M59-120717	12/07/2017	0.49	1	86	1	1400	1	1.4	1	7.7	1	350	1	2700	1
M-59	CH-CCR-M-59-52518	05/25/2018	0.49	1	85	1	1400	1	1.4	1	7.5	1	350	1	2700	1
M-59	CH-CCR-M-59-102618	10/26/2018	0.48	1	88	1	1400	1	1.4	1	7.6	1	360	1	2500	1
M-59	CH-CCR-M59-40919	04/09/2019	0.5	1	86	1	1200	1	1.4	1	7.9	1	330	1	2700	1
M-59	CH-CCR-M59-102319	10/23/2019	0.48	1	84	1	1400	1	1.3	1	7.5	1	350	1	2800	1
M-59	CH-CCR-M59-0520	05/07/2020	0.5	1	89	1	1200	1	1.8	1	7.7	1	350	1	2800	1
M-60	7801	12/03/2015	0.54	1	88	1	1400	1	1.3	1	7.56	1	350	1	2800	1
M-60	CH-M-60A-0316	03/09/2016	0.5	1	86	1	1400	1	1.4	1	7.83	1	350	1	2800	1
M-60	CH-CCR-M60-516	05/20/2016	0.5	1	89	1	1400	1	1.5	1	NA	NA	350	1	2800	1
M-60	CH-CCR-M60-816	08/27/2016	0.52	1	90	1	1400	1	1.5	1	7.5	1	360	1	2800	1
M-60	CH-CCR-M60-916	09/22/2016	0.51	1	88	1	1300	1	1.5	1	7.8	1	350	1	3000	1
M-60	CH-CCR-M60-217	02/22/2017	0.52	1	91	1	1300	1	1.4	1	7.8	1	340	1	2800	1
M-60	CH-CCR-M60-41117	04/11/2017	0.48	1	90	1	1400	1	1.4	1	8	1	360	1	2900	1
M-60	CH-CCR-M60-42417	04/24/2017	0.53	1	86	1	1400	1	1.4	1	7.8	1	350	1	2700	1
M-60	CH-CCR-M60-51917	05/19/2017	0.53	1	92	1	1400	1	1.4	1	7.7	1	360	1	2800	1
M-60	CH-CCR-M60-52517	05/25/2017	0.51	1	86	1	1300	1	1.4	1	7.7	1	350	1	2800	1
M-60	CH-CCR-M60-62917	06/29/2017	0.51	1	84	1	1500	1	1.5	1	7.7	1	440	1	2500	1
M-60	CH-CCR-M60-72917	07/29/2017	0.53	1	89	1	1400	1	1.5	1	7.6	1	370	1	2800	1

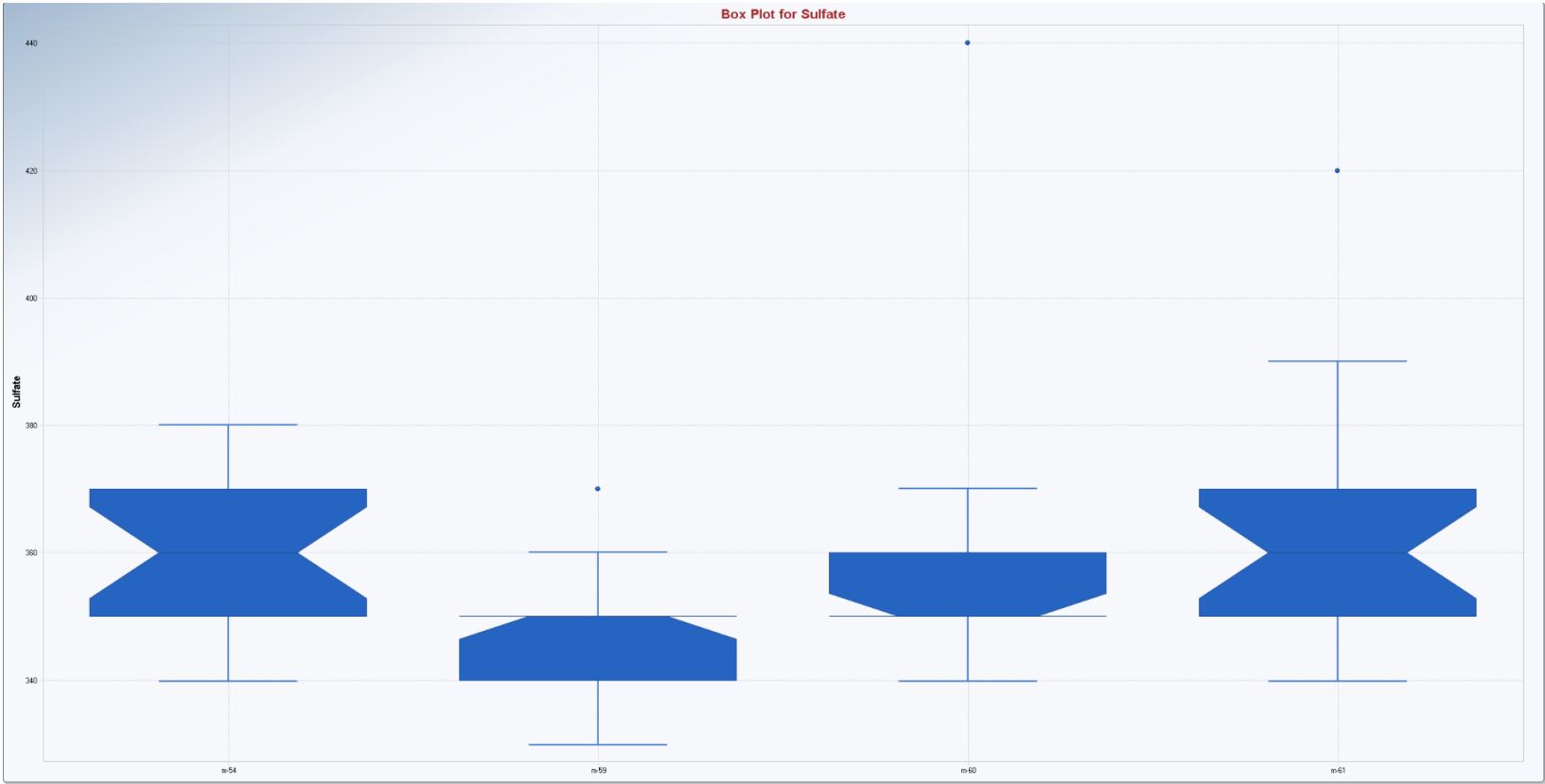
Appendix A
ProUCL Data

Well Name	Field Sample ID	Sample Date	Boron	D_Boron	Calcium	D_Calcium	Chloride	D_Chloride	Fluoride	D_Fluoride	pH	D_pH	Sulfate	D_Sulfate	TDS	D_TDS
M-60	CH-CCR-M60-90517	09/05/2017	0.53	1	90	1	1400	1	1.5	1	7.6	1	360	1	2800	1
M-60	CH-CCR-M60-120717	12/07/2017	0.5	1	85	1	1500	1	1.4	1	7.6	1	360	1	2900	1
M-60	CH-CCR-M-60-52518	05/25/2018	0.5	1	83	1	1400	1	1.5	1	7.5	1	350	1	2800	1
M-60	CH-CCR-M-60-102618	10/26/2018	0.49	1	88	1	1400	1	1.4	1	7.7	1	350	1	2600	1
M-60	CH-CCR-M60-40919	04/09/2019	0.51	1	84	1	1300	1	1.4	1	7.7	1	350	1	2800	1
M-60	CH-CCR-M60-102219	10/22/2019	0.5	1	85	1	1400	1	1.4	1	7.6	1	360	1	2800	1
M-60	CH-CCR-M60-0520	05/07/2020	0.5	1	88	1	1200	1	1.7	1	7.7	1	350	1	2900	1
M-61	7802	12/03/2015	0.51	1	90	1	1400	1	1.3	1	7.22	1	350	1	2800	1
M-61	CH-M-61-0316	03/10/2016	0.49	1	90	1	1400	1	1.4	1	7.59	1	340	1	2800	1
M-61	CH-CCR-M61-516	05/20/2016	0.49	1	89	1	1400	1	1.4	1	NA	NA	350	1	2800	1
M-61	CH-CCR-M61-816	08/27/2016	0.5	1	90	1	1400	1	1.5	1	7.5	1	360	1	2900	1
M-61	CH-CCR-M61-916	09/22/2016	0.5	1	90	1	1300	1	1.5	1	7.9	1	350	1	3000	1
M-61	CH-CCR-M61-217	02/22/2017	0.5	1	92	1	1100	1	1.4	1	7.8	1	340	1	2700	1
M-61	CH-CCR-W61-217	02/22/2017	NA	NA	NA	NA	NA	NA	1.5	1	NA	NA	NA	NA	NA	NA
M-61	CH-CCR-M61-41117	04/11/2017	0.5	1	93	1	1700	1	1.3	1	8	1	420	1	3000	1
M-61	CH-CCR-M61-42417	04/24/2017	0.52	1	88	1	1400	1	1.4	1	7.7	1	360	1	2700	1
M-61	CH-CCR-M61-51917	05/19/2017	0.5	1	92	1	1400	1	1.3	1	7.8	1	370	1	2800	1
M-61	CH-CCR-M61-52517	05/25/2017	0.51	1	92	1	1400	1	1.4	1	7.7	1	370	1	2800	1
M-61	CH-CCR-M61-62917	06/29/2017	0.5	1	86	1	1500	1	1.5	1	7.8	1	380	1	2700	1
M-61	CH-CCR-M61-72917	07/29/2017	0.52	1	94	1	1300	1	1.5	1	7.6	1	360	1	2900	1
M-61	CH-CCR-M61-90517	09/05/2017	0.5	1	91	1	1400	1	1.5	1	7.6	1	360	1	2800	1
M-61	CH-CCR-M61-120717	12/07/2017	0.49	1	88	1	1500	1	1.4	1	7.6	1	360	1	2900	1
M-61	CH-CCR-M-61-52518	05/25/2018	0.48	1	87	1	1400	1	1.5	1	7.5	1	390	1	2800	1
M-61	CH-CCR-M-61-102618	10/26/2018	0.48	1	91	1	1400	1	1.4	1	7.5	1	360	1	2600	1
M-61	CH-CCR-M61-40919	04/09/2019	0.5	1	88	1	1300	1	1.4	1	7.7	1	340	1	2800	1
M-61	CH-CCR-M61-102219	10/22/2019	0.48	1	87	1	1400	1	1.4	1	7.8	1	350	1	2700	1
M-61	CH-CCR-M61-0520	05/07/2020	0.51	1	93	1	1300	1	1.6	1	7.7	1	350	1	3000	1

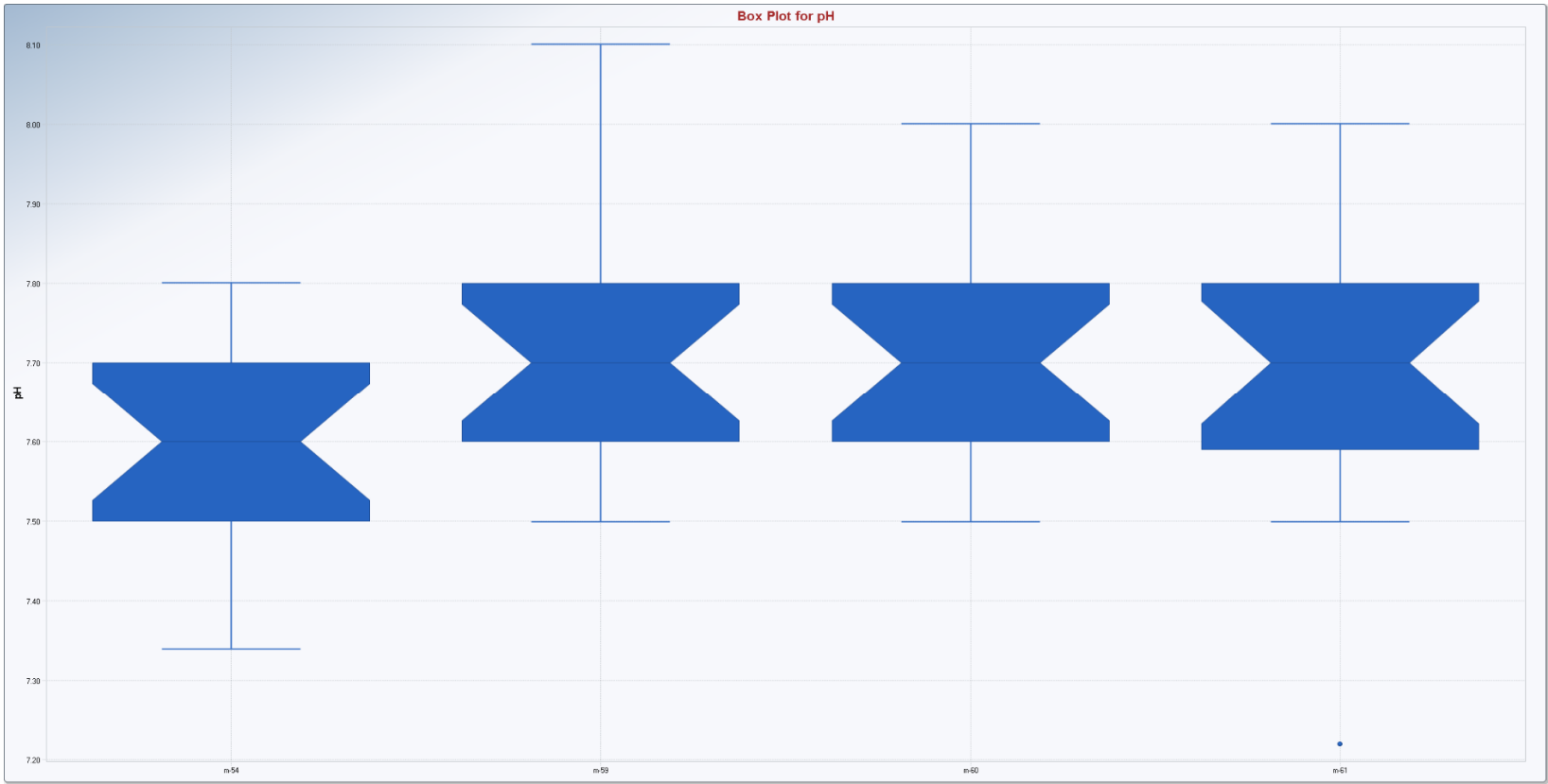
APPENDIX B

PROUCL EDA OUTPUT FILES

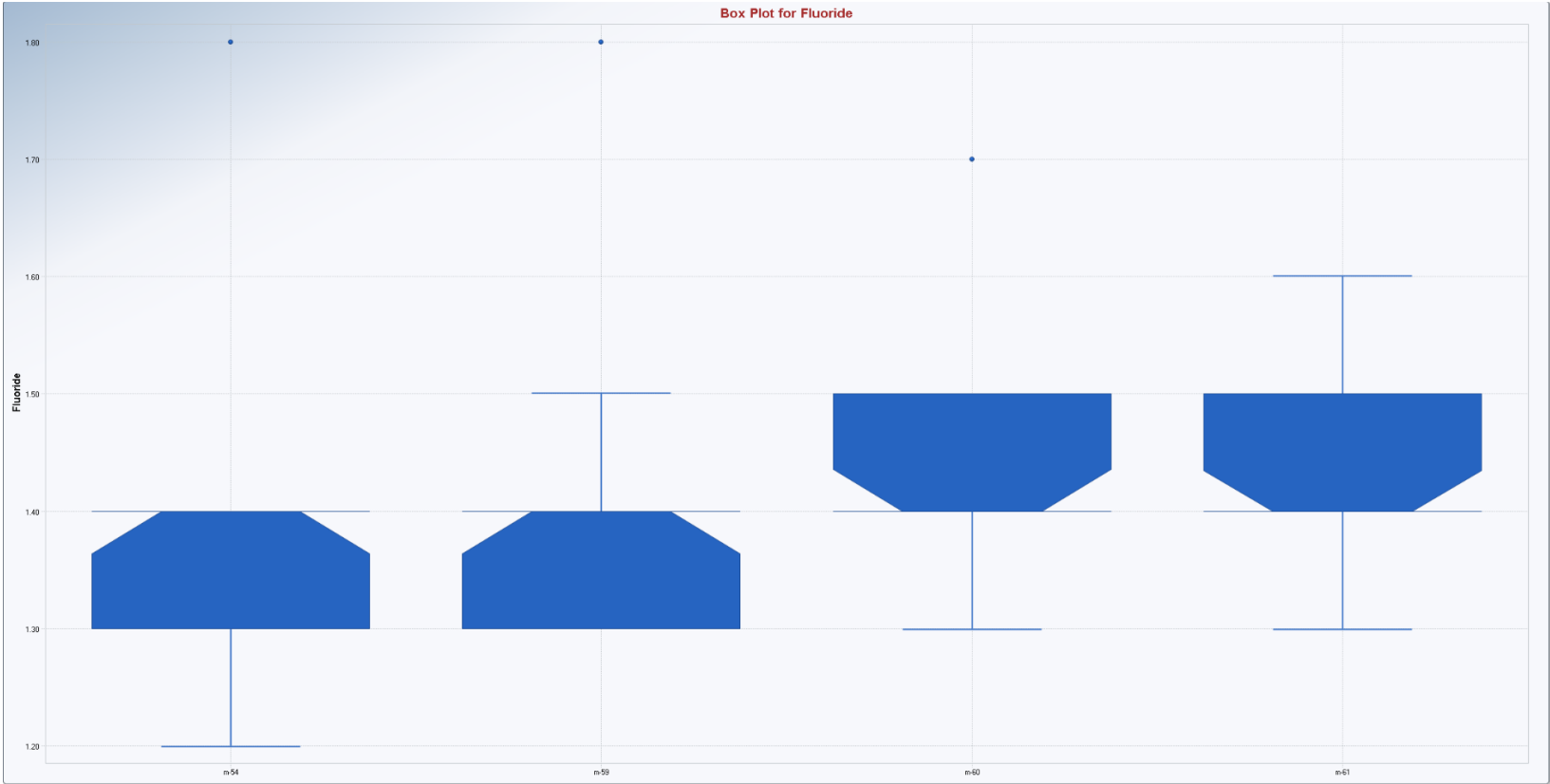
Appendix B
Box and Whisker Plots



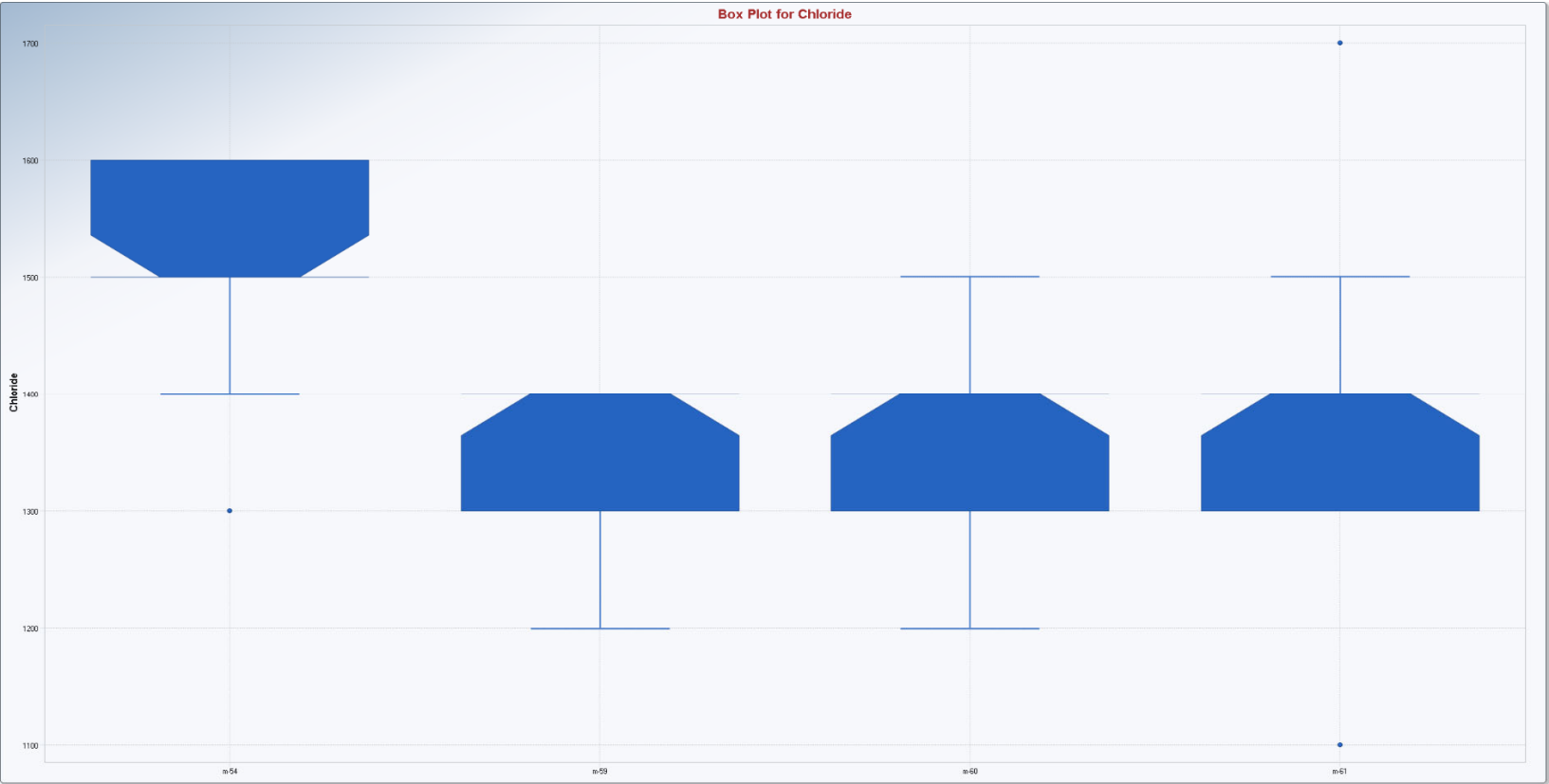
Appendix B
Box and Whisker Plots



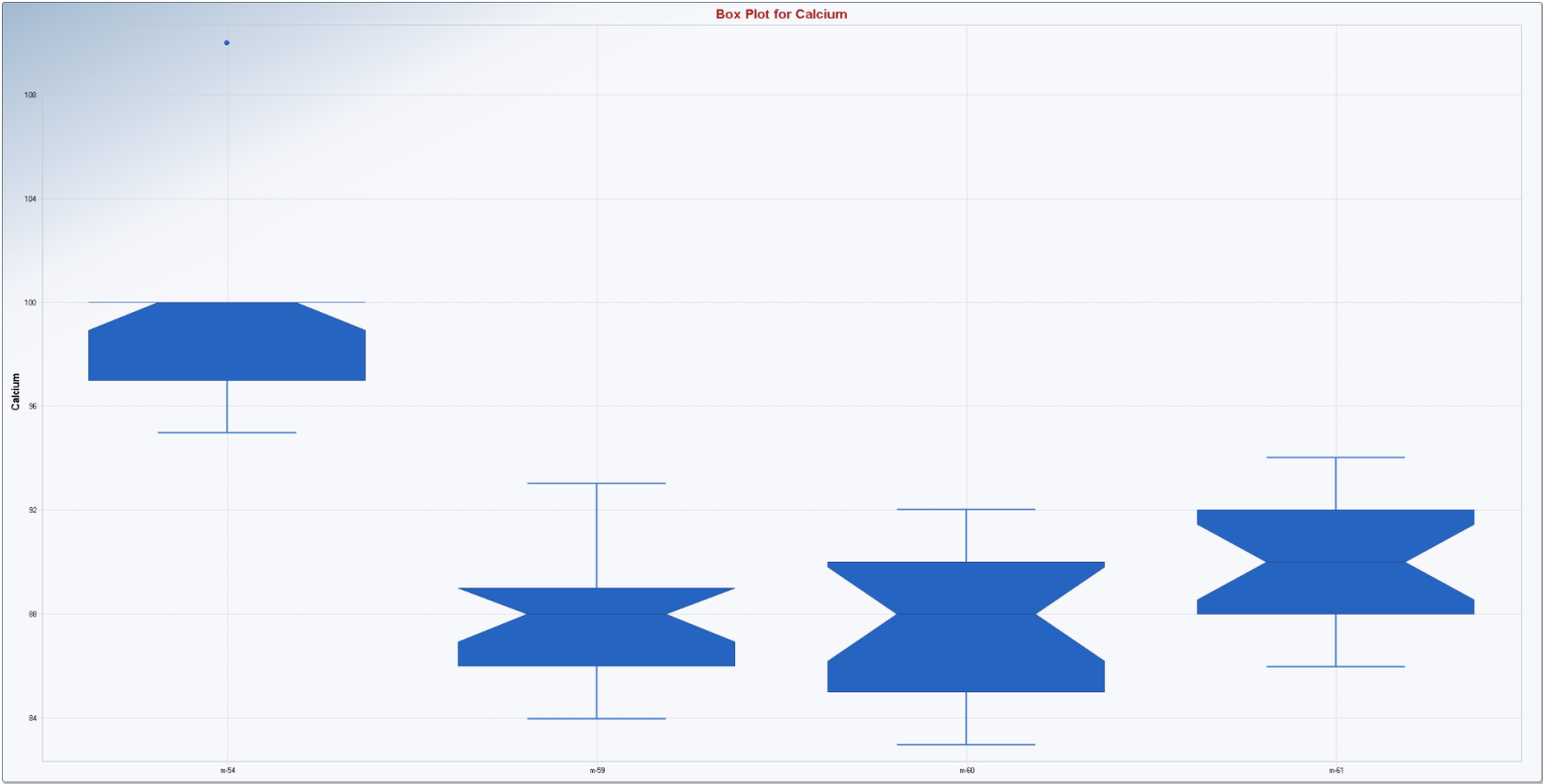
Appendix B
Box and Whisker Plots



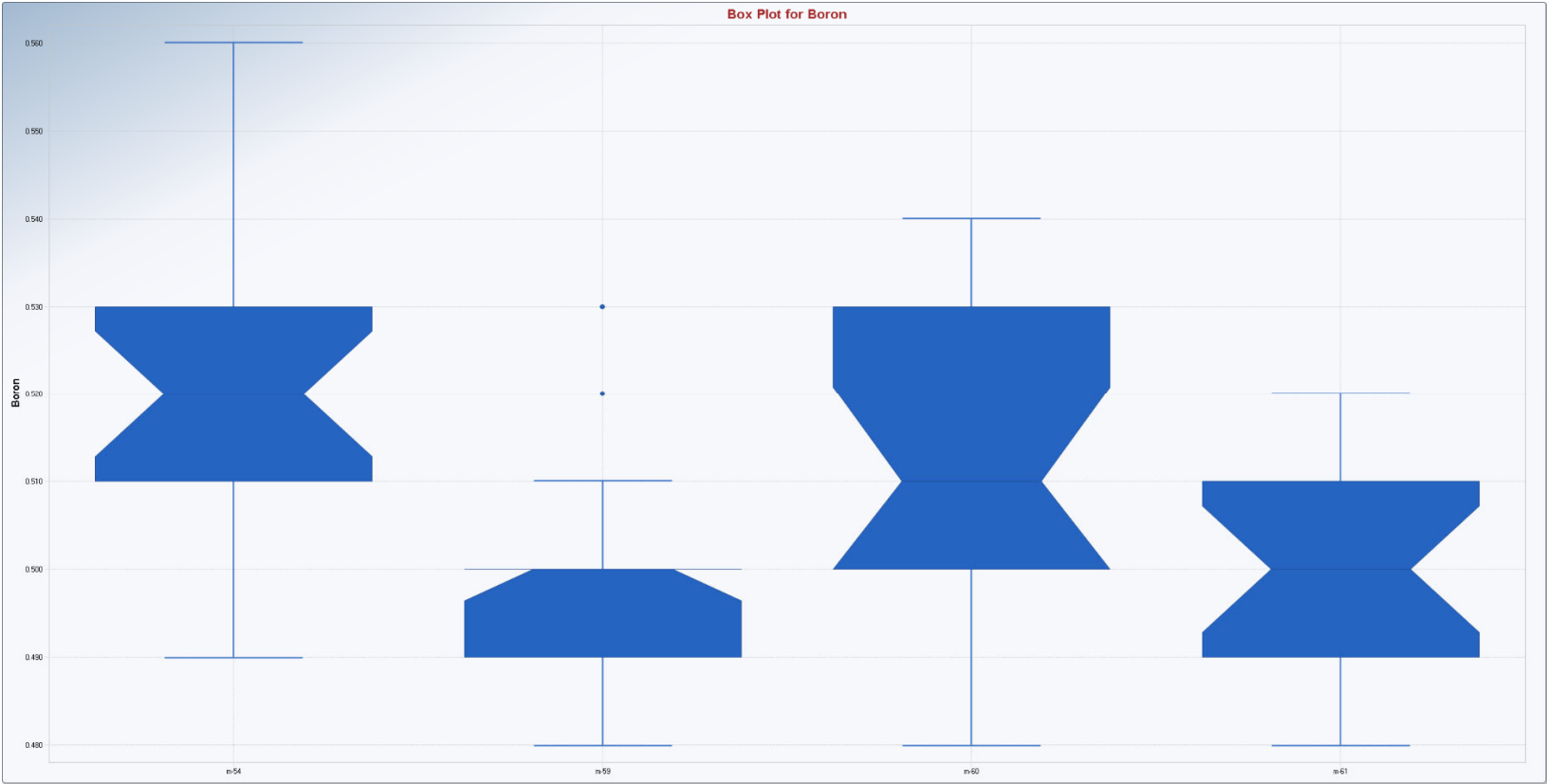
Appendix B
Box and Whisker Plots



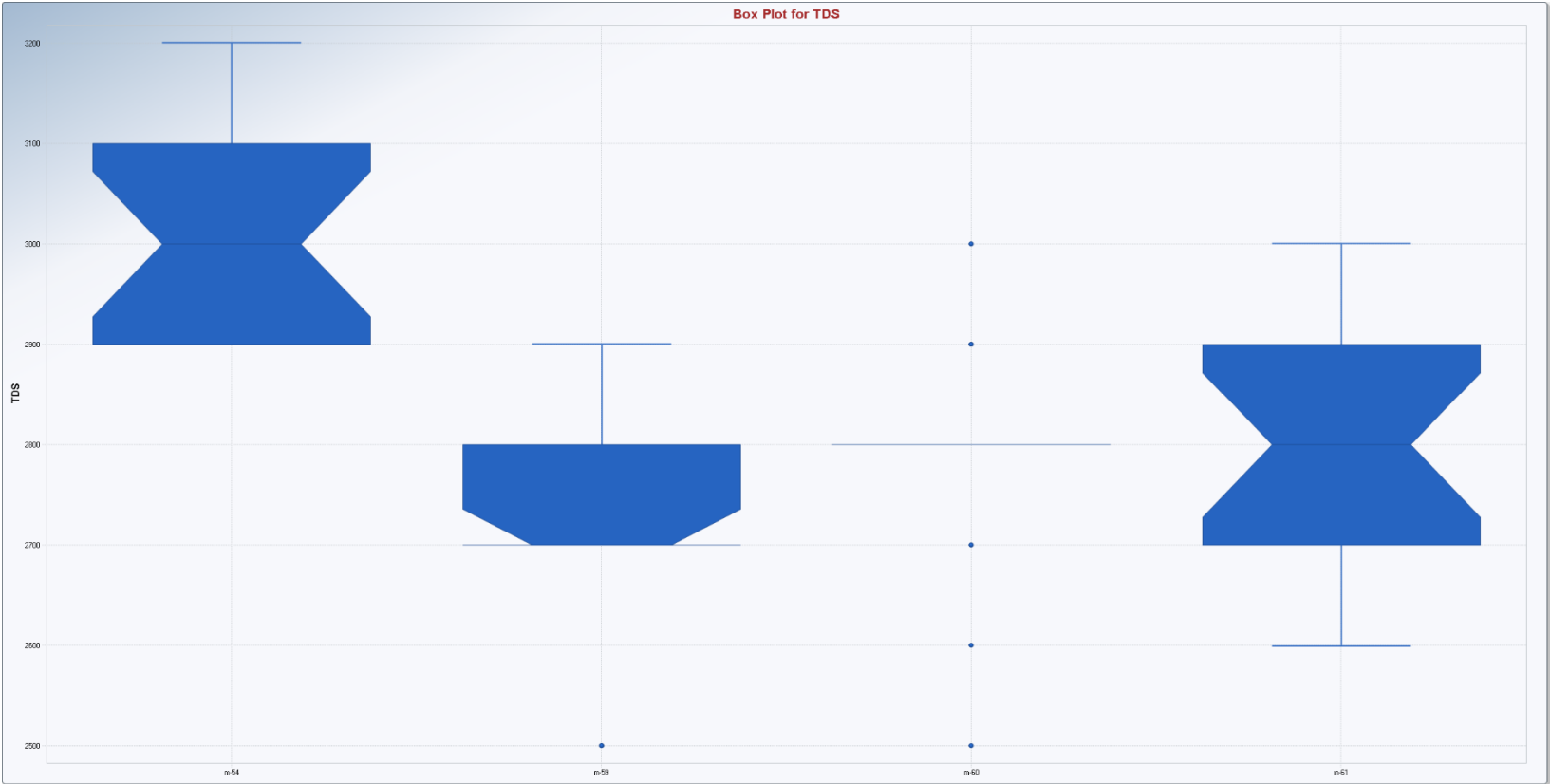
Appendix B
Box and Whisker Plots



Appendix B
Box and Whisker Plots



Appendix B
Box and Whisker Plots



Appendix B Goodness of Fit Statistics

User Selected Options		Goodness-of-Fit Test Statistics for Data Sets with Non-Detects					
From File	Cholla_BAM_ProUCL_2020.xls						
Full Precision	OFF						
Confidence Coefficient	0.95						
Boron (m-54)							
Raw Statistics							
Number of Valid Observations	19						
Number of Distinct Observations	7						
Minimum	0.49						
Maximum	0.56						
Mean of Raw Data	0.518						
Standard Deviation of Raw Data	0.0174						
Khat	949.6						
Theta hat	5.4592E-4						
Kstar	799.7						
Theta star	6.4825E-4						
Mean of Log Transformed Data	-0.657						
Standard Deviation of Log Transformed Data	0.0332						
Normal GOF Test Results							
Correlation Coefficient R	0.964						
Shapiro Wilk Test Statistic	0.934						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	0.202						
Lilliefors Test Statistic	0.159						
Lilliefors Critical (0.05) Value	0.197						
Data appear Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.967						
A-D Test Statistic	0.518						
A-D Critical (0.05) Value	0.738						

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
K-S Test Statistic	0.163						
K-S Critical(0.05) Value	0.198						
Data appear Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.967						
Shapiro Wilk Test Statistic	0.94						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	0.267						
Lilliefors Test Statistic	0.157						
Lilliefors Critical (0.05) Value	0.197						
Data appear Lognormal at (0.05) Significance Level							
Boron (m-59)							
Raw Statistics							
Number of Valid Observations	19						
Number of Distinct Observations	6						
Minimum	0.48						
Maximum	0.53						
Mean of Raw Data	0.496						
Standard Deviation of Raw Data	0.0134						
Khat	1464						
Theta hat	3.3907E-4						
Kstar	1233						
Theta star	4.0264E-4						
Mean of Log Transformed Data	-0.701						
Standard Deviation of Log Transformed Data	0.0268						
Normal GOF Test Results							
Correlation Coefficient R	0.94						
Shapiro Wilk Test Statistic	0.884						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	0.0239						
Lilliefors Test Statistic	0.234						

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
Lilliefors Critical (0.05) Value	0.197						
Data not Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.943						
A-D Test Statistic	0.843						
A-D Critical (0.05) Value	0.738						
K-S Test Statistic	0.227						
K-S Critical(0.05) Value	0.198						
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.943						
Shapiro Wilk Test Statistic	0.889						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	0.03						
Lilliefors Test Statistic	0.228						
Lilliefors Critical (0.05) Value	0.197						
Data not Lognormal at (0.05) Significance Level							
Non-parametric GOF Test Results							
Data do not follow a discernible distribution at (0.05) Level of Significance							
Boron (m-60)							
Raw Statistics							
Number of Valid Observations	19						
Number of Distinct Observations	7						
Minimum	0.48						
Maximum	0.54						
Mean of Raw Data	0.511						
Standard Deviation of Raw Data	0.0159						
Khat	1084						
Theta hat	4.7124E-4						

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
Kstar	913.3						
Theta star	5.5958E-4						
Mean of Log Transformed Data	-0.672						
Standard Deviation of Log Transformed Data	0.0312						
Normal GOF Test Results							
Correlation Coefficient R	0.97						
Shapiro Wilk Test Statistic	0.939						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	0.275						
Lilliefors Test Statistic	0.177						
Lilliefors Critical (0.05) Value	0.197						
Data appear Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.97						
A-D Test Statistic	0.624						
A-D Critical (0.05) Value	0.738						
K-S Test Statistic	0.181						
K-S Critical(0.05) Value	0.198						
Data appear Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.971						
Shapiro Wilk Test Statistic	0.94						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	0.283						
Lilliefors Test Statistic	0.175						
Lilliefors Critical (0.05) Value	0.197						
Data appear Lognormal at (0.05) Significance Level							
Boron (m-61)							
Raw Statistics							

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
Number of Valid Observations	19						
Number of Missing Observations	1						
Number of Distinct Observations	5						
Minimum	0.48						
Maximum	0.52						
Mean of Raw Data	0.499						
Standard Deviation of Raw Data	0.012						
Khat	1833						
Theta hat	2.7217E-4						
Kstar	1544						
Theta star	3.2320E-4						
Mean of Log Transformed Data	-0.696						
Standard Deviation of Log Transformed Data	0.024						
Normal GOF Test Results							
Correlation Coefficient R	0.96						
Shapiro Wilk Test Statistic	0.913						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	0.0903						
Lilliefors Test Statistic	0.219						
Lilliefors Critical (0.05) Value	0.197						
Data appear Approximate Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.96						
A-D Test Statistic	0.77						
A-D Critical (0.05) Value	0.738						
K-S Test Statistic	0.223						
K-S Critical(0.05) Value	0.198						
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.96						
Shapiro Wilk Test Statistic	0.912						

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	0.0883						
Lilliefors Test Statistic	0.224						
Lilliefors Critical (0.05) Value	0.197						
Data appear Approximate_Lognormal at (0.05) Significance Level							
Calcium (m-54)							
Raw Statistics							
Number of Valid Observations	19						
Number of Distinct Observations	7						
Minimum	95						
Maximum	110						
Mean of Raw Data	99.16						
Standard Deviation of Raw Data	3.167						
Khat	1074						
Theta hat	0.0923						
Kstar	904.6						
Theta star	0.11						
Mean of Log Transformed Data	4.596						
Standard Deviation of Log Transformed Data	0.0311						
Normal GOF Test Results							
Correlation Coefficient R	0.839						
Shapiro Wilk Test Statistic	0.732						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	4.9288E-5						
Lilliefors Test Statistic	0.343						
Lilliefors Critical (0.05) Value	0.197						
Data not Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.846						
A-D Test Statistic	1.601						
A-D Critical (0.05) Value	0.738						

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
K-S Test Statistic	0.334						
K-S Critical(0.05) Value	0.198						
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.85						
Shapiro Wilk Test Statistic	0.75						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	9.5768E-5						
Lilliefors Test Statistic	0.334						
Lilliefors Critical (0.05) Value	0.197						
Data not Lognormal at (0.05) Significance Level							
Non-parametric GOF Test Results							
Data do not follow a discernible distribution at (0.05) Level of Significance							
Calcium (m-59)							
Raw Statistics							
Number of Valid Observations	19						
Number of Distinct Observations	9						
Minimum	84						
Maximum	93						
Mean of Raw Data	87.63						
Standard Deviation of Raw Data	2.543						
Khat	1262						
Theta hat	0.0694						
Kstar	1063						
Theta star	0.0824						
Mean of Log Transformed Data	4.473						
Standard Deviation of Log Transformed Data	0.0289						
Normal GOF Test Results							
Correlation Coefficient R	0.98						

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
Shapiro Wilk Test Statistic	0.952						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	0.461						
Lilliefors Test Statistic	0.16						
Lilliefors Critical (0.05) Value	0.197						
Data appear Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.981						
A-D Test Statistic	0.344						
A-D Critical (0.05) Value	0.738						
K-S Test Statistic	0.165						
K-S Critical(0.05) Value	0.198						
Data appear Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.981						
Shapiro Wilk Test Statistic	0.955						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	0.507						
Lilliefors Test Statistic	0.159						
Lilliefors Critical (0.05) Value	0.197						
Data appear Lognormal at (0.05) Significance Level							
Calcium (m-60)							
Raw Statistics							
Number of Valid Observations	19						
Number of Distinct Observations	9						
Minimum	83						
Maximum	92						
Mean of Raw Data	87.47						
Standard Deviation of Raw Data	2.59						
Khat	1202						
Theta hat	0.0728						

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
Kstar	1012						
Theta star	0.0864						
Mean of Log Transformed Data	4.471						
Standard Deviation of Log Transformed Data	0.0297						
Normal GOF Test Results							
Correlation Coefficient R	0.984						
Shapiro Wilk Test Statistic	0.959						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	0.596						
Lilliefors Test Statistic	0.159						
Lilliefors Critical (0.05) Value	0.197						
Data appear Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.983						
A-D Test Statistic	0.389						
A-D Critical (0.05) Value	0.738						
K-S Test Statistic	0.165						
K-S Critical(0.05) Value	0.198						
Data appear Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.984						
Shapiro Wilk Test Statistic	0.958						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	0.58						
Lilliefors Test Statistic	0.165						
Lilliefors Critical (0.05) Value	0.197						
Data appear Lognormal at (0.05) Significance Level							
Calcium (m-61)							
Raw Statistics							

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
Number of Valid Observations	19						
Number of Missing Observations	1						
Number of Distinct Observations	9						
Minimum	86						
Maximum	94						
Mean of Raw Data	90.05						
Standard Deviation of Raw Data	2.297						
Khat	1620						
Theta hat	0.0556						
Kstar	1364						
Theta star	0.066						
Mean of Log Transformed Data	4.5						
Standard Deviation of Log Transformed Data	0.0255						
Normal GOF Test Results							
Correlation Coefficient R	0.986						
Shapiro Wilk Test Statistic	0.962						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	0.662						
Lilliefors Test Statistic	0.13						
Lilliefors Critical (0.05) Value	0.197						
Data appear Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.985						
A-D Test Statistic	0.335						
A-D Critical (0.05) Value	0.738						
K-S Test Statistic	0.136						
K-S Critical(0.05) Value	0.198						
Data appear Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.986						
Shapiro Wilk Test Statistic	0.962						

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	0.65						
Lilliefors Test Statistic	0.129						
Lilliefors Critical (0.05) Value	0.197						
Data appear Lognormal at (0.05) Significance Level							
Chloride (m-54)							
Raw Statistics							
Number of Valid Observations	19						
Number of Distinct Observations	4						
Minimum	1300						
Maximum	1600						
Mean of Raw Data	1500						
Standard Deviation of Raw Data	81.65						
Khat	347						
Theta hat	4.322						
Kstar	292.3						
Theta star	5.132						
Mean of Log Transformed Data	7.312						
Standard Deviation of Log Transformed Data	0.0556						
Normal GOF Test Results							
Correlation Coefficient R	0.916						
Shapiro Wilk Test Statistic	0.841						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	0.00391						
Lilliefors Test Statistic	0.289						
Lilliefors Critical (0.05) Value	0.197						
Data not Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.912						
A-D Test Statistic	1.446						
A-D Critical (0.05) Value	0.738						

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
K-S Test Statistic	0.297						
K-S Critical(0.05) Value	0.198						
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.912						
Shapiro Wilk Test Statistic	0.834						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	0.00293						
Lilliefors Test Statistic	0.3						
Lilliefors Critical (0.05) Value	0.197						
Data not Lognormal at (0.05) Significance Level							
Non-parametric GOF Test Results							
Data do not follow a discernible distribution at (0.05) Level of Significance							
Chloride (m-59)							
Raw Statistics							
Number of Valid Observations	19						
Number of Distinct Observations	3						
Minimum	1200						
Maximum	1400						
Mean of Raw Data	1337						
Standard Deviation of Raw Data	76.09						
Khat	316.6						
Theta hat	4.222						
Kstar	266.7						
Theta star	5.013						
Mean of Log Transformed Data	7.196						
Standard Deviation of Log Transformed Data	0.0582						
Normal GOF Test Results							
Correlation Coefficient R	0.878						

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
Shapiro Wilk Test Statistic	0.753						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	1.4578E-4						
Lilliefors Test Statistic	0.323						
Lilliefors Critical (0.05) Value	0.197						
Data not Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.868						
A-D Test Statistic	2.075						
A-D Critical (0.05) Value	0.738						
K-S Test Statistic	0.328						
K-S Critical(0.05) Value	0.198						
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.876						
Shapiro Wilk Test Statistic	0.751						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	1.3343E-4						
Lilliefors Test Statistic	0.32						
Lilliefors Critical (0.05) Value	0.197						
Data not Lognormal at (0.05) Significance Level							
Non-parametric GOF Test Results							
Data do not follow a discernible distribution at (0.05) Level of Significance							
Chloride (m-60)							
Raw Statistics							
Number of Valid Observations	19						
Number of Distinct Observations	4						
Minimum	1200						
Maximum	1500						

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
Mean of Raw Data	1379						
Standard Deviation of Raw Data	71.33						
Khat	384.6						
Theta hat	3.586						
Kstar	323.9						
Theta star	4.257						
Mean of Log Transformed Data	7.228						
Standard Deviation of Log Transformed Data	0.0528						
Normal GOF Test Results							
Correlation Coefficient R	0.889						
Shapiro Wilk Test Statistic	0.805						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	8.0297E-4						
Lilliefors Test Statistic	0.353						
Lilliefors Critical (0.05) Value	0.197						
Data not Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.888						
A-D Test Statistic	2.076						
A-D Critical (0.05) Value	0.738						
K-S Test Statistic	0.36						
K-S Critical(0.05) Value	0.198						
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.884						
Shapiro Wilk Test Statistic	0.798						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	6.0712E-4						
Lilliefors Test Statistic	0.359						
Lilliefors Critical (0.05) Value	0.197						
Data not Lognormal at (0.05) Significance Level							

Appendix B Goodness of Fit Statistics

Number of Valid Observations		19						
Non-parametric GOF Test Results								
Data do not follow a discernible distribution at (0.05) Level of Significance								
Chloride (m-61)								
Raw Statistics								
Number of Valid Observations		19						
Number of Missing Observations		1						
Number of Distinct Observations		5						
Minimum		1100						
Maximum		1700						
Mean of Raw Data		1389						
Standard Deviation of Raw Data		115						
Khat		153.3						
Theta hat		9.066						
Kstar		129.1						
Theta star		10.76						
Mean of Log Transformed Data		7.233						
Standard Deviation of Log Transformed Data		0.0834						
Normal GOF Test Results								
Correlation Coefficient R		0.885						
Shapiro Wilk Test Statistic		0.819						
Shapiro Wilk Critical (0.05) Value		0.901						
Approximate Shapiro Wilk P Value		0.00122						
Lilliefors Test Statistic		0.306						
Lilliefors Critical (0.05) Value		0.197						
Data not Normal at (0.05) Significance Level								
Gamma GOF Test Results								
Correlation Coefficient R		0.891						
A-D Test Statistic		1.706						
A-D Critical (0.05) Value		0.738						

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
K-S Test Statistic	0.294						
K-S Critical(0.05) Value	0.198						
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.883						
Shapiro Wilk Test Statistic	0.816						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	0.00111						
Lilliefors Test Statistic	0.291						
Lilliefors Critical (0.05) Value	0.197						
Data not Lognormal at (0.05) Significance Level							
Non-parametric GOF Test Results							
Data do not follow a discernible distribution at (0.05) Level of Significance							
Fluoride (m-54)							
Raw Statistics							
Number of Valid Observations	19						
Number of Distinct Observations	4						
Minimum	1.2						
Maximum	1.8						
Mean of Raw Data	1.368						
Standard Deviation of Raw Data	0.125						
Khat	139.6						
Theta hat	0.00981						
Kstar	117.6						
Theta star	0.0116						
Mean of Log Transformed Data	0.31						
Standard Deviation of Log Transformed Data	0.0851						
Normal GOF Test Results							
Correlation Coefficient R	0.819						

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
Shapiro Wilk Test Statistic	0.701						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	1.6504E-5						
Lilliefors Test Statistic	0.348						
Lilliefors Critical (0.05) Value	0.197						
Data not Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.832						
A-D Test Statistic	1.854						
A-D Critical (0.05) Value	0.738						
K-S Test Statistic	0.33						
K-S Critical(0.05) Value	0.198						
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.848						
Shapiro Wilk Test Statistic	0.747						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	8.3800E-5						
Lilliefors Test Statistic	0.326						
Lilliefors Critical (0.05) Value	0.197						
Data not Lognormal at (0.05) Significance Level							
Non-parametric GOF Test Results							
Data do not follow a discernible distribution at (0.05) Level of Significance							
Fluoride (m-59)							
Raw Statistics							
Number of Valid Observations	19						
Number of Distinct Observations	4						
Minimum	1.3						
Maximum	1.8						

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
Mean of Raw Data	1.405						
Standard Deviation of Raw Data	0.113						
Khat	181						
Theta hat	0.00776						
Kstar	152.5						
Theta star	0.00922						
Mean of Log Transformed Data	0.337						
Standard Deviation of Log Transformed Data	0.0746						
Normal GOF Test Results							
Correlation Coefficient R	0.806						
Shapiro Wilk Test Statistic	0.674						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	6.7630E-6						
Lilliefors Test Statistic	0.361						
Lilliefors Critical (0.05) Value	0.197						
Data not Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.822						
A-D Test Statistic	2.094						
A-D Critical (0.05) Value	0.738						
K-S Test Statistic	0.352						
K-S Critical(0.05) Value	0.198						
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.83						
Shapiro Wilk Test Statistic	0.711						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	2.4105E-5						
Lilliefors Test Statistic	0.347						
Lilliefors Critical (0.05) Value	0.197						
Data not Lognormal at (0.05) Significance Level							

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
Non-parametric GOF Test Results							
Data do not follow a discernible distribution at (0.05) Level of Significance							
Fluoride (m-60)							
Raw Statistics							
Number of Valid Observations	19						
Number of Distinct Observations	4						
Minimum	1.3						
Maximum	1.7						
Mean of Raw Data	1.447						
Standard Deviation of Raw Data	0.0841						
Khat	325.3						
Theta hat	0.00445						
Kstar	273.9						
Theta star	0.00528						
Mean of Log Transformed Data	0.368						
Standard Deviation of Log Transformed Data	0.0565						
Normal GOF Test Results							
Correlation Coefficient R	0.869						
Shapiro Wilk Test Statistic	0.781						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	3.1321E-4						
Lilliefors Test Statistic	0.292						
Lilliefors Critical (0.05) Value	0.197						
Data not Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.878						
A-D Test Statistic	1.797						
A-D Critical (0.05) Value	0.738						
K-S Test Statistic	0.297						

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
K-S Critical(0.05) Value	0.198						
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.879						
Shapiro Wilk Test Statistic	0.797						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	5.9361E-4						
Lilliefors Test Statistic	0.292						
Lilliefors Critical (0.05) Value	0.197						
Data not Lognormal at (0.05) Significance Level							
Non-parametric GOF Test Results							
Data do not follow a discernible distribution at (0.05) Level of Significance							
Fluoride (m-61)							
Raw Statistics							
Number of Valid Observations	20						
Number of Distinct Observations	4						
Minimum	1.3						
Maximum	1.6						
Mean of Raw Data	1.43						
Standard Deviation of Raw Data	0.0801						
Khat	334.8						
Theta hat	0.00427						
Kstar	284.6						
Theta star	0.00502						
Mean of Log Transformed Data	0.356						
Standard Deviation of Log Transformed Data	0.0561						
Normal GOF Test Results							
Correlation Coefficient R	0.933						
Shapiro Wilk Test Statistic	0.87						

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
Shapiro Wilk Critical (0.05) Value	0.905						
Approximate Shapiro Wilk P Value	0.0113						
Lilliefors Test Statistic	0.246						
Lilliefors Critical (0.05) Value	0.192						
Data not Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.933						
A-D Test Statistic	1.349						
A-D Critical (0.05) Value	0.74						
K-S Test Statistic	0.244						
K-S Critical(0.05) Value	0.193						
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.933						
Shapiro Wilk Test Statistic	0.869						
Shapiro Wilk Critical (0.05) Value	0.905						
Approximate Shapiro Wilk P Value	0.0107						
Lilliefors Test Statistic	0.237						
Lilliefors Critical (0.05) Value	0.192						
Data not Lognormal at (0.05) Significance Level							
Non-parametric GOF Test Results							
Data do not follow a discernible distribution at (0.05) Level of Significance							
pH (m-54)							
Raw Statistics							
Number of Valid Observations	18						
Number of Missing Observations	1						
Number of Distinct Observations	7						
Minimum	7.34						
Maximum	7.8						

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
Mean of Raw Data	7.572						
Standard Deviation of Raw Data	0.132						
Khat	3487						
Theta hat	0.00217						
Kstar	2906						
Theta star	0.00261						
Mean of Log Transformed Data	2.024						
Standard Deviation of Log Transformed Data	0.0174						
Normal GOF Test Results							
Correlation Coefficient R	0.972						
Shapiro Wilk Test Statistic	0.936						
Shapiro Wilk Critical (0.05) Value	0.897						
Approximate Shapiro Wilk P Value	0.283						
Lilliefors Test Statistic	0.167						
Lilliefors Critical (0.05) Value	0.202						
Data appear Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.97						
A-D Test Statistic	0.561						
A-D Critical (0.05) Value	0.737						
K-S Test Statistic	0.174						
K-S Critical(0.05) Value	0.203						
Data appear Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.971						
Shapiro Wilk Test Statistic	0.935						
Shapiro Wilk Critical (0.05) Value	0.897						
Approximate Shapiro Wilk P Value	0.275						
Lilliefors Test Statistic	0.167						
Lilliefors Critical (0.05) Value	0.202						
Data appear Lognormal at (0.05) Significance Level							

Appendix B Goodness of Fit Statistics

Number of Valid Observations		19						
pH (m-59)								
Raw Statistics								
Number of Valid Observations		18						
Number of Missing Observations		1						
Number of Distinct Observations		8						
Minimum		7.5						
Maximum		8.1						
Mean of Raw Data		7.694						
Standard Deviation of Raw Data		0.154						
Khat		2660						
Theta hat		0.00289						
Kstar		2216						
Theta star		0.00347						
Mean of Log Transformed Data		2.04						
Standard Deviation of Log Transformed Data		0.0199						
Normal GOF Test Results								
Correlation Coefficient R		0.953						
Shapiro Wilk Test Statistic		0.912						
Shapiro Wilk Critical (0.05) Value		0.897						
Approximate Shapiro Wilk P Value		0.0924						
Lilliefors Test Statistic		0.174						
Lilliefors Critical (0.05) Value		0.202						
Data appear Normal at (0.05) Significance Level								
Gamma GOF Test Results								
Correlation Coefficient R		0.955						
A-D Test Statistic		0.545						
A-D Critical (0.05) Value		0.737						
K-S Test Statistic		0.185						
K-S Critical(0.05) Value		0.203						
Data appear Gamma Distributed at (0.05) Significance Level								

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
Lognormal GOF Test Results							
Correlation Coefficient R	0.956						
Shapiro Wilk Test Statistic	0.917						
Shapiro Wilk Critical (0.05) Value	0.897						
Approximate Shapiro Wilk P Value	0.113						
Lilliefors Test Statistic	0.174						
Lilliefors Critical (0.05) Value	0.202						
Data appear Lognormal at (0.05) Significance Level							
pH (m-60)							
Raw Statistics							
Number of Valid Observations	18						
Number of Missing Observations	1						
Number of Distinct Observations	7						
Minimum	7.5						
Maximum	8						
Mean of Raw Data	7.688						
Standard Deviation of Raw Data	0.127						
Khat	3905						
Theta hat	0.00197						
Kstar	3254						
Theta star	0.00236						
Mean of Log Transformed Data	2.04						
Standard Deviation of Log Transformed Data	0.0164						
Normal GOF Test Results							
Correlation Coefficient R	0.964						
Shapiro Wilk Test Statistic	0.933						
Shapiro Wilk Critical (0.05) Value	0.897						
Approximate Shapiro Wilk P Value	0.215						
Lilliefors Test Statistic	0.186						
Lilliefors Critical (0.05) Value	0.202						
Data appear Normal at (0.05) Significance Level							

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
Gamma GOF Test Results							
Correlation Coefficient R	0.965						
A-D Test Statistic	0.543						
A-D Critical (0.05) Value	0.737						
K-S Test Statistic	0.182						
K-S Critical(0.05) Value	0.203						
Data appear Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.965						
Shapiro Wilk Test Statistic	0.935						
Shapiro Wilk Critical (0.05) Value	0.897						
Approximate Shapiro Wilk P Value	0.239						
Lilliefors Test Statistic	0.182						
Lilliefors Critical (0.05) Value	0.202						
Data appear Lognormal at (0.05) Significance Level							
pH (m-61)							
Raw Statistics							
Number of Valid Observations	18						
Number of Missing Observations	2						
Number of Distinct Observations	8						
Minimum	7.22						
Maximum	8						
Mean of Raw Data	7.667						
Standard Deviation of Raw Data	0.179						
Khat	1932						
Theta hat	0.00397						
Kstar	1610						
Theta star	0.00476						
Mean of Log Transformed Data	2.037						
Standard Deviation of Log Transformed Data	0.0235						
Normal GOF Test Results							

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
Correlation Coefficient R	0.969						
Shapiro Wilk Test Statistic	0.952						
Shapiro Wilk Critical (0.05) Value	0.897						
Approximate Shapiro Wilk P Value	0.423						
Lilliefors Test Statistic	0.128						
Lilliefors Critical (0.05) Value	0.202						
Data appear Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.97						
A-D Test Statistic	0.395						
A-D Critical (0.05) Value	0.737						
K-S Test Statistic	0.133						
K-S Critical(0.05) Value	0.203						
Data appear Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.966						
Shapiro Wilk Test Statistic	0.948						
Shapiro Wilk Critical (0.05) Value	0.897						
Approximate Shapiro Wilk P Value	0.358						
Lilliefors Test Statistic	0.132						
Lilliefors Critical (0.05) Value	0.202						
Data appear Lognormal at (0.05) Significance Level							
Sulfate (m-54)							
Raw Statistics							
Number of Valid Observations	19						
Number of Distinct Observations	5						
Minimum	340						
Maximum	380						
Mean of Raw Data	361.1						
Standard Deviation of Raw Data	11.97						

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
Khat	963.6						
Theta hat	0.375						
Kstar	811.5						
Theta star	0.445						
Mean of Log Transformed Data	5.889						
Standard Deviation of Log Transformed Data	0.0331						
Normal GOF Test Results							
Correlation Coefficient R	0.959						
Shapiro Wilk Test Statistic	0.909						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	0.0814						
Lilliefors Test Statistic	0.191						
Lilliefors Critical (0.05) Value	0.197						
Data appear Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.958						
A-D Test Statistic	0.779						
A-D Critical (0.05) Value	0.738						
K-S Test Statistic	0.197						
K-S Critical(0.05) Value	0.198						
Data follow Appr. Gamma Distribution at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.96						
Shapiro Wilk Test Statistic	0.911						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	0.0879						
Lilliefors Test Statistic	0.191						
Lilliefors Critical (0.05) Value	0.197						
Data appear Lognormal at (0.05) Significance Level							
Sulfate (m-59)							

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
Raw Statistics							
Number of Valid Observations	19						
Number of Distinct Observations	5						
Minimum	330						
Maximum	370						
Mean of Raw Data	348.4						
Standard Deviation of Raw Data	10.15						
Khat	1244						
Theta hat	0.28						
Kstar	1047						
Theta star	0.333						
Mean of Log Transformed Data	5.853						
Standard Deviation of Log Transformed Data	0.0291						
Normal GOF Test Results							
Correlation Coefficient R	0.952						
Shapiro Wilk Test Statistic	0.911						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	0.0756						
Lilliefors Test Statistic	0.246						
Lilliefors Critical (0.05) Value	0.197						
Data appear Approximate Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.953						
A-D Test Statistic	0.95						
A-D Critical (0.05) Value	0.738						
K-S Test Statistic	0.251						
K-S Critical(0.05) Value	0.198						
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.952						

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
Shapiro Wilk Test Statistic	0.91						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	0.0731						
Lilliefors Test Statistic	0.251						
Lilliefors Critical (0.05) Value	0.197						
Data appear Approximate_Lognormal at (0.05) Significance Level							
Sulfate (m-60)							
Raw Statistics							
Number of Valid Observations	19						
Number of Distinct Observations	5						
Minimum	340						
Maximum	440						
Mean of Raw Data	358.4						
Standard Deviation of Raw Data	20.89						
Khat	348.4						
Theta hat	1.029						
Kstar	293.4						
Theta star	1.222						
Mean of Log Transformed Data	5.88						
Standard Deviation of Log Transformed Data	0.0535						
Normal GOF Test Results							
Correlation Coefficient R	0.694						
Shapiro Wilk Test Statistic	0.515						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	5.0503E-8						
Lilliefors Test Statistic	0.365						
Lilliefors Critical (0.05) Value	0.197						
Data not Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.712						
A-D Test Statistic	3.174						

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
A-D Critical (0.05) Value	0.738						
K-S Test Statistic	0.355						
K-S Critical(0.05) Value	0.198						
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.714						
Shapiro Wilk Test Statistic	0.544						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	1.1428E-7						
Lilliefors Test Statistic	0.351						
Lilliefors Critical (0.05) Value	0.197						
Data not Lognormal at (0.05) Significance Level							
Non-parametric GOF Test Results							
Data do not follow a discernible distribution at (0.05) Level of Significance							
Sulfate (m-61)							
Raw Statistics							
Number of Valid Observations	19						
Number of Missing Observations	1						
Number of Distinct Observations	7						
Minimum	340						
Maximum	420						
Mean of Raw Data	361.1						
Standard Deviation of Raw Data	19.41						
Khat	384.1						
Theta hat	0.94						
Kstar	323.5						
Theta star	1.116						
Mean of Log Transformed Data	5.888						
Standard Deviation of Log Transformed Data	0.0518						
Normal GOF Test Results							

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
Correlation Coefficient R	0.905						
Shapiro Wilk Test Statistic	0.832						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	0.00243						
Lilliefors Test Statistic	0.258						
Lilliefors Critical (0.05) Value	0.197						
Data not Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.915						
A-D Test Statistic	0.985						
A-D Critical (0.05) Value	0.738						
K-S Test Statistic	0.253						
K-S Critical(0.05) Value	0.198						
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.918						
Shapiro Wilk Test Statistic	0.852						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	0.00579						
Lilliefors Test Statistic	0.249						
Lilliefors Critical (0.05) Value	0.197						
Data not Lognormal at (0.05) Significance Level							
Non-parametric GOF Test Results							
Data do not follow a discernible distribution at (0.05) Level of Significance							
TDS (m-54)							
Raw Statistics							
Number of Valid Observations	19						
Number of Distinct Observations	4						

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
Minimum	2900						
Maximum	3200						
Mean of Raw Data	3037						
Standard Deviation of Raw Data	106.5						
Khat	858.7						
Theta hat	3.537						
Kstar	723.1						
Theta star	4.199						
Mean of Log Transformed Data	8.018						
Standard Deviation of Log Transformed Data	0.0351						
Normal GOF Test Results							
Correlation Coefficient R	0.948						
Shapiro Wilk Test Statistic	0.877						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	0.0217						
Lilliefors Test Statistic	0.197						
Lilliefors Critical (0.05) Value	0.197						
Data not Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.945						
A-D Test Statistic	0.93						
A-D Critical (0.05) Value	0.738						
K-S Test Statistic	0.205						
K-S Critical(0.05) Value	0.198						
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.947						
Shapiro Wilk Test Statistic	0.876						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	0.0212						
Lilliefors Test Statistic	0.201						

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
Lilliefors Critical (0.05) Value	0.197						
Data not Lognormal at (0.05) Significance Level							
Non-parametric GOF Test Results							
Data do not follow a discernible distribution at (0.05) Level of Significance							
TDS (m-59)							
Raw Statistics							
Number of Valid Observations	19						
Number of Distinct Observations	4						
Minimum	2500						
Maximum	2900						
Mean of Raw Data	2721						
Standard Deviation of Raw Data	97.63						
Khat	803.2						
Theta hat	3.388						
Kstar	676.4						
Theta star	4.023						
Mean of Log Transformed Data	7.908						
Standard Deviation of Log Transformed Data	0.0365						
Normal GOF Test Results							
Correlation Coefficient R	0.896						
Shapiro Wilk Test Statistic	0.815						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	0.00122						
Lilliefors Test Statistic	0.309						
Lilliefors Critical (0.05) Value	0.197						
Data not Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.896						
A-D Test Statistic	1.706						

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
A-D Critical (0.05) Value	0.738						
K-S Test Statistic	0.312						
K-S Critical(0.05) Value	0.198						
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.89						
Shapiro Wilk Test Statistic	0.805						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	8.2968E-4						
Lilliefors Test Statistic	0.317						
Lilliefors Critical (0.05) Value	0.197						
Data not Lognormal at (0.05) Significance Level							
Non-parametric GOF Test Results							
Data do not follow a discernible distribution at (0.05) Level of Significance							
TDS (m-60)							
Raw Statistics							
Number of Valid Observations	19						
Number of Distinct Observations	6						
Minimum	2500						
Maximum	3000						
Mean of Raw Data	2795						
Standard Deviation of Raw Data	107.9						
Khat	689.1						
Theta hat	4.056						
Kstar	580.3						
Theta star	4.816						
Mean of Log Transformed Data	7.935						
Standard Deviation of Log Transformed Data	0.0394						
Normal GOF Test Results							

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
Correlation Coefficient R	0.88						
Shapiro Wilk Test Statistic	0.799						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	5.9069E-4						
Lilliefors Test Statistic	0.362						
Lilliefors Critical (0.05) Value	0.197						
Data not Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.881						
A-D Test Statistic	2.063						
A-D Critical (0.05) Value	0.738						
K-S Test Statistic	0.367						
K-S Critical(0.05) Value	0.198						
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.873						
Shapiro Wilk Test Statistic	0.788						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	3.7979E-4						
Lilliefors Test Statistic	0.368						
Lilliefors Critical (0.05) Value	0.197						
Data not Lognormal at (0.05) Significance Level							
Non-parametric GOF Test Results							
Data do not follow a discernible distribution at (0.05) Level of Significance							
TDS (m-61)							
Raw Statistics							
Number of Valid Observations	19						
Number of Missing Observations	1						
Number of Distinct Observations	5						

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
Minimum	2600						
Maximum	3000						
Mean of Raw Data	2816						
Standard Deviation of Raw Data	111.9						
Khat	670.7						
Theta hat	4.198						
Kstar	564.8						
Theta star	4.985						
Mean of Log Transformed Data	7.942						
Standard Deviation of Log Transformed Data	0.0397						
Normal GOF Test Results							
Correlation Coefficient R	0.956						
Shapiro Wilk Test Statistic	0.91						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	0.08						
Lilliefors Test Statistic	0.24						
Lilliefors Critical (0.05) Value	0.197						
Data appear Approximate Normal at (0.05) Significance Level							
Gamma GOF Test Results							
Correlation Coefficient R	0.957						
A-D Test Statistic	0.835						
A-D Critical (0.05) Value	0.738						
K-S Test Statistic	0.237						
K-S Critical(0.05) Value	0.198						
Data not Gamma Distributed at (0.05) Significance Level							
Lognormal GOF Test Results							
Correlation Coefficient R	0.957						
Shapiro Wilk Test Statistic	0.913						
Shapiro Wilk Critical (0.05) Value	0.901						
Approximate Shapiro Wilk P Value	0.0891						
Lilliefors Test Statistic	0.233						

Appendix B Goodness of Fit Statistics

Number of Valid Observations	19						
Lilliefors Critical (0.05) Value	0.197						
Data appear Approximate_Lognormal at (0.05) Significance Level							

Appendix B Summary Statistics

General Statistics on Uncensored Data

User Selected Options

From File Cholla_BAM_ProUCL_2020.xls

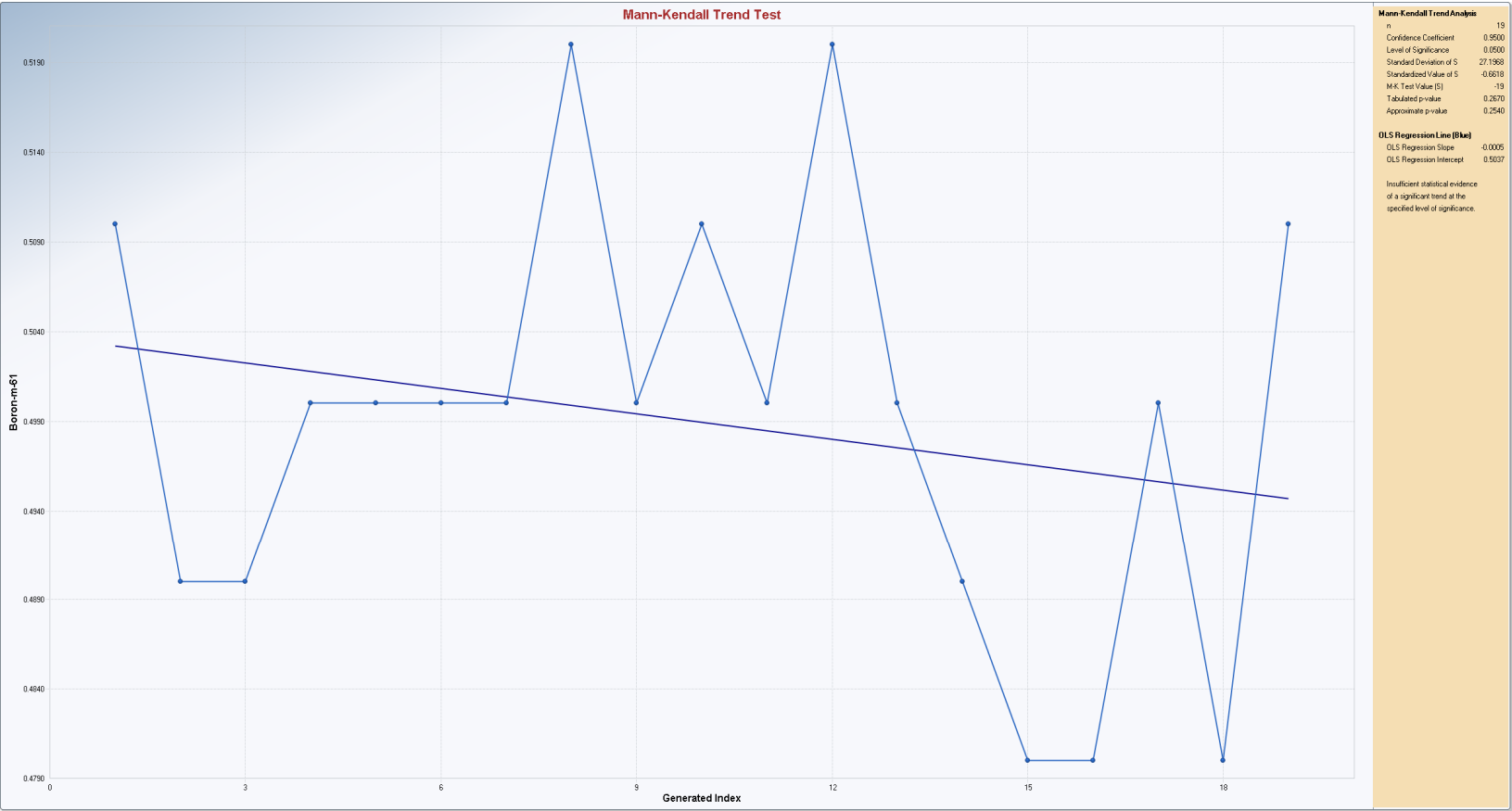
Full Precision OFF

From File: Cholla_BAM_ProUCL_2020.xls

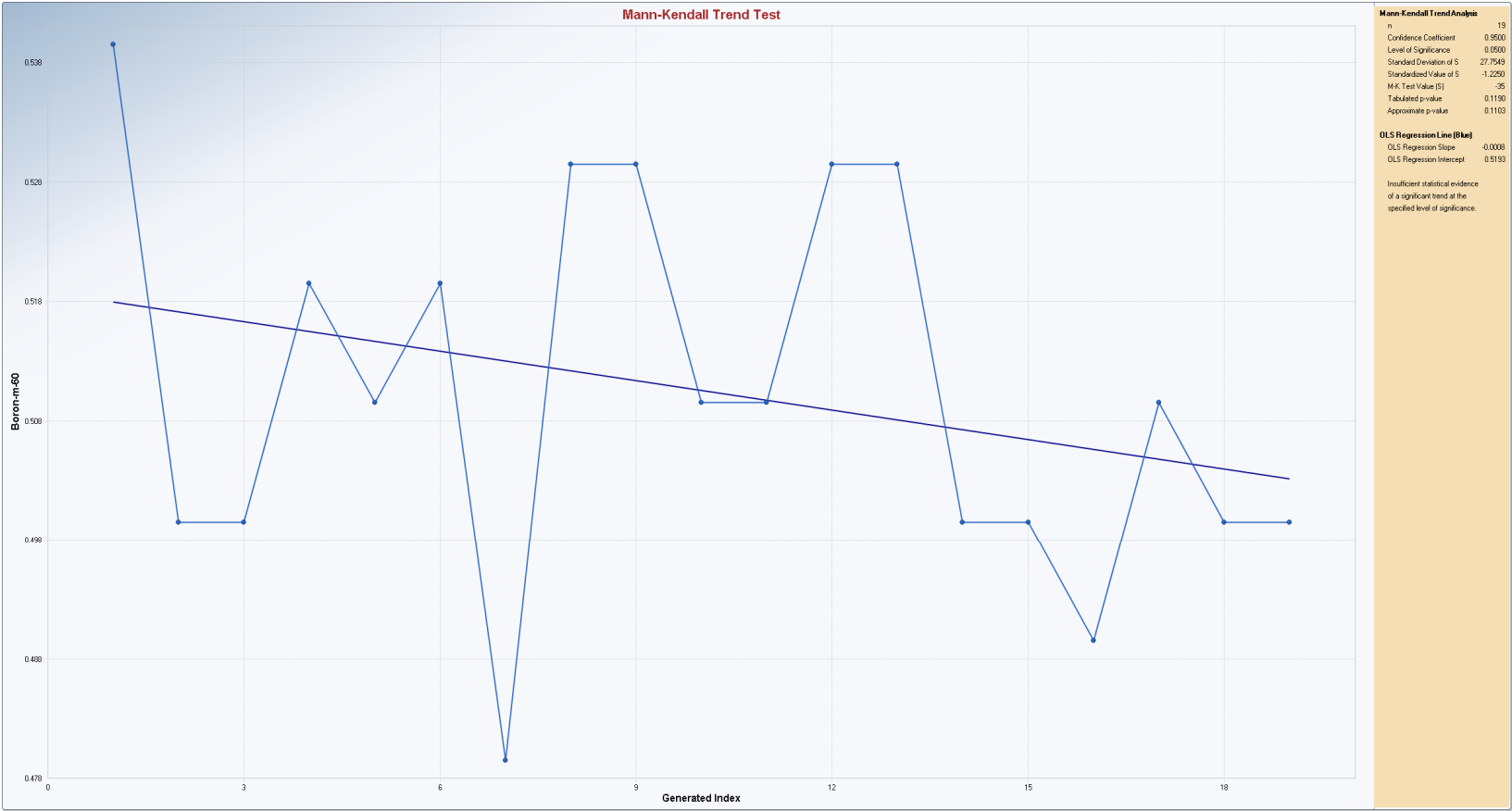
General Statistics for Censored Data Set (with NDs) using Kaplan Meier Method

Variable	NumObs	# Missing	Num Ds	NumNDs	% NDs	Min ND	Max ND	KM Mean	KM Var	KM SD	KM CV
Boron (m-54)	19	0	19	0	0.00%	N/A	N/A	0.518	3.0292E-4	0.0174	0.0336
Boron (m-59)	19	0	19	0	0.00%	N/A	N/A	0.496	1.8012E-4	0.0134	0.027
Boron (m-60)	19	0	19	0	0.00%	N/A	N/A	0.511	2.5439E-4	0.0159	0.0312
Boron (m-61)	19	1	19	0	0.00%	N/A	N/A	0.499	1.4327E-4	0.012	0.024
Calcium (m-54)	19	0	19	0	0.00%	N/A	N/A	99.16	10.03	3.167	0.0319
Calcium (m-59)	19	0	19	0	0.00%	N/A	N/A	87.63	6.468	2.543	0.029
Calcium (m-60)	19	0	19	0	0.00%	N/A	N/A	87.47	6.708	2.59	0.0296
Calcium (m-61)	19	1	19	0	0.00%	N/A	N/A	90.05	5.275	2.297	0.0255
Chloride (m-54)	19	0	19	0	0.00%	N/A	N/A	1500	6667	81.65	0.0544
Chloride (m-59)	19	0	19	0	0.00%	N/A	N/A	1337	5789	76.09	0.0569
Chloride (m-60)	19	0	19	0	0.00%	N/A	N/A	1379	5088	71.33	0.0517
Chloride (m-61)	19	1	19	0	0.00%	N/A	N/A	1389	13216	115	0.0827
Fluoride (m-54)	19	0	19	0	0.00%	N/A	N/A	1.368	0.0156	0.125	0.0913
Fluoride (m-59)	19	0	19	0	0.00%	N/A	N/A	1.405	0.0127	0.113	0.0803
Fluoride (m-60)	19	0	19	0	0.00%	N/A	N/A	1.447	0.00708	0.0841	0.0581
Fluoride (m-61)	20	0	20	0	0.00%	N/A	N/A	1.43	0.00642	0.0801	0.056
pH (m-54)	18	1	18	0	0.00%	N/A	N/A	7.572	0.0174	0.132	0.0174
pH (m-59)	18	1	18	0	0.00%	N/A	N/A	7.694	0.0238	0.154	0.0201
pH (m-60)	18	1	18	0	0.00%	N/A	N/A	7.688	0.0161	0.127	0.0165
pH (m-61)	18	2	18	0	0.00%	N/A	N/A	7.667	0.032	0.179	0.0233
Sulfate (m-54)	19	0	19	0	0.00%	N/A	N/A	361.1	143.3	11.97	0.0332
Sulfate (m-59)	19	0	19	0	0.00%	N/A	N/A	348.4	102.9	10.15	0.0291
Sulfate (m-60)	19	0	19	0	0.00%	N/A	N/A	358.4	436.3	20.89	0.0583
Sulfate (m-61)	19	1	19	0	0.00%	N/A	N/A	361.1	376.6	19.41	0.0537
TDS (m-54)	19	0	19	0	0.00%	N/A	N/A	3037	11345	106.5	0.0351
TDS (m-59)	19	0	19	0	0.00%	N/A	N/A	2721	9532	97.63	0.0359
TDS (m-60)	19	0	19	0	0.00%	N/A	N/A	2795	11637	107.9	0.0386
TDS (m-61)	19	1	19	0	0.00%	N/A	N/A	2816	12515	111.9	0.0397

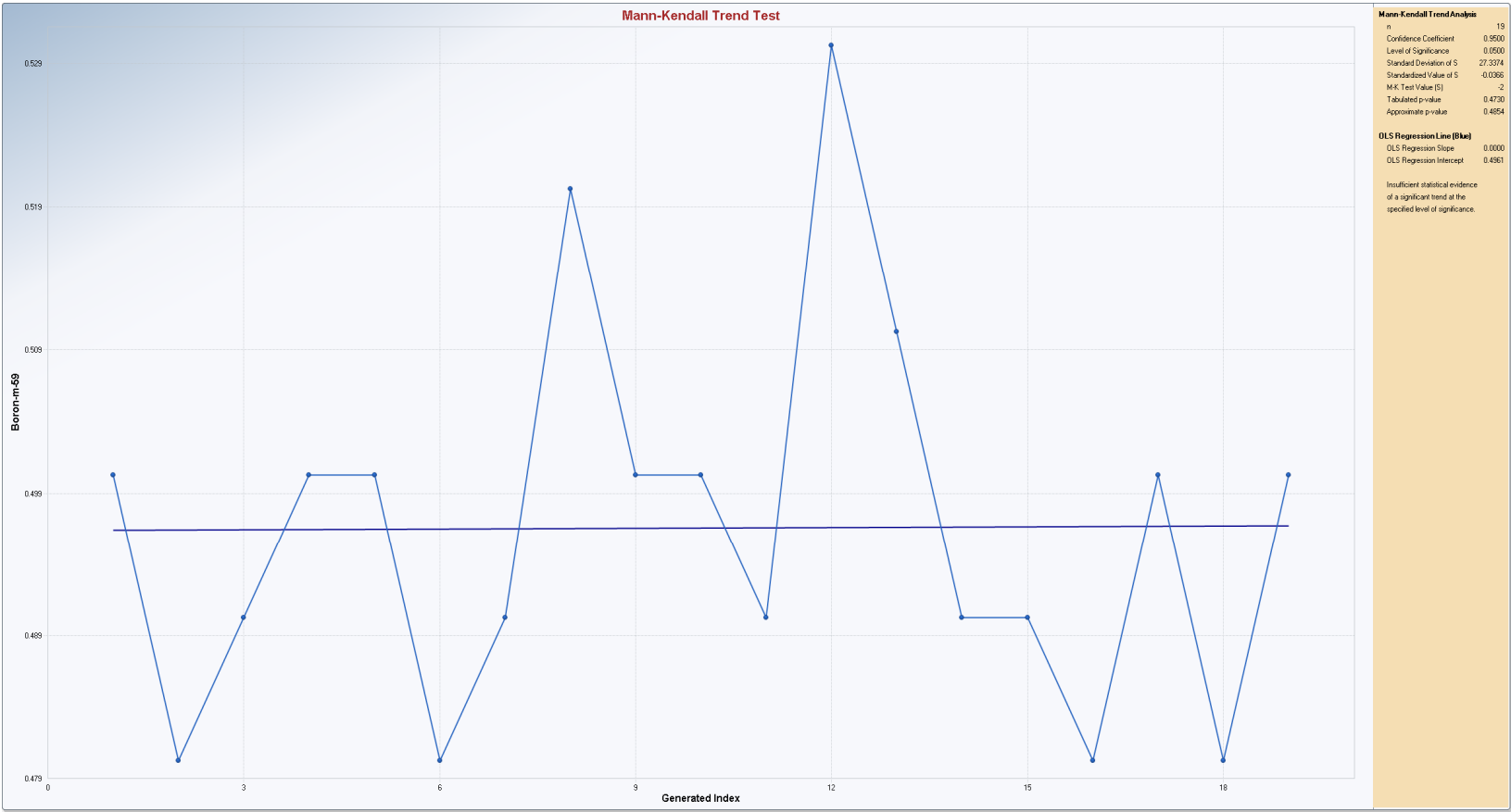
Appendix B
Mann-Kendall Trend Test



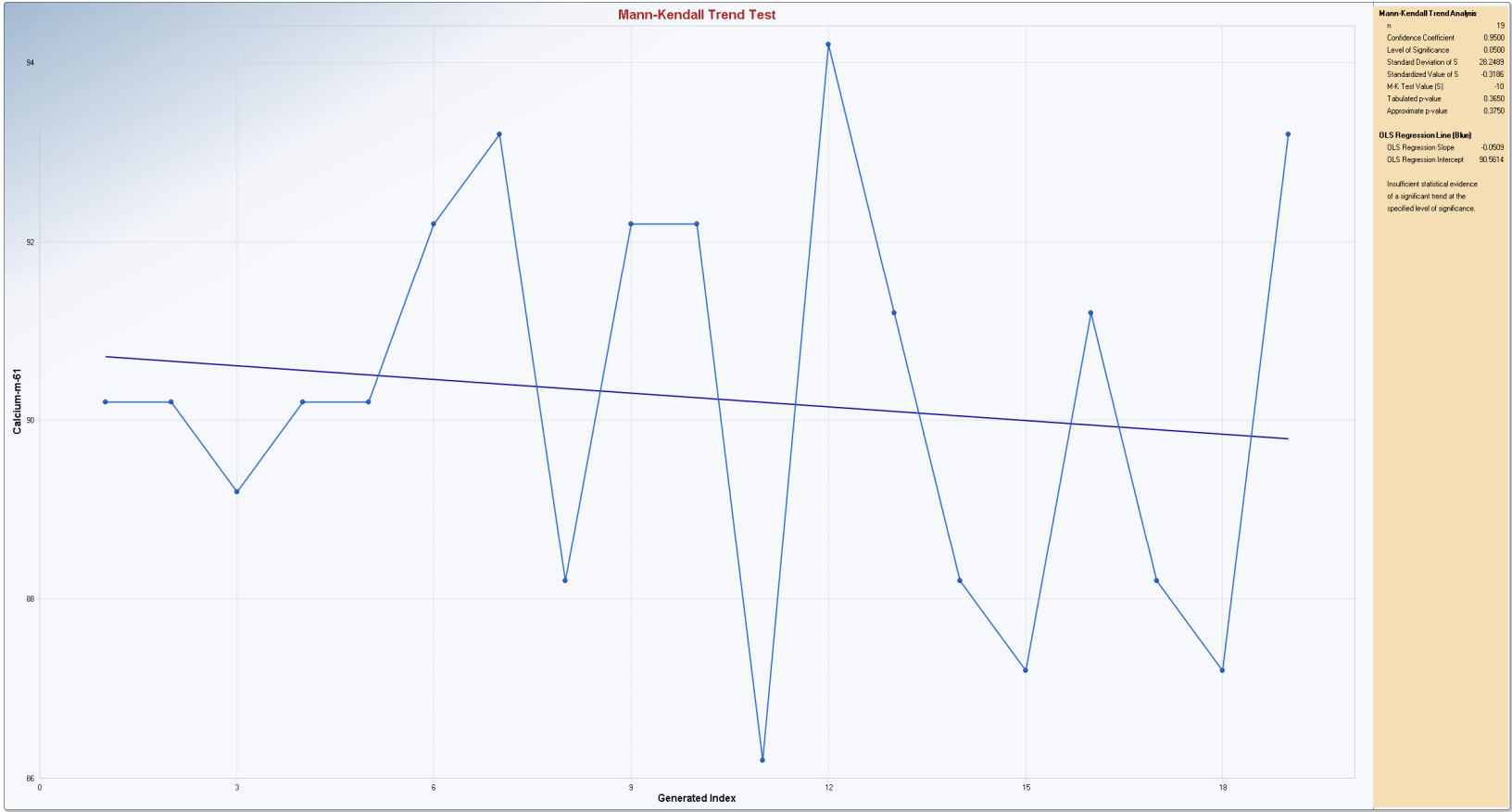
Appendix B
Mann-Kendall Trend Test



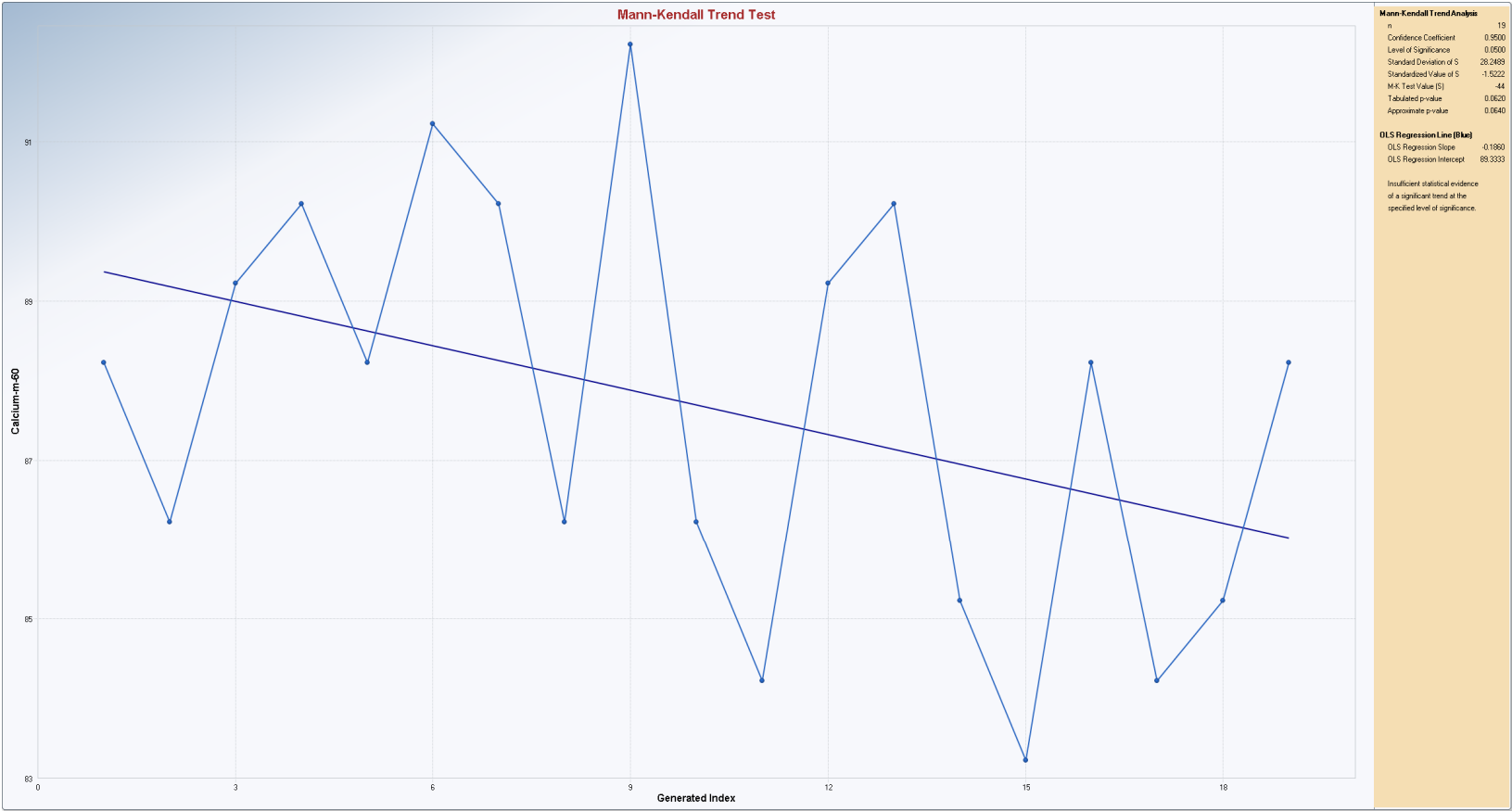
Appendix B
Mann-Kendall Trend Test



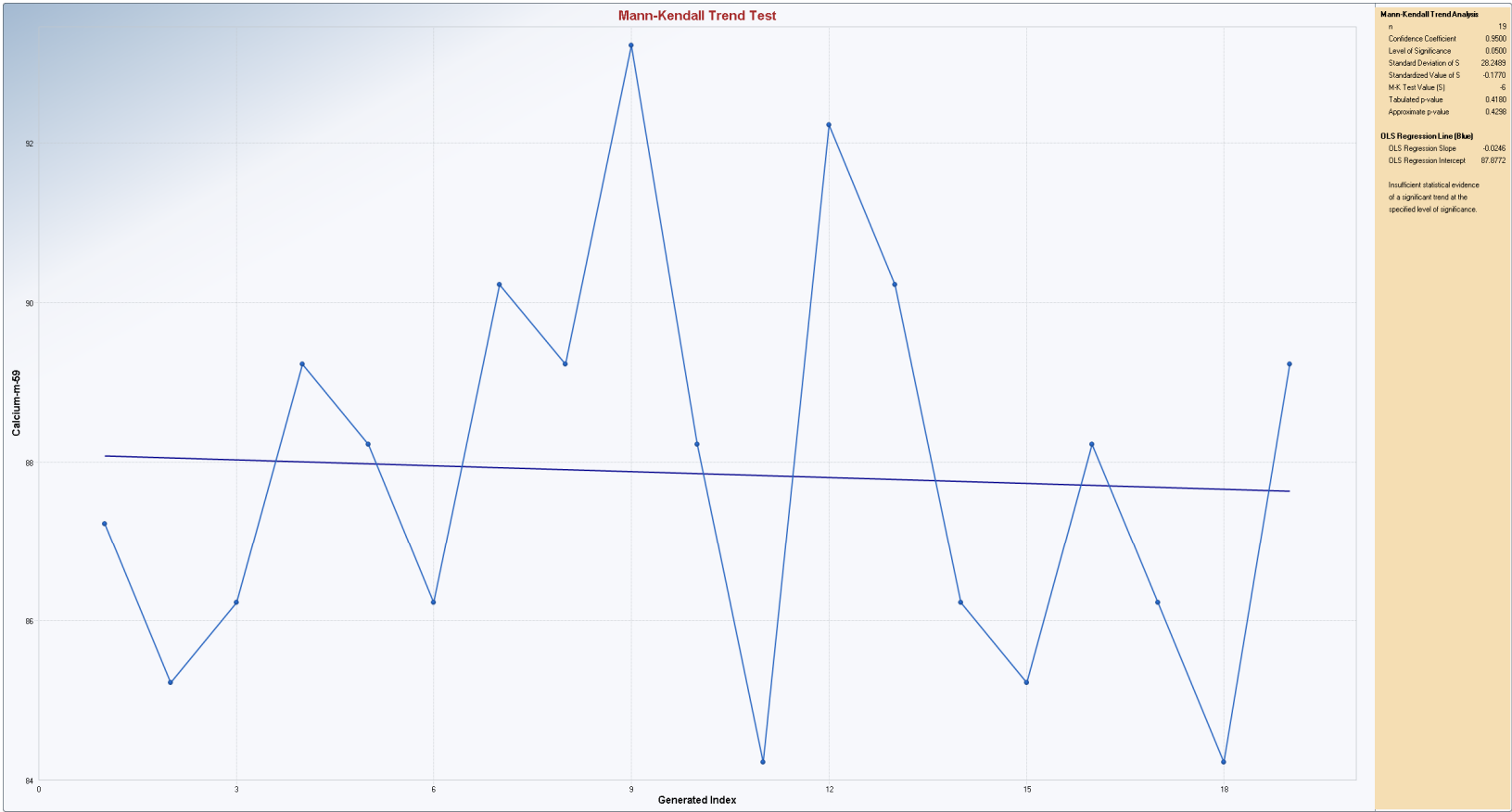
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Mann-Kendall Trend Test



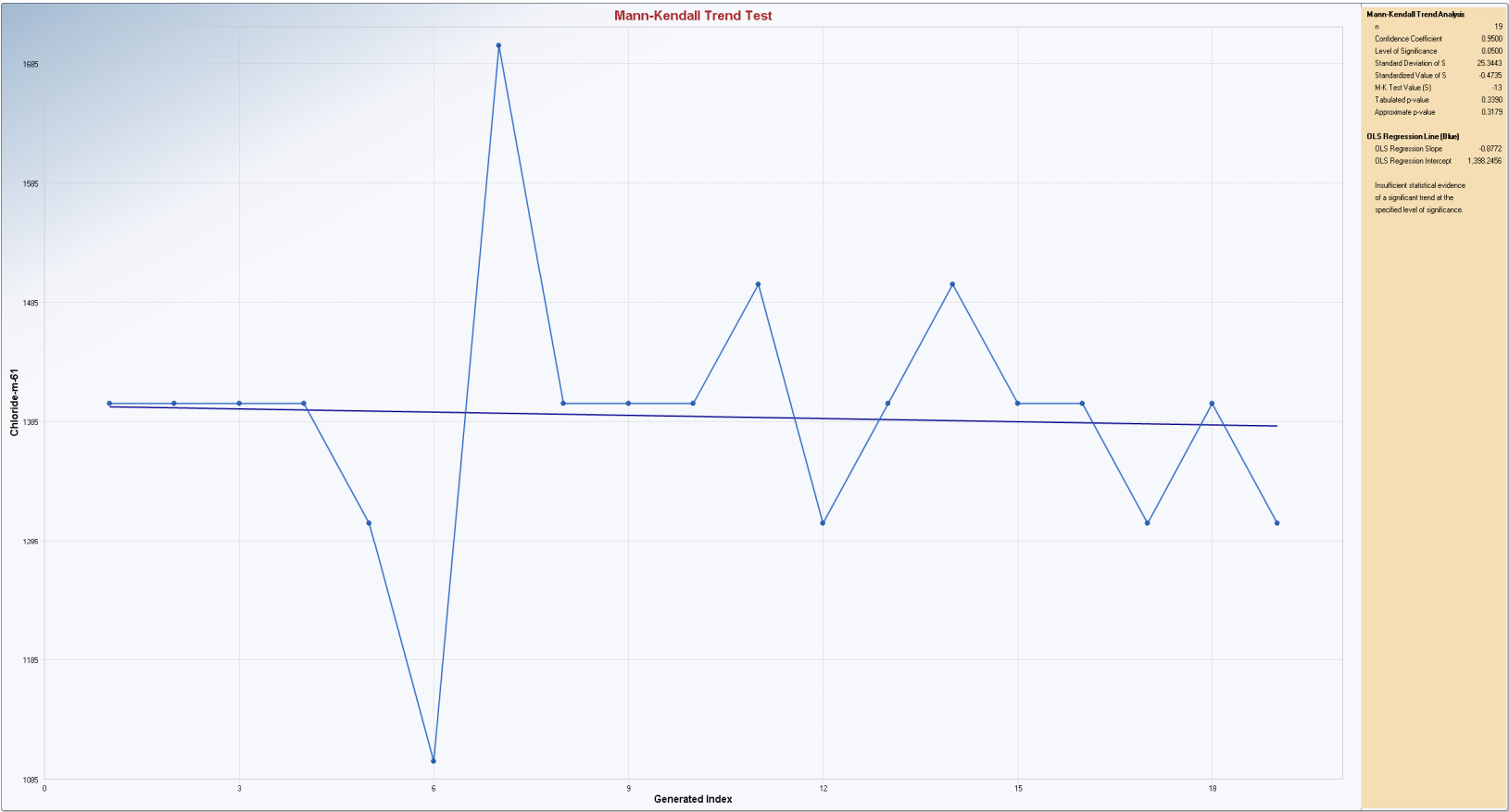
Appendix B
Mann-Kendall Trend Test



Appendix B
Mann-Kendall Trend Test



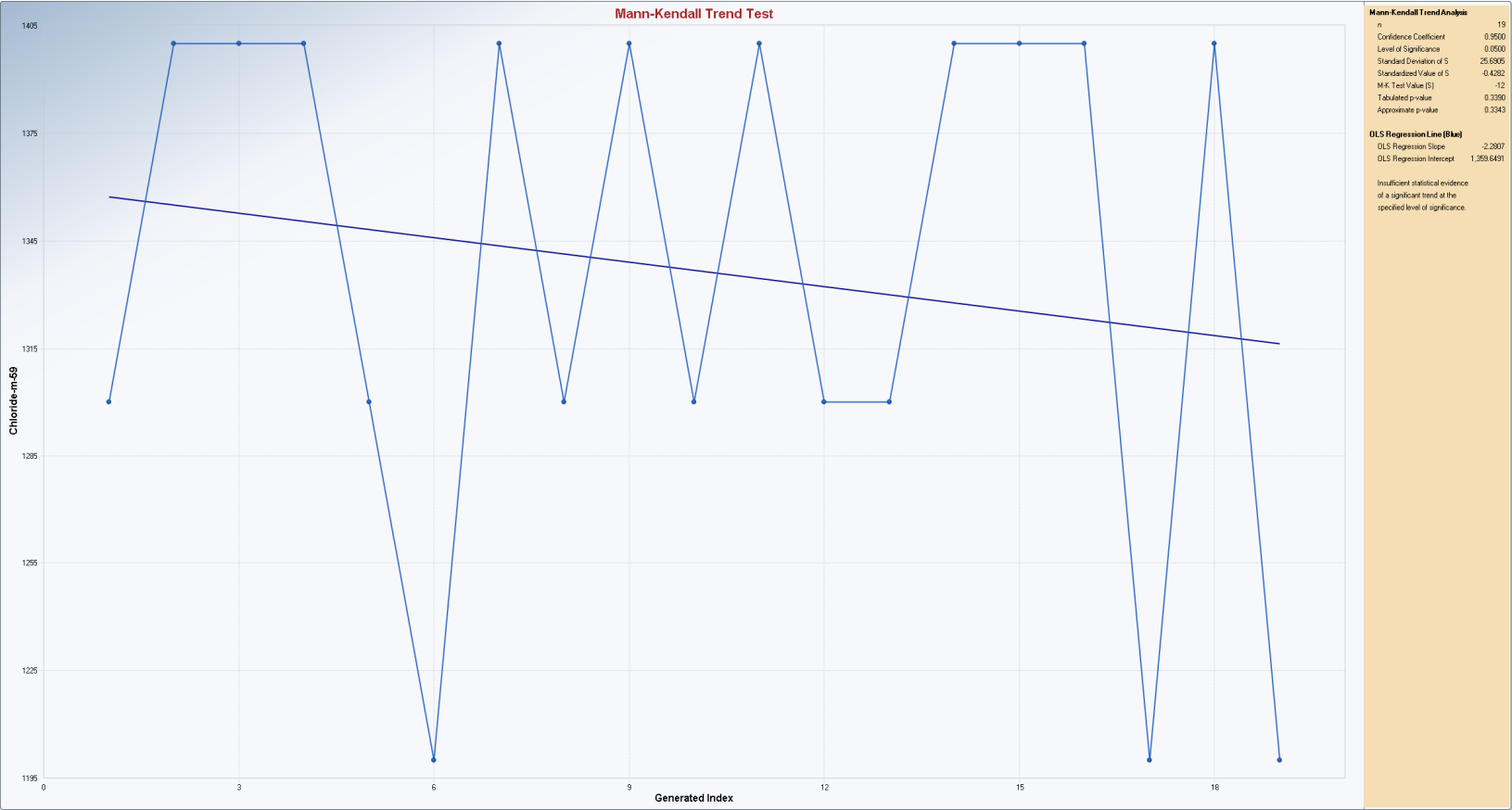
Appendix B
Mann-Kendall Trend Test



Appendix B
Mann-Kendall Trend Test



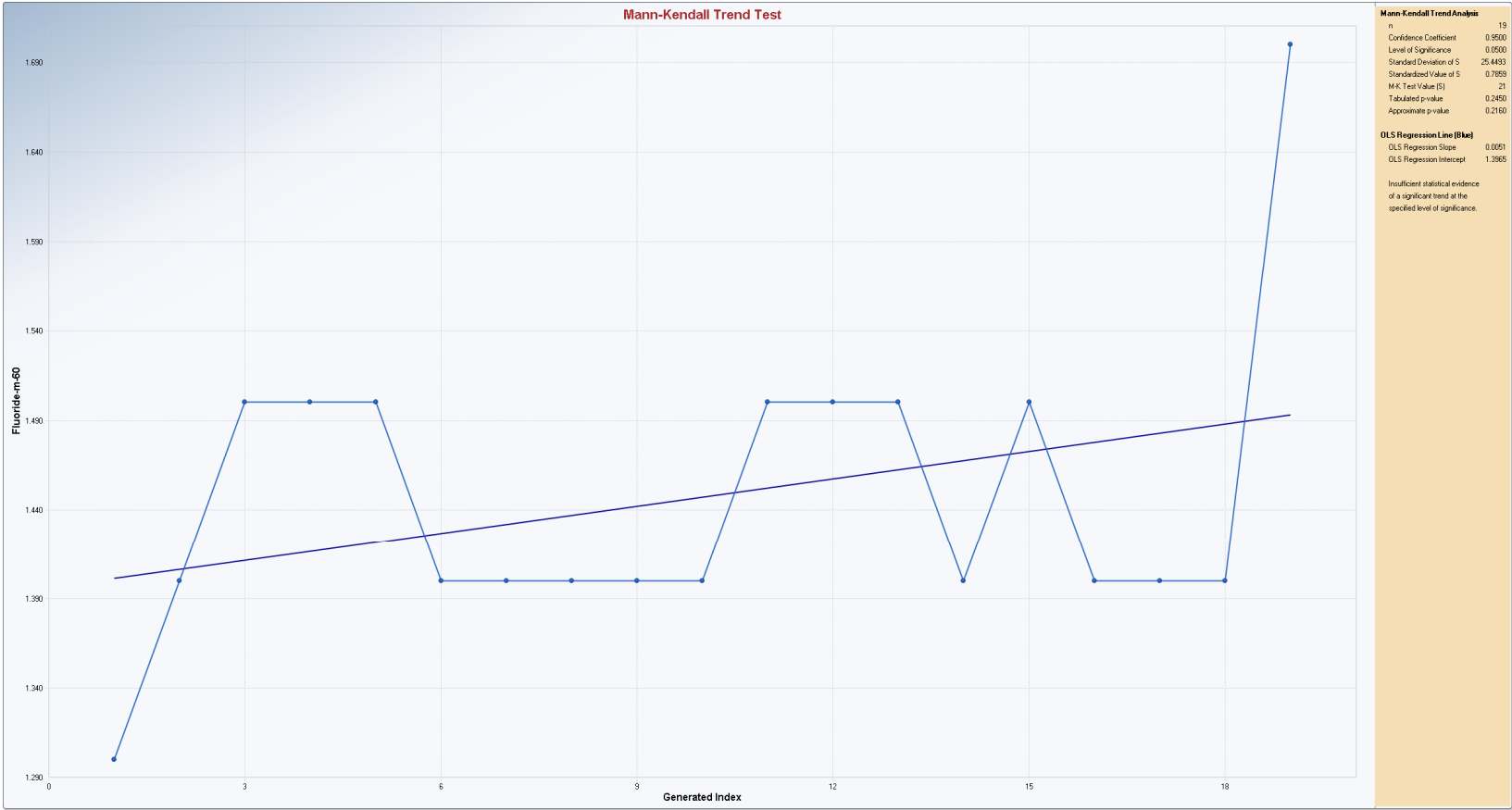
Appendix B
Mann-Kendall Trend Test



Appendix B
Mann-Kendall Trend Test



Appendix B
Mann-Kendall Trend Test



Appendix B
Mann-Kendall Trend Test



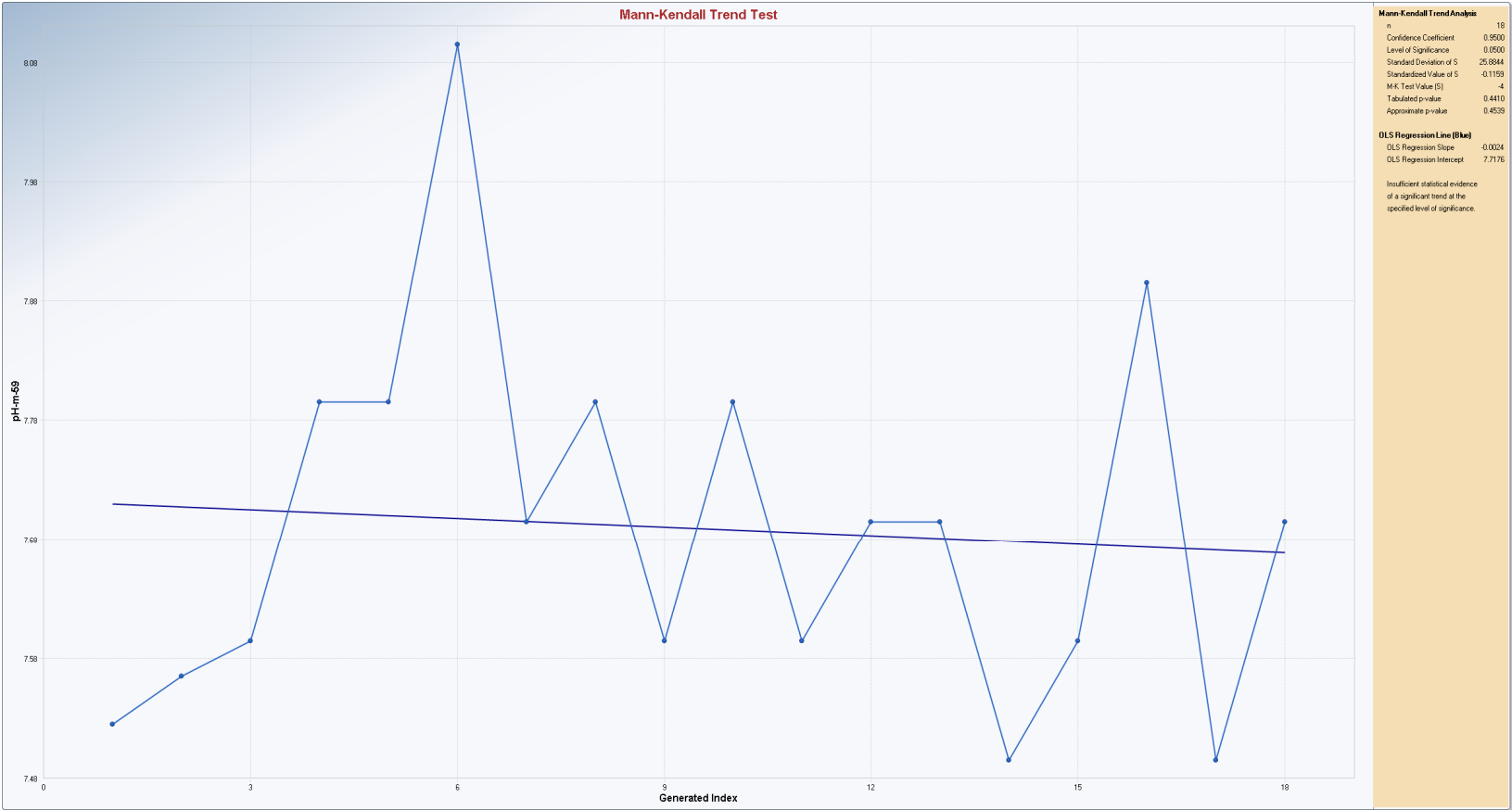
Appendix B
Mann-Kendall Trend Test



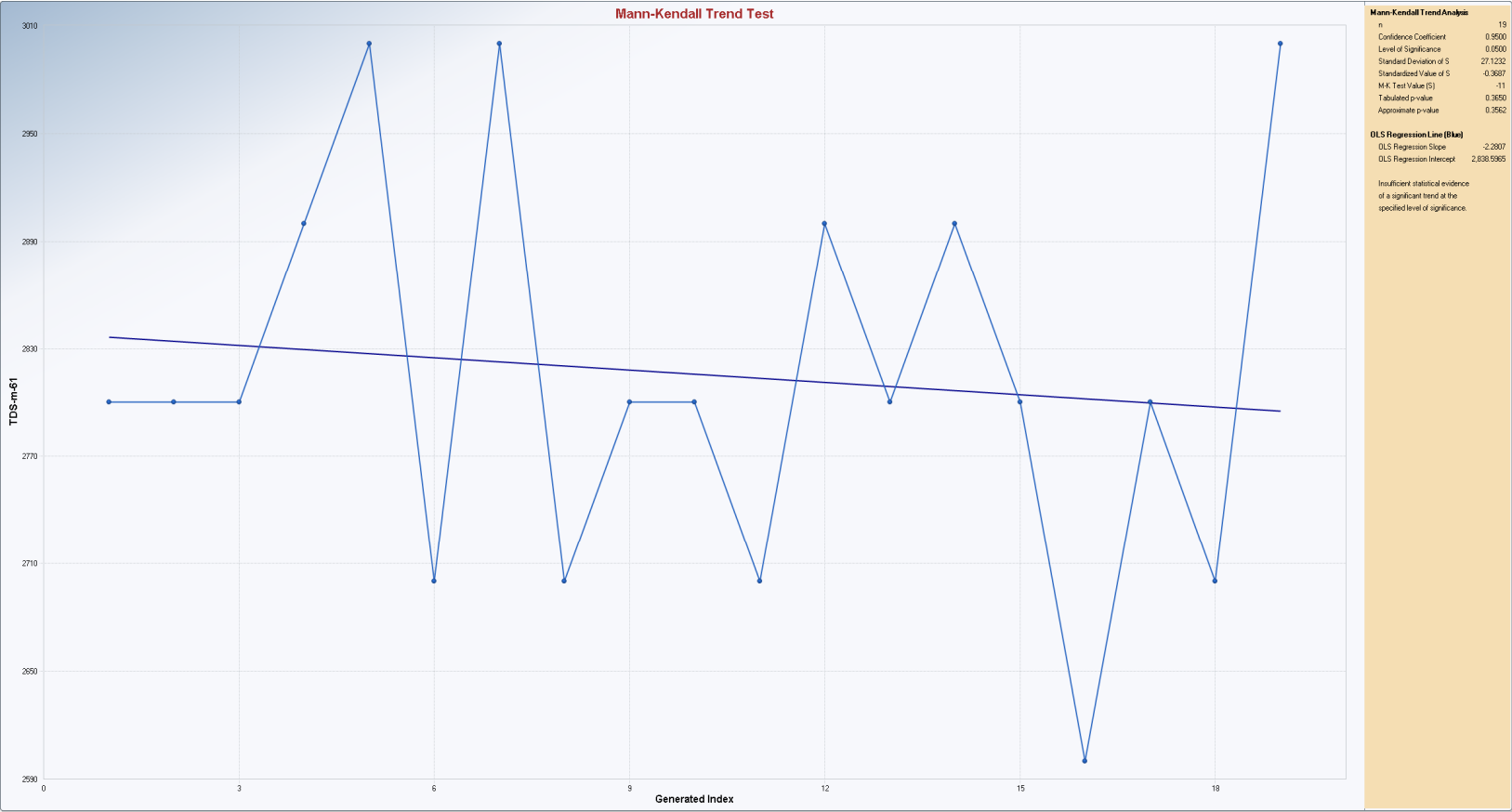
Appendix B
Mann-Kendall Trend Test



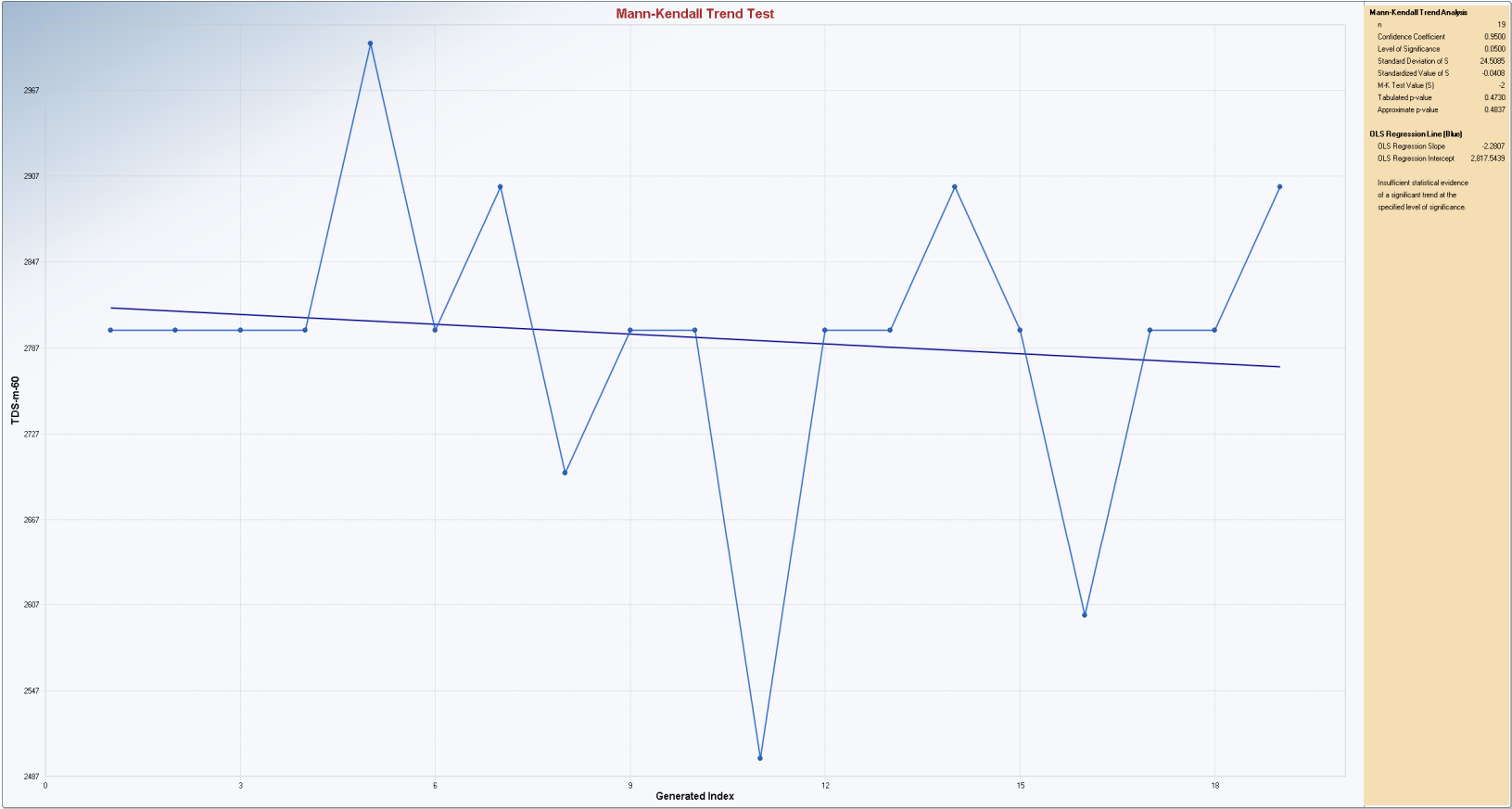
Appendix B
Mann-Kendall Trend Test



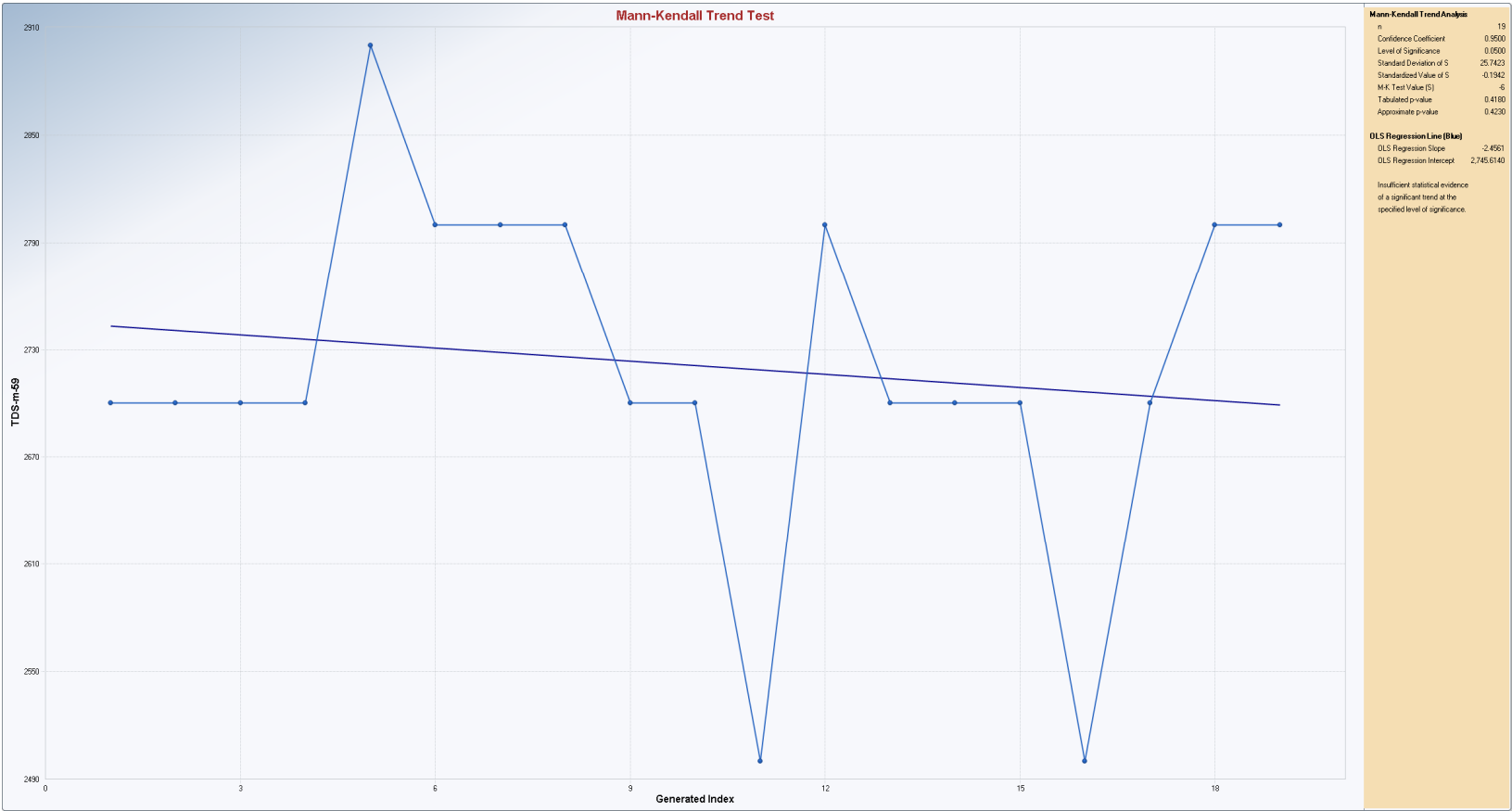
Appendix B
Mann-Kendall Trend Test



Appendix B
Mann-Kendall Trend Test



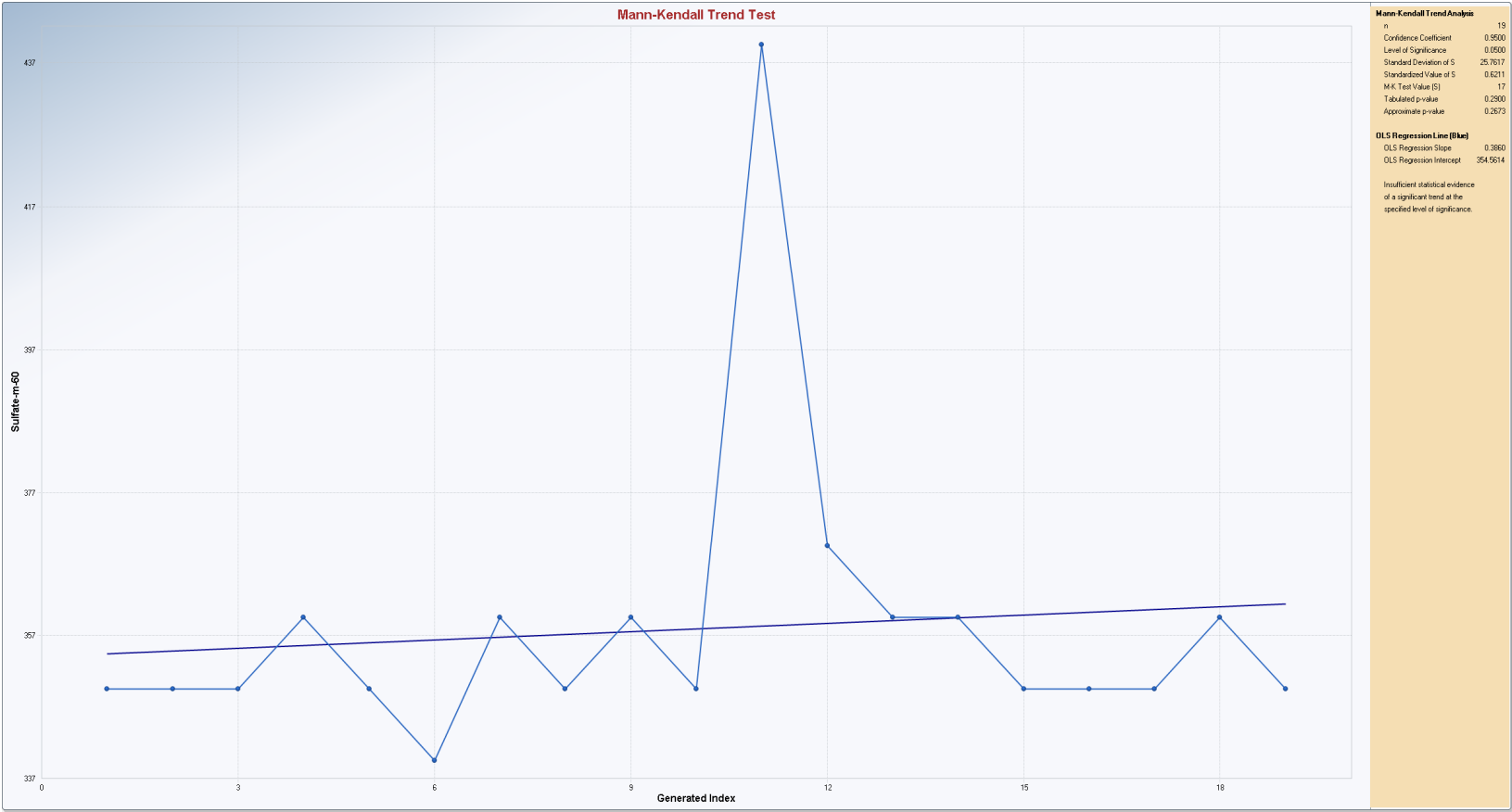
Appendix B
Mann-Kendall Trend Test



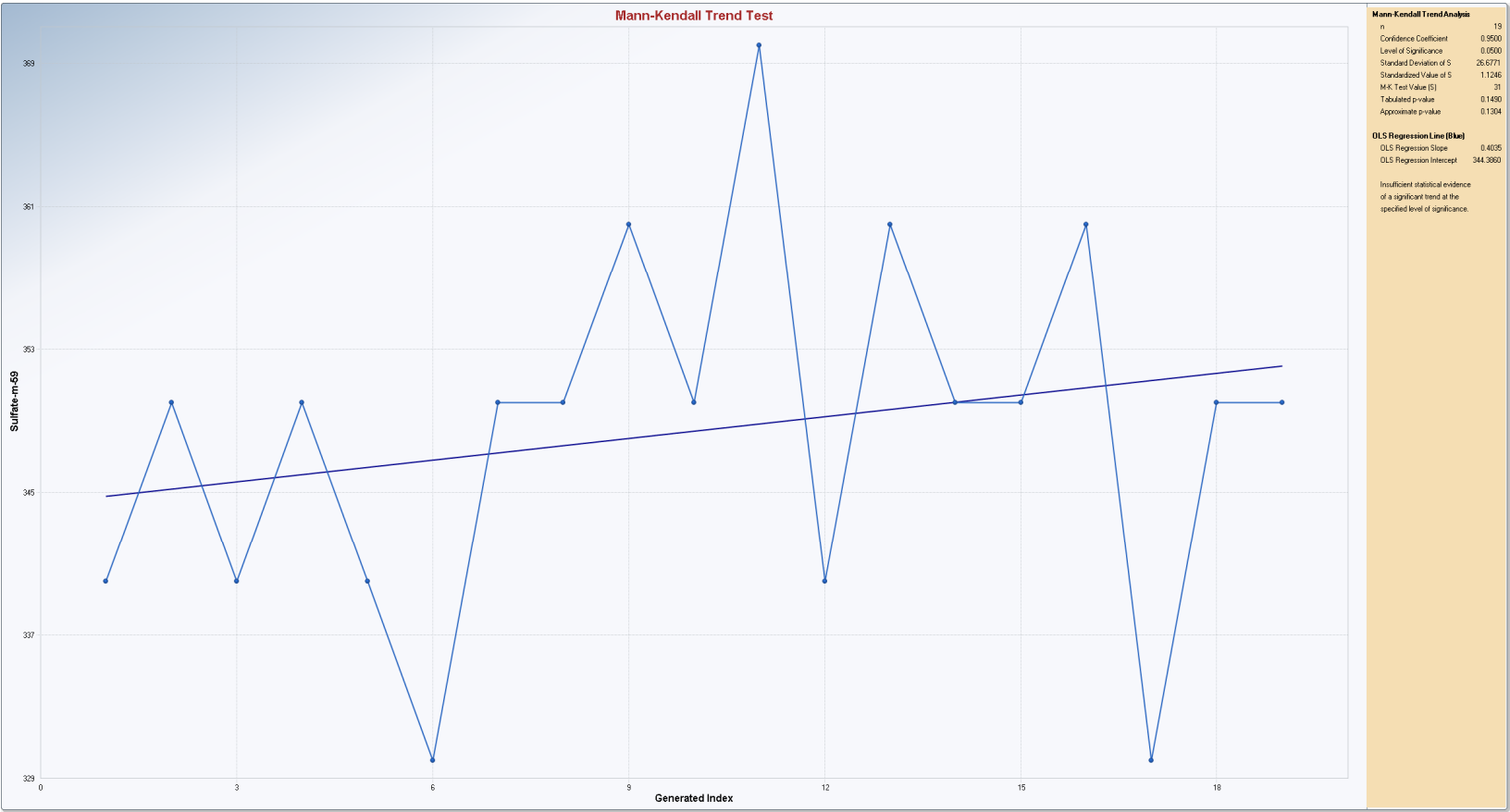
Appendix B
Mann-Kendall Trend Test



Appendix B
Mann-Kendall Trend Test



Appendix B
Mann-Kendall Trend Test



APPENDIX G

**WOOD TECHNICAL MEMORANDUM DOCUMENTING THE STATISTICAL ANALYSIS
OF APPENDIX IV CONSTITUENT DATA COLLECTED FROM THE SEDI THROUGH
NOVEMBER 2019**



Technical Memorandum

To:	Natalie Chrisman Lazarr, PE Arizona Public Service	File No:	14-2018-2040
From:	Carla Landrum, PhD Formation Environmental, LLC	Reviewed by:	Emily Lodolce, PE Wood Environment and Infrastructure Solutions, Inc.
Date:	April 13, 2020		

**Subject: CCR GROUNDWATER ASSESSMENT MONITORING
STATISTICAL EVALUATION OF NOVEMBER 2019 DATA
COLLECTED FROM THE SEDIMENTATION POND
Arizona Public Service Cholla Power Plant – Navajo County, Arizona**

1.0 INTRODUCTION

This Technical Memorandum (Tech Memo) was prepared by Wood Environment and Infrastructure Solutions, Inc. (Wood) and its subcontractor, Formation Environmental, LLC (Formation) on behalf of Arizona Public Service (APS), to document the routine statistical evaluation of assessment monitoring groundwater data collected in November 2019 from the Sedimentation Pond (SEDI) located at the APS Cholla Power Plant (Cholla) in Navajo County, Arizona. This routine statistical evaluation is in accordance with the Statistical Data Analysis Work Plan for the Cholla Power Plant (Wood, 2018).

2.0 STATISTICAL EVALUATION APPROACH

Appendix A contains the contents of the ProUCL data upload tables for the subject analysis which includes SEDI compliance well data collected from November 2015 through November 2019. The Appendix IV analytes are listed by name as column headers in the ProUCL data upload table. Each analyte has a corresponding data column (indicated with a "D_" prefix) that indicates if the analyte was detected or not at a concentration that exceeds the analytical reporting limit, where detectable concentrations are symbolized by a "1" and non-detectable concentrations are symbolized by a "0". The non-detectable concentration corresponds to the analyte's reporting limit value for the corresponding sample date. Field and split sample duplicates were retracted from the analysis.

Table 1 presents the concentrations of Appendix IV constituents in samples collected from SEDI background (i.e., M-62A) and compliance monitoring wells (i.e., M-56A, M-57A, and M-58A) in November 2019. The November 2019 sampling event constitutes the third Semiannual Assessment event of 2019. This surplus event was performed earlier than scheduled so that all Cholla units will be monitored on the same semiannual schedule (i.e., the second and fourth monitoring quarter of each year) going forward.

Appendix B presents the raw outputs from the Exploratory Data Analysis (EDA) of SEDI Appendix IV groundwater data incorporating the November 2019 sampling event.

3.0 EXCEEDANCE ASSESSMENT

Table 2 summarizes the Groundwater Protection Standard (GWPS) for each Appendix IV constituent (Wood, 2019). GWPS selection is documented in the January 2019 Tech Memo and constitutes either the statistically

calculated Background Threshold Value (BTV) (Table 1), the United States Environmental Protection Agency's (USEPA) promulgated Maximum Contaminant Level (MCL) for Drinking Water, or the risk-based alternative GWPS identified for constituents without MCLs, whichever value is higher. For all Appendix IV constituents except antimony and lithium, the USEPA's promulgated MCL, or the risk based alternative GWPS, is higher than the BTVs (Wood, 2019).

Table 2 summarizes: 1) compliance well comparisons to their respective GWPS for Appendix IV constituents, 2) which compliance wells exhibit statistically significant temporal trends, and 3) the type of Lower Confidence Limit test applied after incorporating the November 2019 sampling event for each monitoring well and Appendix IV constituent pair. The addition of data to the sample population over time can cause the type of statistical test in Table 2 to change from previous evaluations.

This statistical analysis indicates there is insufficient evidence to declare a GWPS exceedance for SEDI monitoring wells M-56A, M-57A, and M-58A at the current time.

Several compliance monitoring wells exhibit statistically significant ($p < 0.05$) temporal trends with no SSI declaration, including statistically significant ($p < 0.05$) decreasing temporal trends in: M-56A (barium and molybdenum), M-57A (arsenic, barium, and cobalt) and M-58A (cobalt) in addition to statistically significant ($p < 0.05$) increasing temporal trends in: M-56A (chromium) and M-57A (chromium).

4.0 RECOMMENDATION

On the basis that the statistical assessment documented herein indicates that Appendix IV constituent concentrations do not exceed applicable GWPSs (Table 2), Wood recommends continuing Assessment Monitoring at the SEDI in accordance with 40 Code of Federal Regulations Section 257.95(f) (Federal Register, 2018).

5.0 REFERENCES

- Federal Register, 2018. *40 Code of Federal Regulations Part 257 – Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule promulgated April 17, 2015 with Amendments to the National Minimum Criteria (Phase One, Part One) effective August 29, 2018.*
- US Environmental Protection Agency, 2015. *ProUCL (Version 5.1.1) User Guide, Statistical Software for Environmental Applications for Data Sets with and without Nondetect Observations.* EPA/600/R-07/041. Washington D.C. October 2015.
- Wood Environment & Infrastructure Solutions, Inc. (Wood), 2018. *Statistical Data Analysis Work Plan.* Coal Combustion Residual Rule Groundwater Monitoring System Compliance, Cholla Power Plant, Navajo County, Arizona. Prepared for Arizona Public Service. October 2018.
- Wood, 2019. *CCR Groundwater Assessment Monitoring Statistical Analysis and Results for the Sedimentation Pond.* Arizona Public Service Cholla Power Plant, Navajo County, Arizona. Technical Memorandum dated January 14, 2019.

Table 1
Assessment Monitoring Data Collected from the Sedimentation Pond

				Analyte Concentration by Location and Date							
				M-56A (Compliance)				M-57A (Compliance)			
Constituent List	Analyte	Units	BTV	2/15/19	4/18/19	8/9/19	11/25/19	2/15/19	4/17/19	8/9/19	11/25/19
Appendix IV	Antimony	mg/L	0.05	---	<0.0010	---	---	---	---	---	---
Appendix IV	Arsenic	mg/L	0.004	0.0082	0.0011	0.0085	0.0088	0.0017	0.0026	0.0019	0.021
Appendix IV	Barium	mg/L	0.08	0.067	0.055	0.078	0.063	0.041	0.041	0.039	0.047
Appendix IV	Beryllium	mg/L	0.001	---	<0.0010	---	---	---	<0.0010	---	---
Appendix IV	Cadmium	mg/L	0.002	---	<0.00010	---	---	---	<0.00010	---	---
Appendix IV	Chromium	mg/L	0.004	0.0052	0.076	0.023	0.0086	0.0074	0.045	0.038	0.0038
Appendix IV	Cobalt	mg/L	0.002	0.00073	0.0013	0.0012	0.00064	0.0049	0.005	0.004	0.0044
Appendix IV	Fluoride	mg/L	0.8	<0.40	<0.40	<0.8	<0.4	<0.4	0.53	<0.8	<0.4
Appendix IV	Lead	mg/L	0.01	---	<0.00050	---	---	---	<0.00050	---	---
Appendix IV	Lithium	mg/L	0.2	---	<0.20	<0.20	---	---	<0.20	<0.2	---
Appendix IV	Mercury	mg/L	0.0002	---	<0.00020	---	---	---	<0.00020	---	---
Appendix IV	Molybdenum	mg/L	0.011	0.0074	0.014	0.011	0.0087	0.0029	0.0078	0.0068	0.012
Appendix IV	Total Radium	pCi/L	1.1	0.9	NA	0.6	---	<0.7	NA	<0.7	---
Appendix IV	Selenium	mg/L	0.01	---	0.00062	---	---	---	0.00069	---	---
Appendix IV	Thallium	mg/L	0.0004	<0.00010	<0.00010	<0.0001	<0.0001	<0.00010	<0.00010	<0.0001	<0.0001

Notes:

Constituent concentrations that exceed BTVs are presented in bolded text.

Acronyms:

--- = not applicable or evaluated
BTV = Background Threshold Value
mg/L = milligrams per liter
NA = not available at time of assessment

pCi/L = picocuries per liter
SU = standard units
SEDI = Sedimentation Pond
TDS = total dissolved solids
< = sample concentration
below the reporting limit value

Table 1
Assessment Monitoring Data Collected from the Sedimentation Pond

Constituent List	Analyte	Units	BTV	Analyte Concentration by Location and Date							
				M-58A (Compliance)				M-62A (Background)			
				2/15/19	4/18/19	8/9/19	11/25/19	2/15/19	4/18/19	8/9/19	11/25/19
Appendix IV	Antimony	mg/L	0.05	---	<0.0010	---	---	---	<0.0010	---	---
Appendix IV	Arsenic	mg/L	0.004	0.0043	0.0039	0.0038	0.0046	0.0030	0.0033	0.0031	0.0048
Appendix IV	Barium	mg/L	0.08	0.063	0.059	0.066	0.079	0.068	0.068	0.067	0.15
Appendix IV	Beryllium	mg/L	0.001	---	<0.0010	---	---	---	<0.0010	---	---
Appendix IV	Cadmium	mg/L	0.002	---	<0.00010	---	---	---	<0.00010	---	---
Appendix IV	Chromium	mg/L	0.004	<0.0010	<0.0010	<0.001	<0.001	<0.0010	<0.0010	0.0037	0.0044
Appendix IV	Cobalt	mg/L	0.002	<0.00050	<0.00050	<0.0005	<0.005	<0.00050	<0.00050	<0.0005	0.0012
Appendix IV	Fluoride	mg/L	0.8	<0.40	<0.40	<0.8	<0.4	<0.40	0.47	<0.4	<0.4
Appendix IV	Lead	mg/L	0.01	---	<0.00050	---	---	---	<0.00050	---	---
Appendix IV	Lithium	mg/L	0.2	---	<0.20	<0.2	---	---	<0.20	<0.2	---
Appendix IV	Mercury	mg/L	0.0002	---	<0.00020	---	---	---	<0.00020	---	---
Appendix IV	Molybdenum	mg/L	0.011	0.0018	0.0018	0.0018	0.0018	0.0024	0.0026	0.0028	0.0091
Appendix IV	Total Radium	pCi/L	1.1	<0.7	NA	<0.7	---	<0.7	NA	0.8	---
Appendix IV	Selenium	mg/L	0.01	---	<0.00050	---	---	---	<0.00050	---	---
Appendix IV	Thallium	mg/L	0.0004	<0.00010	<0.00010	<0.0001	<0.0001	<0.00010	<0.00010	<0.0001	0.00016

Notes:

Constituent concentrations that exceed BTVs are presented in bolded text.

Acronyms:

--- = not applicable or evaluated
BTV = Background Threshold Value
mg/L = milligrams per liter
NA = not available at time of assessment

pCi/L = picocuries per liter
SU = standard units
SEDI = Sedimentation Pond
TDS = total dissolved solids
< = sample concentration below the reporting limit value

Table 2
GWPS Exceedance Summary for Data Collected from the Sedimentation Pond through November 2019

			Lower Confidence Limit (LCL) Results - Appendix IV Constituents						
			M-56A		M-57A		M-58A		Exceedance
			LCL	Recent Test	LCL	Recent Test	LCL	Recent Test	
Analyte	Units	GWPS	LCL	Recent Test	LCL	Recent Test	LCL	Recent Test	
Antimony	mg/L	0.05	0.0025	NP-LCL	0.0025	NP-LCL	0.0030	NP-LCL	No
Arsenic	mg/L	0.01	0.0020	NP-LCL	0.0017	P-LCLT	0.0035	P-LCL	No
Barium	mg/L	2	0.0544	P-LCLT	0.0276	NP-LCL	0.0617	P-LCL	No
Beryllium	mg/L	0.004	0.0010	NP-LCL	0.0010	NP-LCL	0.0010	NP-LCL	No
Cadmium	mg/L	0.005	0.0002	NP-LCL	0.0002	NP-LCL	0.0002	NP-LCL	No
Chromium	mg/L	0.1	0.0070	P-LCLT	0.0140	P-LCLT	0.0020	NP-LCL	No
Cobalt	mg/L	0.006	0.0005	P-LCL	0.0039	P-LCLT	0.0010	NP-LCL	No
Fluoride	mg/L	4	0.4700	NP-LCL	0.4000	NP-LCL	0.4000	NP-LCL	No
Lead	mg/L	0.015	0.0010	NP-LCL	0.0010	NP-LCL	0.0011	NP-LCL	No
Lithium	mg/L	0.2	0.2000	NP-LCL	0.2000	NP-LCL	0.2000	NP-LCL	No
Mercury	mg/L	0.002	0.0002	NP-LCL	0.0002	NP-LCL	0.0002	NP-LCL	No
Molybdenum	mg/L	0.1	0.0052	P-LCLT	0.0034	P-LCL	0.0022	NP-LCL	No
Total Radium	pCi/L	5	0.5360	P-LCL	0.9000	NP-LCL	1.9000	NP-LCL	No
Selenium	mg/L	0.05	0.0010	NP-LCL	0.0010	NP-LCL	0.0010	NP-LCL	No
Thallium	mg/L	0.002	0.0001	NP-LCL	0.0002	NP-LCL	0.0002	NP-LCL	No

Notes:

Statistically significant
temporal trend (p<0.05)

Acronyms:

GWPS = Groundwater Protection Standard
mg/L = milligrams per liter
pCi/L = picocuries per liter

P-LCL = Parametric Lower Confidence Limit
NP-LCL = Non-Parametric Lower Confidence Limit
P-LCLT = Parametric Lower Confidence Limit with a Trend

APPENDIX A

PROUCL DATA UPLOAD TABLE

Appendix A
ProUCL Data

StationName	QC_SampleID	SampDate	NumDate	Antimony	D_Antimony	Arsenic	D_Arsenic	Barium	D_Barium	Beryllium	D_Beryllium	Cadmium	D_Cadmium	Chromium
M-56A	7873_O	11/30/2015 12:08	42338.51	0.0025	0	0.0019	1	0.081	1	0.001	0	0.0001	0	0.00051
M-56A	CH-M-56A-0316_O	3/8/2016 13:40	42437.57	0.05	0	0.01	0	0.084	1	0.001	0	0.002	0	0.01
M-56A	CH-CCR-M56A-05102016_O	5/10/2016 14:11	42500.59	0.0001	0	0.00093	1	0.075	1	0.001	0	0.0001	0	0.0005
M-56A	CH-CCR-M56A-816_O	8/29/2016 9:01	42611.38	0.00013	1	0.00082	1	0.082	1	0.001	0	0.0001	0	0.0005
M-56A	CH-CCR-M56A-916_O	9/21/2016 10:52	42634.45	0.0005	0	0.00083	1	0.076	1	0.001	0	0.0001	0	0.0012
M-56A	CH-CCR-M56A-217_O	2/20/2017 11:21	42786.47	0.001	0	0.00068	1	0.071	1	0.001	0	0.0001	0	0.0093
M-56A	CH-CCR-M56A-41317_O	4/13/2017 7:45	42838.32	0.001	0	0.00076	1	0.07	1	0.001	0	0.0001	0	0.0091
M-56A	CH-CCR-M56A-42517_O	4/25/2017 9:11	42850.38	0.001	0	0.00075	1	0.086	1	0.001	0	0.0001	0	0.0067
M-56A	CH-CCR-M56A-51817_O	5/18/2017 9:21	42873.39	0.001	0	0.0006	1	0.062	1	0.001	0	0.0001	0	0.0063
M-56A	CH-CCR-M56A-52517_O	5/25/2017 10:17	42880.43	0.001	0	0.0007	1	0.073	1	0.001	0	0.0001	0	0.02
M-56A	CH-CCR-M56A-70117_O	7/1/2017 14:43	42917.61	0.001	0	0.00065	1	0.068	1	0.001	0	0.0001	0	0.0034
M-56A	CH-CCR-M56A-72617_O	7/26/2017 14:40	42942.61	0.002	0	0.001	0	0.066	1	0.001	0	0.0002	0	0.0028
M-56A	CH-CCR-M56A-90817_O	9/8/2017 8:35	42986.36	0.004	0	0.002	0	0.07	1	0.001	0	0.0004	0	0.004
M-56A	CH-CCR-M56A-120817_O	12/8/2017 11:15	43077.47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M-56A	CH-CCR-M-56A-52118_O	5/21/2018 12:01	43241.50	0.001	0	0.00081	1	0.061	1	0.001	0	0.0001	0	0.0046
M-56A	CH-CCR-M56A-082818_O	8/28/2018 14:07	43340.59	NA	NA	0.0013	1	0.065	1	NA	NA	NA	NA	0.0042
M-56A	CH-CCR-M56A-21519	2/15/2019 22:14	43511.93	NA	NA	0.0082	1	0.067	1	NA	NA	NA	NA	0.0052
M-56A	CH-CCR-M56A-41819	4/18/2019 0:00	43573.00	0.001	0	0.0011	1	0.055	1	0.001	0	0.0001	0	0.076
M-56A	CH-CCR-M56A-8919	8/9/2019 0:00	43686.00	NA	NA	0.0085	1	0.078	1	NA	NA	NA	NA	0.023
M-56A	CH-CCR-M56A-112519	11/25/2019 11:19	43794.47	NA	NA	0.0088	1	0.063	1	NA	NA	NA	NA	0.0086
M-57A	7874_O	11/30/2015 13:05	42338.55	0.0025	0	0.0048	1	0.072	1	0.001	0	0.0001	0	0.00074
M-57A	CH-M-57A-0316_O	3/8/2016 14:40	42437.61	0.05	0	0.0064	1	0.063	1	0.001	0	0.002	0	0.01
M-57A	CH-CCR-M57A-05112016_O	5/11/2016 8:53	42501.37	0.0001	0	0.0027	1	0.047	1	0.001	0	0.0001	0	0.0005
M-57A	CH-CCR-M57A-816_O	8/25/2016 13:23	42607.56	0.00012	1	0.0042	1	0.055	1	0.001	0	0.0001	0	0.00066
M-57A	CH-CCR-M57A-916_O	9/21/2016 13:59	42634.58	0.0005	0	0.0019	1	0.051	1	0.001	0	0.0001	0	0.016
M-57A	CH-CCR-M57A-217_O	2/20/2017 10:30	42786.44	0.001	0	0.0051	1	0.041	1	0.001	0	0.0001	0	0.042
M-57A	CH-CCR-M57A-41217_O	4/12/2017 18:28	42837.77	0.001	0	0.0042	1	0.042	1	0.001	0	0.0001	0	0.031
M-57A	CH-CCR-M57A-42517_O	4/25/2017 8:39	42850.36	0.001	0	0.0039	1	0.042	1	0.001	0	0.0001	0	0.019
M-57A	CH-CCR-M57A-51817_O	5/18/2017 10:10	42873.42	0.001	0	0.0098	1	0.038	1	0.001	0	0.0001	0	0.024
M-57A	CH-CCR-M57A-52517_O	5/25/2017 8:30	42880.35	0.001	0	0.0066	1	0.044	1	0.001	0	0.0001	0	0.035
M-57A	CH-CCR-M57A-70117_O	7/1/2017 14:11	42917.59	0.001	0	0.0038	1	0.043	1	0.001	0	0.0001	0	0.012
M-57A	CH-CCR-M57A-72617_O	7/26/2017 13:53	42942.58	0.002	0	0.0027	1	0.042	1	0.001	0	0.0002	0	0.028
M-57A	CH-CCR-M57A-90817_O	9/8/2017 8:01	42986.33	0.004	0	0.0027	1	0.045	1	0.001	0	0.0004	0	0.015
M-57A	CH-CCR-M57A-120817_O	12/8/2017 10:54	43077.45	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M-57A	CH-CCR-M-57A-52118_O	5/21/2018 12:33	43241.52	0.002	0	0.0022	1	0.043	1	0.001	0	0.0002	0	0.0023
M-57A	CH-CCR-M57A-082818_O	8/28/2018 13:07	43340.55	NA	NA	0.0021	1	0.045	1	NA	NA	NA	NA	0.0067
M-57A	CH-CCR-M57A-21519	2/15/2019 21:41	43511.90	NA	NA	0.0017	1	0.041	1	NA	NA	NA	NA	0.0074
M-57A	CH-CCR-M57A-41719	4/17/2019 15:28	43572.64	0.001	0	0.0026	1	0.041	1	0.001	0	0.0001	0	0.045
M-57A	CH-CCR-M57A-8919	8/9/2019 0:00	43686.00	NA	NA	0.0019	1	0.039	1	NA	NA	NA	NA	0.038
M-57A	CH-CCR-M57A-112519	11/25/2019 10:41	43794.45	NA	NA	0.021	1	0.047	1	NA	NA	NA	NA	0.0038
M-58A	7876_O	11/30/2015 14:30	42338.60	0.0025	0	0.0032	1	0.1	1	0.001	0	0.0001	0	0.0005
M-58A	CH-M-58A-0316_O	3/8/2016 14:50	42437.62	0.05	0	0.01	0	0.081	1	0.001	0	0.002	0	0.01
M-58A	CH-CCR-M58A-05112016_O	5/11/2016 10:20	42501.43	0.0001	0	0.0025	1	0.055	1	0.001	0	0.0001	0	0.0005
M-58A	CH-CCR-M58A-816_O	8/25/2016 14:11	42607.59	0.0001	0	0.0045	1	0.097	1	0.001	0	0.0001	0	0.00097
M-58A	CH-CCR-M58A-916_O	9/21/2016 13:16	42634.55	0.0005	0	0.0039	1	0.076	1	0.001	0	0.0001	0	0.0018
M-58A	CH-CCR-M58A-217_O	2/20/2017 9:49	42786.41	0.001	0	0.0027	1	0.064	1	0.001	0	0.0001	0	0.0033
M-58A	CH-CCR-M58A-41217_O	4/12/2017 17:41	42837.74	0.001	0	0.0037	1	0.048	1	0.001	0	0.0001	0	0.00091
M-58A	CH-CCR-M58A-42517_O	4/25/2017 8:08	42850.34	0.001	0	0.004	1	0.049	1	0.001	0	0.0001	0	0.001

Appendix A
ProUCL Data

StationName	QC_SampleID	SampDate	NumDate	Antimony	D_Antimony	Arsenic	D_Arsenic	Barium	D_Barium	Beryllium	D_Beryllium	Cadmium	D_Cadmium	Chromium
M-58A	CH-CCR-M58A-51817_O	5/18/2017 10:40	42873.44	0.001	0	0.003	1	0.043	1	0.001	0	0.0001	0	0.00052
M-58A	CH-CCR-M58A-52517_O	5/25/2017 7:48	42880.33	0.001	0	0.0051	1	0.055	1	0.001	0	0.0001	0	0.00055
M-58A	CH-CCR-M58A-70117_O	7/1/2017 13:41	42917.57	0.001	0	0.0047	1	0.063	1	0.001	0	0.0001	0	0.0005
M-58A	CH-CCR-M58A-72617_O	7/26/2017 11:10	42942.47	0.002	0	0.0057	1	0.11	1	0.001	0	0.0002	0	0.003
M-58A	CH-CCR-M58A-90817_O	9/8/2017 7:29	42986.31	0.004	0	0.0048	1	0.08	1	0.001	0	0.0004	0	0.004
M-58A	CH-CCR-M58A-120817_O	12/8/2017 10:22	43077.43	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M-58A	CH-CCR-M-58A-52118_O	5/21/2018 13:18	43241.55	0.002	0	0.0042	1	0.071	1	0.001	0	0.0002	0	0.002
M-58A	CH-CCR-M58A-082818_O	8/28/2018 9:35	43340.40	NA	NA	0.0037	1	0.075	1	NA	NA	NA	NA	0.001
M-58A	CH-CCR-M58A-21519	2/15/2019 21:04	43511.88	NA	NA	0.0043	1	0.063	1	NA	NA	NA	NA	0.001
M-58A	CH-CCR-M58A-41719	4/17/2019 0:00	43572.00	0.001	0	0.0039	1	0.059	1	0.001	0	0.0001	0	0.001
M-58A	CH-CCR-M58A-8919	8/9/2019 0:00	43686.00	NA	NA	0.0038	1	0.066	1	NA	NA	NA	NA	0.001
M-58A	CH-CCR-M58A-112519	11/25/2019 9:07	43794.38	NA	NA	0.0046	1	0.079	1	NA	NA	NA	NA	0.0010
M-62A	7872_O	11/30/2015 10:56	42338.46	0.0025	0	0.002	1	0.082	1	0.001	0	0.0001	0	0.00078
M-62A	CH-M-62A-0316_O	3/8/2016 11:54	42437.50	0.05	0	0.01	0	0.16	1	0.001	0	0.002	0	0.01
M-62A	CH-CCR-MW62A-50516_O	5/5/2016 14:06	42495.59	0.0001	0	0.003	1	0.084	1	0.001	0	0.0001	0	0.0014
M-62A	CH-CCR-M62A-816_O	8/29/2016 10:55	42611.45	0.0001	0	0.0031	1	0.082	1	0.001	0	0.0001	0	0.0005
M-62A	CH-CCR-M62A-916_O	9/21/2016 15:02	42634.63	0.0005	0	0.0028	1	0.075	1	0.001	0	0.0001	0	0.00099
M-62A	CH-CCR-M62A-217_O	2/20/2017 12:04	42786.50	0.001	0	0.0029	1	0.064	1	0.001	0	0.0001	0	0.002
M-62A	CH-CCR-M62A-41317_O	4/13/2017 8:50	42838.37	0.001	0	0.0021	1	0.074	1	0.001	0	0.0001	0	0.0015
M-62A	CH-CCR-M62A-42517_O	4/25/2017 9:58	42850.42	0.001	0	0.0017	1	0.079	1	0.001	0	0.0001	0	0.0017
M-62A	CH-CCR-M62A-51817_O	5/18/2017 11:17	42873.47	0.001	0	0.0016	1	0.072	1	0.001	0	0.0001	0	0.00063
M-62A	CH-CCR-M62A-52517_O	5/25/2017 10:52	42880.45	0.001	0	0.0019	1	0.077	1	0.001	0	0.0001	0	0.00096
M-62A	CH-CCR-M62A-70117_O	7/1/2017 15:13	42917.63	0.001	0	0.0026	1	0.076	1	0.001	0	0.0001	0	0.0011
M-62A	CH-CCR-M62A-72617_O	7/26/2017 15:19	42942.64	0.002	0	0.0024	1	0.075	1	0.001	0	0.0002	0	0.001
M-62A	CH-CCR-M62A-90717_O	9/7/2017 18:34	42985.77	0.004	0	0.0031	1	0.079	1	0.001	0	0.0004	0	0.004
M-62A	CH-CCR-M62A-120817_O	12/8/2017 11:39	43077.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M-62A	CH-CCR-M-62A-52118_O	5/21/2018 13:50	43241.58	0.002	0	0.0029	1	0.072	1	0.001	0	0.0002	0	0.002
M-62A	CH-CCR-M62A-082818_O	8/28/2018 14:36	43340.61	NA	NA	0.0029	1	0.074	1	NA	NA	NA	NA	0.001
M-62A	CH-CCR-M62A-21519	2/15/2019 20:13	43511.84	NA	NA	0.003	1	0.068	1	NA	NA	NA	NA	0.001
M-62A	CH-CCR-M62A-41819	4/18/2019 0:00	43573.00	0.001	0	0.0033	1	0.068	1	0.001	0	0.0001	0	0.001
M-62A	CH-CCR-M62A-8919	8/9/2019 0:00	43686.00	NA	NA	0.0031	1	0.067	1	NA	NA	NA	NA	0.0037
M-62A	CH-CCR-M62A-112519	11/25/2019 12:47	43794.53	NA	NA	0.0048	1	0.15	1	NA	NA	NA	NA	0.0044

Appendix A
ProUCL Data

StationName	QC_SampleID	SampDate	NumDate	D_Chromium	Cobalt	D_Cobalt	Fluoride	D_Fluoride	Lead	D_Lead	Lithium	D_Lithium	Mercury	D_Mercury	Molybdenum	D_Molybdenum
M-56A	7873_O	11/30/2015 12:08	42338.51	1	0.0012	1	0.4	0	0.0005	0	0.2	0	0.0002	0	0.0096	1
M-56A	CH-M-56A-0316_O	3/8/2016 13:40	42437.57	0	0.002	1	0.43	1	0.01	0	0.2	0	0.0002	0	0.029	1
M-56A	CH-CCR-M56A-05102016_O	5/10/2016 14:11	42500.59	0	0.0013	1	0.42	1	0.0005	0	0.2	0	0.0002	0	0.023	1
M-56A	CH-CCR-M56A-816_O	8/29/2016 9:01	42611.38	0	0.0013	1	0.46	1	0.0005	0	0.2	0	0.0002	0	0.021	1
M-56A	CH-CCR-M56A-916_O	9/21/2016 10:52	42634.45	1	0.0012	1	0.4	1	0.0001	0	0.2	0	0.0002	0	0.016	1
M-56A	CH-CCR-M56A-217_O	2/20/2017 11:21	42786.47	1	0.00077	1	0.4	1	0.0005	0	0.2	0	0.0002	0	0.013	1
M-56A	CH-CCR-M56A-41317_O	4/13/2017 7:45	42838.32	1	0.00065	1	0.4	0	0.0005	0	0.2	0	0.0002	0	0.011	1
M-56A	CH-CCR-M56A-42517_O	4/25/2017 9:11	42850.38	1	0.00061	1	0.8	0	0.0005	0	0.2	0	0.0002	0	0.013	1
M-56A	CH-CCR-M56A-51817_O	5/18/2017 9:21	42873.39	1	0.0005	0	0.4	0	0.0005	0	0.2	0	0.0002	0	0.0095	1
M-56A	CH-CCR-M56A-52517_O	5/25/2017 10:17	42880.43	1	0.00075	1	0.4	0	0.0005	0	0.2	0	0.0002	0	0.011	1
M-56A	CH-CCR-M56A-70117_O	7/1/2017 14:43	42917.61	1	0.0005	0	0.41	1	0.0005	0	0.2	0	0.0002	0	0.0098	1
M-56A	CH-CCR-M56A-72617_O	7/26/2017 14:40	42942.61	1	0.001	0	0.4	0	0.001	0	0.2	0	0.0002	0	0.009	1
M-56A	CH-CCR-M56A-90817_O	9/8/2017 8:35	42986.36	0	0.002	0	0.47	1	0.002	0	0.2	0	0.0002	0	0.0093	1
M-56A	CH-CCR-M56A-120817_O	12/8/2017 11:15	43077.47	NA	NA	NA	0.49	1	NA	NA	NA	NA	NA	NA	NA	NA
M-56A	CH-CCR-M-56A-52118_O	5/21/2018 12:01	43241.50	1	0.0005	0	0.4	0	0.0005	0	0.2	0	0.0002	0	0.0079	1
M-56A	CH-CCR-M56A-082818_O	8/28/2018 14:07	43340.59	1	0.0005	0	NA	NA	NA	NA	NA	NA	NA	NA	0.0057	1
M-56A	CH-CCR-M56A-21519	2/15/2019 22:14	43511.93	1	0.00073	1	0.4	0	NA	NA	NA	NA	NA	NA	0.0074	1
M-56A	CH-CCR-M56A-41819	4/18/2019 0:00	43573.00	1	0.0013	1	0.4	0	0.0005	0	0.2	0	0.0002	0	0.014	1
M-56A	CH-CCR-M56A-8919	8/9/2019 0:00	43686.00	1	0.0012	1	0.8	0	NA	NA	0.2	0	NA	NA	0.011	1
M-56A	CH-CCR-M56A-112519	11/25/2019 11:19	43794.47	1	0.00064	1	0.4	0	NA	NA	NA	NA	NA	NA	0.0087	1
M-57A	7874_O	11/30/2015 13:05	42338.55	1	0.0077	1	0.4	0	0.00086	1	0.2	0	0.0002	0	0.008	1
M-57A	CH-M-57A-0316_O	3/8/2016 14:40	42437.61	0	0.0082	1	0.4	0	0.01	0	0.2	0	0.0002	0	0.004	1
M-57A	CH-CCR-M57A-05112016_O	5/11/2016 8:53	42501.37	0	0.0065	1	0.4	0	0.0005	0	0.2	0	0.0002	0	0.0011	1
M-57A	CH-CCR-M57A-816_O	8/25/2016 13:23	42607.56	1	0.0078	1	0.4	0	0.0005	0	0.2	0	0.0002	0	0.022	1
M-57A	CH-CCR-M57A-916_O	9/21/2016 13:59	42634.58	1	0.0067	1	0.4	0	0.00021	1	0.2	0	0.0002	0	0.0029	1
M-57A	CH-CCR-M57A-217_O	2/20/2017 10:30	42786.44	1	0.0086	1	0.4	0	0.0005	0	0.2	0	0.0002	0	0.0048	1
M-57A	CH-CCR-M57A-41217_O	4/12/2017 18:28	42837.77	1	0.0087	1	0.4	0	0.0005	0	0.2	0	0.0002	0	0.0047	1
M-57A	CH-CCR-M57A-42517_O	4/25/2017 8:39	42850.36	1	0.0077	1	0.4	0	0.0005	0	0.2	0	0.0002	0	0.0042	1
M-57A	CH-CCR-M57A-51817_O	5/18/2017 10:10	42873.42	1	0.0076	1	0.4	0	0.0005	0	0.2	0	0.0002	0	0.0041	1
M-57A	CH-CCR-M57A-52517_O	5/25/2017 8:30	42880.35	1	0.0083	1	0.4	0	0.0005	0	0.2	0	0.0002	0	0.0063	1
M-57A	CH-CCR-M57A-70117_O	7/1/2017 14:11	42917.59	1	0.0075	1	0.42	1	0.0005	0	0.2	0	0.0002	0	0.0037	1
M-57A	CH-CCR-M57A-72617_O	7/26/2017 13:53	42942.58	1	0.0088	1	0.4	0	0.001	0	0.2	0	0.0002	0	0.0058	1
M-57A	CH-CCR-M57A-90817_O	9/8/2017 8:01	42986.33	1	0.0082	1	0.4	0	0.002	0	0.2	0	0.0002	0	0.0046	1
M-57A	CH-CCR-M57A-120817_O	12/8/2017 10:54	43077.45	NA	NA	NA	0.4	0	NA	NA	NA	NA	NA	NA	NA	NA
M-57A	CH-CCR-M-57A-52118_O	5/21/2018 12:33	43241.52	1	0.0058	1	0.4	0	0.001	0	0.2	0	0.0002	0	0.0026	1
M-57A	CH-CCR-M57A-082818_O	8/28/2018 13:07	43340.55	1	0.0057	1	NA	NA	NA	NA	NA	NA	NA	NA	0.003	1
M-57A	CH-CCR-M57A-21519	2/15/2019 21:41	43511.90	1	0.0049	1	0.4	0	NA	NA	NA	NA	NA	NA	0.0029	1
M-57A	CH-CCR-M57A-41719	4/17/2019 15:28	43572.64	1	0.005	1	0.53	1	0.0005	0	0.2	0	0.0002	0	0.0078	1
M-57A	CH-CCR-M57A-8919	8/9/2019 0:00	43686.00	1	0.004	1	0.8	0	NA	NA	0.2	0	NA	NA	0.0068	1
M-57A	CH-CCR-M57A-112519	11/25/2019 10:41	43794.45	1	0.0044	1	0.4	0	NA	NA	NA	NA	NA	NA	0.012	1
M-58A	7876_O	11/30/2015 14:30	42338.60	0	0.0011	1	0.43	1	0.00056	1	0.2	0	0.0002	0	0.0047	1
M-58A	CH-M-58A-0316_O	3/8/2016 14:50	42437.62	0	0.01	0	0.4	0	0.01	0	0.2	0	0.0002	0	0.01	0
M-58A	CH-CCR-M58A-05112016_O	5/11/2016 10:20	42501.43	0	0.00051	1	0.4	0	0.0005	0	0.2	0	0.0002	0	0.0018	1
M-58A	CH-CCR-M58A-816_O	8/25/2016 14:11	42607.59	1	0.00079	1	0.4	0	0.00059	1	0.2	0	0.0002	0	0.02	1
M-58A	CH-CCR-M58A-916_O	9/21/2016 13:16	42634.55	1	0.00057	1	0.4	0	0.0001	0	0.2	0	0.0002	0	0.0025	1
M-58A	CH-CCR-M58A-217_O	2/20/2017 9:49	42786.41	1	0.00097	1	0.4	0	0.00078	1	0.2	0	0.0002	0	0.0022	1
M-58A	CH-CCR-M58A-41217_O	4/12/2017 17:41	42837.74	1	0.0005	0	0.4	0	0.0005	0	0.2	0	0.0002	0	0.0017	1
M-58A	CH-CCR-M58A-42517_O	4/25/2017 8:08	42850.34	1	0.0005	0	0.8	0	0.0005	0	0.2	0	0.0002	0	0.0015	1

Appendix A
ProUCL Data

StationName	QC_SampleID	SampDate	NumDate	D_Chromium	Cobalt	D_Cobalt	Fluoride	D_Fluoride	Lead	D_Lead	Lithium	D_Lithium	Mercury	D_Mercury	Molybdenum	D_Molybdenum
M-58A	CH-CCR-M58A-51817_O	5/18/2017 10:40	42873.44	1	0.0005	0	0.4	0	0.0005	0	0.2	0	0.0002	0	0.0014	1
M-58A	CH-CCR-M58A-52517_O	5/25/2017 7:48	42880.33	1	0.0005	0	0.4	0	0.0005	0	0.2	0	0.0002	0	0.0016	1
M-58A	CH-CCR-M58A-70117_O	7/1/2017 13:41	42917.57	0	0.0005	0	0.4	0	0.0005	0	0.2	0	0.0002	0	0.0018	1
M-58A	CH-CCR-M58A-72617_O	7/26/2017 11:10	42942.47	1	0.001	1	0.4	0	0.0011	1	0.2	0	0.0002	0	0.0021	1
M-58A	CH-CCR-M58A-90817_O	9/8/2017 7:29	42986.31	0	0.002	0	0.4	0	0.002	0	0.2	0	0.0002	0	0.0022	1
M-58A	CH-CCR-M58A-120817_O	12/8/2017 10:22	43077.43	NA	NA	NA	0.4	0	NA	NA	NA	NA	NA	NA	NA	NA
M-58A	CH-CCR-M-58A-52118_O	5/21/2018 13:18	43241.55	0	0.001	0	0.4	0	0.001	0	0.2	0	0.0002	0	0.0018	1
M-58A	CH-CCR-M58A-082818_O	8/28/2018 9:35	43340.40	0	0.0005	0	NA	NA	NA	NA	NA	NA	NA	NA	0.0017	1
M-58A	CH-CCR-M58A-21519	2/15/2019 21:04	43511.88	0	0.0005	0	0.4	0	NA	NA	NA	NA	NA	NA	0.0018	NA
M-58A	CH-CCR-M58A-41719	4/17/2019 0:00	43572.00	0	0.0005	0	0.4	0	0.0005	0	0.2	0	0.0002	0	0.0018	1
M-58A	CH-CCR-M58A-8919	8/9/2019 0:00	43686.00	0	0.0005	0	0.8	0	NA	NA	0.2	0	NA	NA	0.0018	1
M-58A	CH-CCR-M58A-112519	11/25/2019 9:07	43794.38	0	0.00050	0	0.4	0	NA	NA	NA	NA	NA	NA	0.0018	1
M-62A	7872_O	11/30/2015 10:56	42338.46	1	0.00054	1	0.4	0	0.0005	0	0.2	0	0.0002	0	0.011	1
M-62A	CH-M-62A-0316_O	3/8/2016 11:54	42437.50	0	0.0022	1	0.8	0	0.01	0	0.2	0	0.0002	0	0.0044	1
M-62A	CH-CCR-MW62A-50516_O	5/5/2016 14:06	42495.59	1	0.0012	1	0.4	0	0.0005	0	0.2	0	0.0002	0	0.0026	1
M-62A	CH-CCR-M62A-816_O	8/29/2016 10:55	42611.45	0	0.0005	0	0.8	0	0.0005	0	0.2	0	0.0002	0	0.0023	1
M-62A	CH-CCR-M62A-916_O	9/21/2016 15:02	42634.63	1	0.00046	1	0.8	0	0.0001	0	0.2	0	0.0002	0	0.0022	1
M-62A	CH-CCR-M62A-217_O	2/20/2017 12:04	42786.50	1	0.0005	0	0.4	0	0.0005	0	0.2	0	0.0002	0	0.0019	1
M-62A	CH-CCR-M62A-41317_O	4/13/2017 8:50	42838.37	1	0.0005	0	0.4	0	0.0005	0	0.2	0	0.0002	0	0.0023	1
M-62A	CH-CCR-M62A-42517_O	4/25/2017 9:58	42850.42	1	0.0005	0	0.8	0	0.0005	0	0.2	0	0.0002	0	0.0022	1
M-62A	CH-CCR-M62A-51817_O	5/18/2017 11:17	42873.47	1	0.0005	0	0.4	0	0.0005	0	0.2	0	0.0002	0	0.002	1
M-62A	CH-CCR-M62A-52517_O	5/25/2017 10:52	42880.45	1	0.0005	0	0.4	0	0.0005	0	0.2	0	0.0002	0	0.0022	1
M-62A	CH-CCR-M62A-70117_O	7/1/2017 15:13	42917.63	1	0.0005	0	0.4	0	0.0005	0	0.2	0	0.0002	0	0.0022	1
M-62A	CH-CCR-M62A-72617_O	7/26/2017 15:19	42942.64	0	0.001	0	0.4	0	0.001	0	0.2	0	0.0002	0	0.0021	1
M-62A	CH-CCR-M62A-90717_O	9/7/2017 18:34	42985.77	0	0.002	0	0.4	0	0.002	0	0.2	0	0.0002	0	0.003	1
M-62A	CH-CCR-M62A-120817_O	12/8/2017 11:39	43077.49	NA	NA	NA	0.4	0	NA	NA	NA	NA	NA	NA	NA	NA
M-62A	CH-CCR-M-62A-52118_O	5/21/2018 13:50	43241.58	0	0.001	0	0.4	0	0.001	0	0.2	0	0.0002	0	0.0024	1
M-62A	CH-CCR-M62A-082818_O	8/28/2018 14:36	43340.61	0	0.0005	0	NA	NA	NA	NA	NA	NA	NA	NA	0.0023	1
M-62A	CH-CCR-M62A-21519	2/15/2019 20:13	43511.84	0	0.0005	0	0.4	0	NA	NA	NA	NA	NA	NA	0.0024	1
M-62A	CH-CCR-M62A-41819	4/18/2019 0:00	43573.00	0	0.0005	0	0.47	1	0.0005	0	0.2	0	0.0002	0	0.0026	1
M-62A	CH-CCR-M62A-8919	8/9/2019 0:00	43686.00	1	0.0005	0	0.4	0	NA	NA	0.2	0	NA	NA	0.0028	1
M-62A	CH-CCR-M62A-112519	11/25/2019 12:47	43794.53	1	0.0012	1	0.4	0	NA	NA	NA	NA	NA	NA	0.0091	1

Appendix A
ProUCL Data

StationName	QC_SampleID	SampDate	NumDate	Radium	D_Radium	Selenium	D_Selenium	Thallium	D_Thallium
M-56A	7873_O	11/30/2015 12:08	42338.51	0.9	0	0.00033	1	0.0001	0
M-56A	CH-M-56A-0316_O	3/8/2016 13:40	42437.57	0.4	0	0.01	0	0.002	0
M-56A	CH-CCR-M56A-05102016_O	5/10/2016 14:11	42500.59	0.6	1	0.0005	0	0.0001	0
M-56A	CH-CCR-M56A-816_O	8/29/2016 9:01	42611.38	1.6	1	0.0005	0	0.0001	0
M-56A	CH-CCR-M56A-916_O	9/21/2016 10:52	42634.45	0.6	1	0.0006	0	0.0001	0
M-56A	CH-CCR-M56A-217_O	2/20/2017 11:21	42786.47	1.8	1	0.0005	0	0.0001	0
M-56A	CH-CCR-M56A-41317_O	4/13/2017 7:45	42838.32	1.2	1	0.0005	0	0.0001	0
M-56A	CH-CCR-M56A-42517_O	4/25/2017 9:11	42850.38	1.9	1	0.00056	1	0.0001	0
M-56A	CH-CCR-M56A-51817_O	5/18/2017 9:21	42873.39	1.2	0	0.0005	0	0.0001	0
M-56A	CH-CCR-M56A-52517_O	5/25/2017 10:17	42880.43	1.5	1	0.00057	1	0.0001	0
M-56A	CH-CCR-M56A-70117_O	7/1/2017 14:43	42917.61	0.7	0	0.0005	0	0.0001	0
M-56A	CH-CCR-M56A-72617_O	7/26/2017 14:40	42942.61	1.7	1	0.001	0	0.0002	0
M-56A	CH-CCR-M56A-90817_O	9/8/2017 8:35	42986.36	0.5	1	0.002	0	0.0004	0
M-56A	CH-CCR-M56A-120817_O	12/8/2017 11:15	43077.47	NA	NA	NA	NA	NA	NA
M-56A	CH-CCR-M-56A-52118_O	5/21/2018 12:01	43241.50	1.4	1	0.0005	0	0.00012	1
M-56A	CH-CCR-M56A-082818_O	8/28/2018 14:07	43340.59	0.5	1	NA	NA	0.0001	0
M-56A	CH-CCR-M56A-21519	2/15/2019 22:14	43511.93	NA	NA	NA	NA	0.0001	0
M-56A	CH-CCR-M56A-41819	4/18/2019 0:00	43573.00	0.7	0	0.00062	1	0.0001	0
M-56A	CH-CCR-M56A-8919	8/9/2019 0:00	43686.00	0.6	1	NA	NA	0.0001	0
M-56A	CH-CCR-M56A-112519	11/25/2019 11:19	43794.47	NA	NA	NA	NA	0.0001	0
M-57A	7874_O	11/30/2015 13:05	42338.55	0.9	0	0.00029	1	0.0001	0
M-57A	CH-M-57A-0316_O	3/8/2016 14:40	42437.61	0.4	0	0.01	0	0.002	0
M-57A	CH-CCR-M57A-05112016_O	5/11/2016 8:53	42501.37	0.6	0	0.0005	0	0.0001	0
M-57A	CH-CCR-M57A-816_O	8/25/2016 13:23	42607.56	0.6	0	0.0005	0	0.0001	0
M-57A	CH-CCR-M57A-916_O	9/21/2016 13:59	42634.58	0.7	0	0.0006	0	0.0001	0
M-57A	CH-CCR-M57A-217_O	2/20/2017 10:30	42786.44	1.1	1	0.0005	0	0.0001	0
M-57A	CH-CCR-M57A-41217_O	4/12/2017 18:28	42837.77	0.6	0	0.0005	0	0.0001	0
M-57A	CH-CCR-M57A-42517_O	4/25/2017 8:39	42850.36	0.6	0	0.0005	0	0.0001	0
M-57A	CH-CCR-M57A-51817_O	5/18/2017 10:10	42873.42	1.5	1	0.0005	0	0.0001	0
M-57A	CH-CCR-M57A-52517_O	5/25/2017 8:30	42880.35	0.5	1	0.0005	0	0.0001	0
M-57A	CH-CCR-M57A-70117_O	7/1/2017 14:11	42917.59	0.7	0	0.0005	0	0.0001	0
M-57A	CH-CCR-M57A-72617_O	7/26/2017 13:53	42942.58	0.7	0	0.001	0	0.0002	0
M-57A	CH-CCR-M57A-90817_O	9/8/2017 8:01	42986.33	0.6	1	0.002	0	0.0004	0
M-57A	CH-CCR-M57A-120817_O	12/8/2017 10:54	43077.45	NA	NA	NA	NA	NA	NA
M-57A	CH-CCR-M-57A-52118_O	5/21/2018 12:33	43241.52	0.7	0	0.001	0	0.0002	0
M-57A	CH-CCR-M57A-082818_O	8/28/2018 13:07	43340.55	0.7	1	NA	NA	0.0001	0
M-57A	CH-CCR-M57A-21519	2/15/2019 21:41	43511.90	NA	NA	NA	NA	0.0001	0
M-57A	CH-CCR-M57A-41719	4/17/2019 15:28	43572.64	0.7	0	0.00069	1	0.0001	0
M-57A	CH-CCR-M57A-8919	8/9/2019 0:00	43686.00	0.7	0	NA	NA	0.0001	0
M-57A	CH-CCR-M57A-112519	11/25/2019 10:41	43794.45	NA	NA	NA	NA	0.0001	0
M-58A	7876_O	11/30/2015 14:30	42338.60	0.9	0	0.00024	1	0.0001	0
M-58A	CH-M-58A-0316_O	3/8/2016 14:50	42437.62	0.6	0	0.01	0	0.002	0
M-58A	CH-CCR-M58A-05112016_O	5/11/2016 10:20	42501.43	0.9	1	0.0005	0	0.0001	0
M-58A	CH-CCR-M58A-816_O	8/25/2016 14:11	42607.59	2.6	1	0.0005	0	0.0001	0
M-58A	CH-CCR-M58A-916_O	9/21/2016 13:16	42634.55	1.2	1	0.0006	0	0.0001	0
M-58A	CH-CCR-M58A-217_O	2/20/2017 9:49	42786.41	0.8	1	0.0005	0	0.0001	0
M-58A	CH-CCR-M58A-41217_O	4/12/2017 17:41	42837.74	1.9	1	0.0005	0	0.0001	0
M-58A	CH-CCR-M58A-42517_O	4/25/2017 8:08	42850.34	0.9	1	0.0005	0	0.0001	0

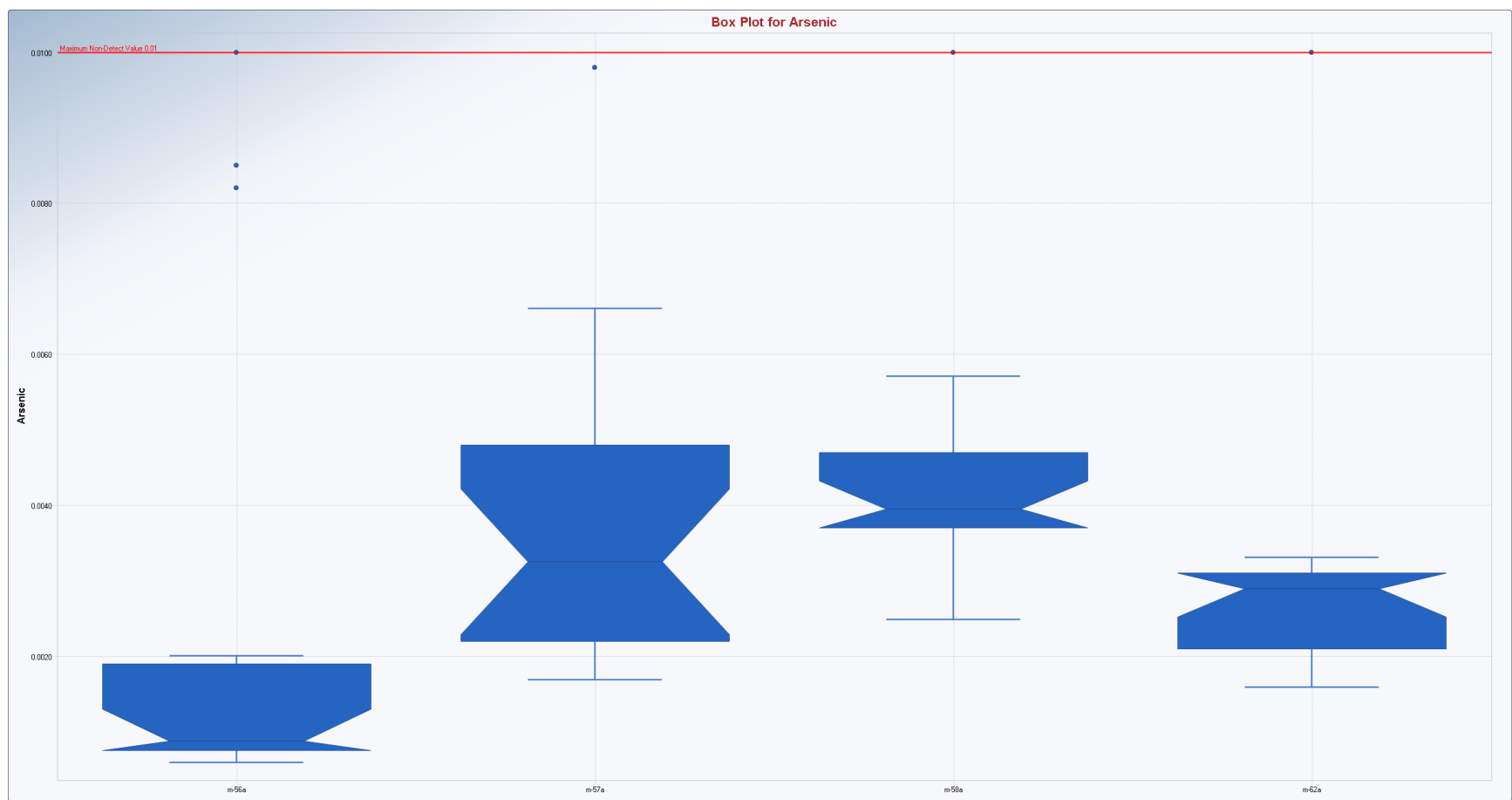
Appendix A
ProUCL Data

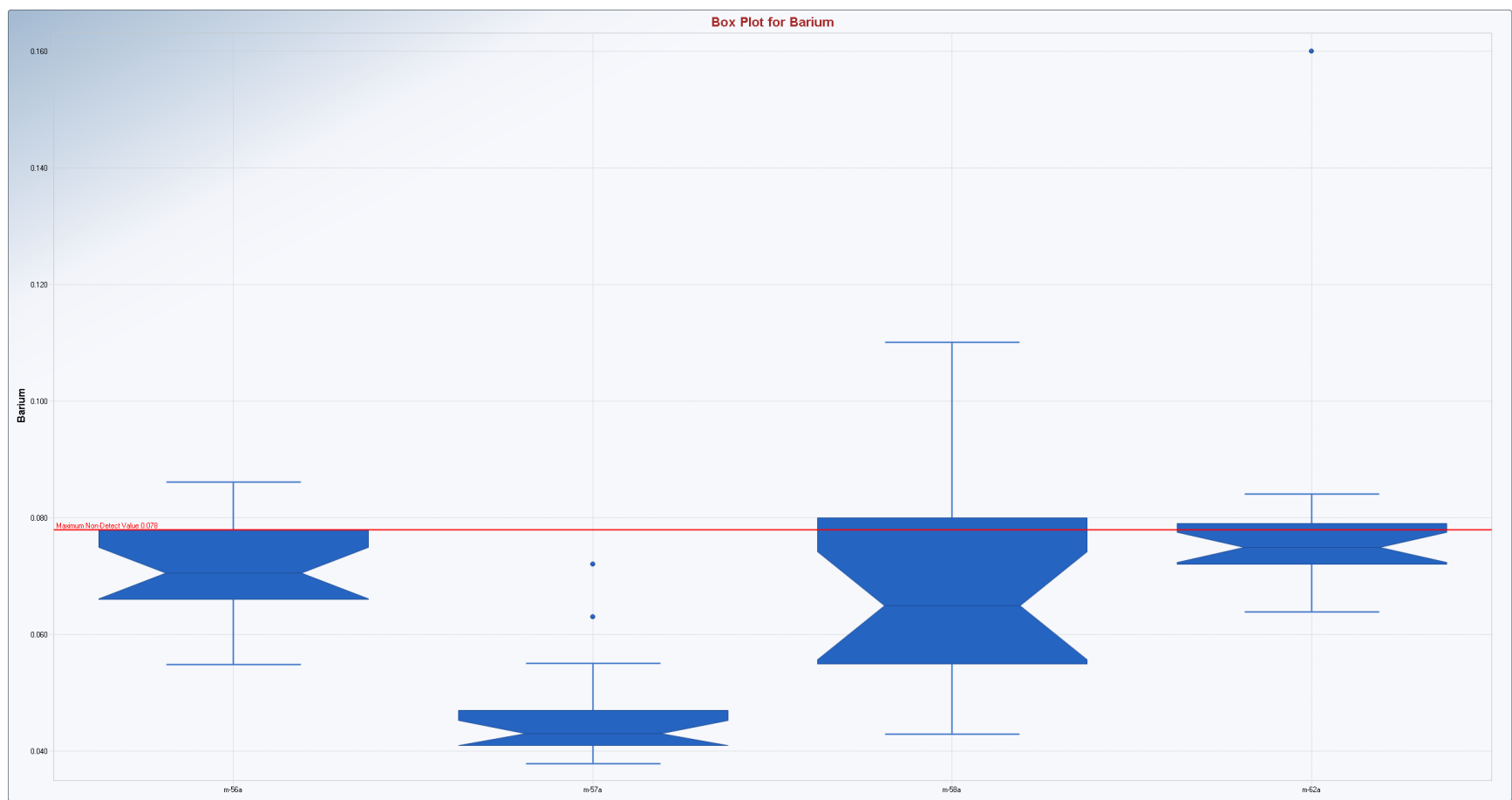
StationName	QC_SampleID	SampDate	NumDate	Radium	D_Radium	Selenium	D_Selenium	Thallium	D_Thallium
M-58A	CH-CCR-M58A-51817_O	5/18/2017 10:40	42873.44	0.6	0	0.0005	0	0.0001	0
M-58A	CH-CCR-M58A-52517_O	5/25/2017 7:48	42880.33	2.2	1	0.0005	0	0.0001	0
M-58A	CH-CCR-M58A-70117_O	7/1/2017 13:41	42917.57	0.7	0	0.0005	0	0.0001	0
M-58A	CH-CCR-M58A-72617_O	7/26/2017 11:10	42942.47	0.7	0	0.001	0	0.0002	0
M-58A	CH-CCR-M58A-90817_O	9/8/2017 7:29	42986.31	0.7	0	0.002	0	0.0004	0
M-58A	CH-CCR-M58A-120817_O	12/8/2017 10:22	43077.43	NA	NA	NA	NA	NA	NA
M-58A	CH-CCR-M-58A-52118_O	5/21/2018 13:18	43241.55	0.7	1	0.001	0	0.0002	0
M-58A	CH-CCR-M58A-082818_O	8/28/2018 9:35	43340.40	0.6	0	NA	NA	0.0001	0
M-58A	CH-CCR-M58A-21519	2/15/2019 21:04	43511.88	NA	NA	NA	NA	0.0001	0
M-58A	CH-CCR-M58A-41719	4/17/2019 0:00	43572.00	0.7	0	0.0005	0	0.0001	0
M-58A	CH-CCR-M58A-8919	8/9/2019 0:00	43686.00	0.7	0	NA	NA	0.0001	0
M-58A	CH-CCR-M58A-112519	11/25/2019 9:07	43794.38	NA	NA	NA	NA	0.0001	0
M-62A	7872_O	11/30/2015 10:56	42338.46	0.7	0	0.00071	1	0.0001	0
M-62A	CH-M-62A-0316_O	3/8/2016 11:54	42437.50	1	1	0.01	0	0.0005	1
M-62A	CH-CCR-MW62A-50516_O	5/5/2016 14:06	42495.59	0.5	1	0.0005	0	0.0001	0
M-62A	CH-CCR-M62A-816_O	8/29/2016 10:55	42611.45	0.9	1	0.0005	0	0.0001	0
M-62A	CH-CCR-M62A-916_O	9/21/2016 15:02	42634.63	2	1	0.00078	1	0.0001	0
M-62A	CH-CCR-M62A-217_O	2/20/2017 12:04	42786.50	1.4	1	0.0005	0	0.0001	0
M-62A	CH-CCR-M62A-41317_O	4/13/2017 8:50	42838.37	1.2	1	0.0005	0	0.0001	0
M-62A	CH-CCR-M62A-42517_O	4/25/2017 9:58	42850.42	0.9	1	0.0005	0	0.0001	0
M-62A	CH-CCR-M62A-51817_O	5/18/2017 11:17	42873.47	1.2	1	0.0005	0	0.0001	0
M-62A	CH-CCR-M62A-52517_O	5/25/2017 10:52	42880.45	1.5	1	0.0005	0	0.0001	0
M-62A	CH-CCR-M62A-70117_O	7/1/2017 15:13	42917.63	0.7	0	0.0005	0	0.0001	0
M-62A	CH-CCR-M62A-72617_O	7/26/2017 15:19	42942.64	1.3	1	0.001	0	0.0002	0
M-62A	CH-CCR-M62A-90717_O	9/7/2017 18:34	42985.77	0.9	1	0.002	0	0.0004	0
M-62A	CH-CCR-M62A-120817_O	12/8/2017 11:39	43077.49	NA	NA	NA	NA	NA	NA
M-62A	CH-CCR-M-62A-52118_O	5/21/2018 13:50	43241.58	0.7	1	0.001	0	0.0002	0
M-62A	CH-CCR-M62A-082818_O	8/28/2018 14:36	43340.61	0.5	1	NA	NA	0.0001	0
M-62A	CH-CCR-M62A-21519	2/15/2019 20:13	43511.84	NA	NA	NA	NA	0.0001	0
M-62A	CH-CCR-M62A-41819	4/18/2019 0:00	43573.00	0.8	1	0.0005	0	0.0001	0
M-62A	CH-CCR-M62A-8919	8/9/2019 0:00	43686.00	NA	NA	NA	NA	0.0001	0
M-62A	CH-CCR-M62A-112519	11/25/2019 12:47	43794.53	NA	NA	NA	NA	0.00016	1

APPENDIX B

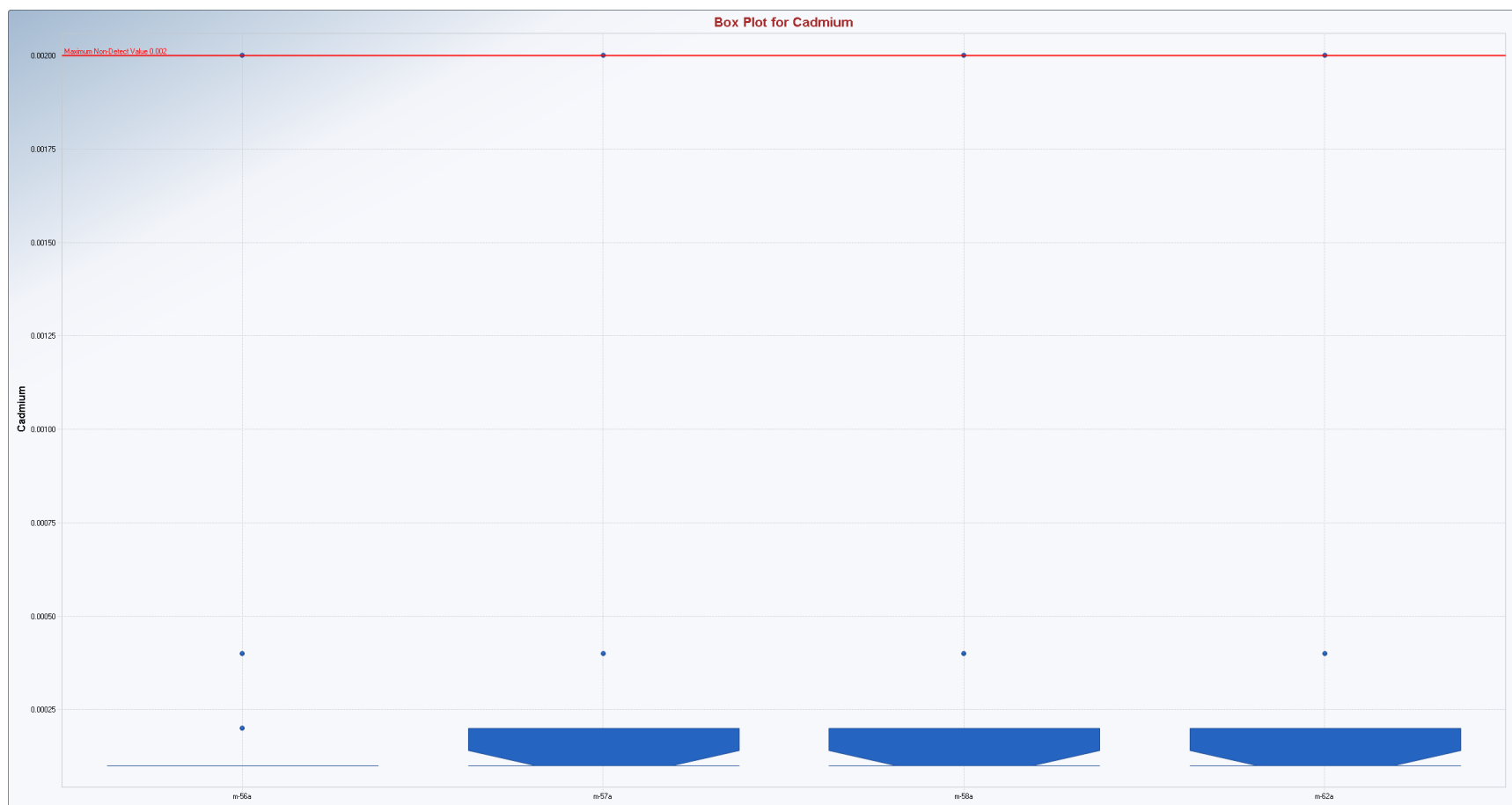
PROUCL EDA OUTPUT FILES

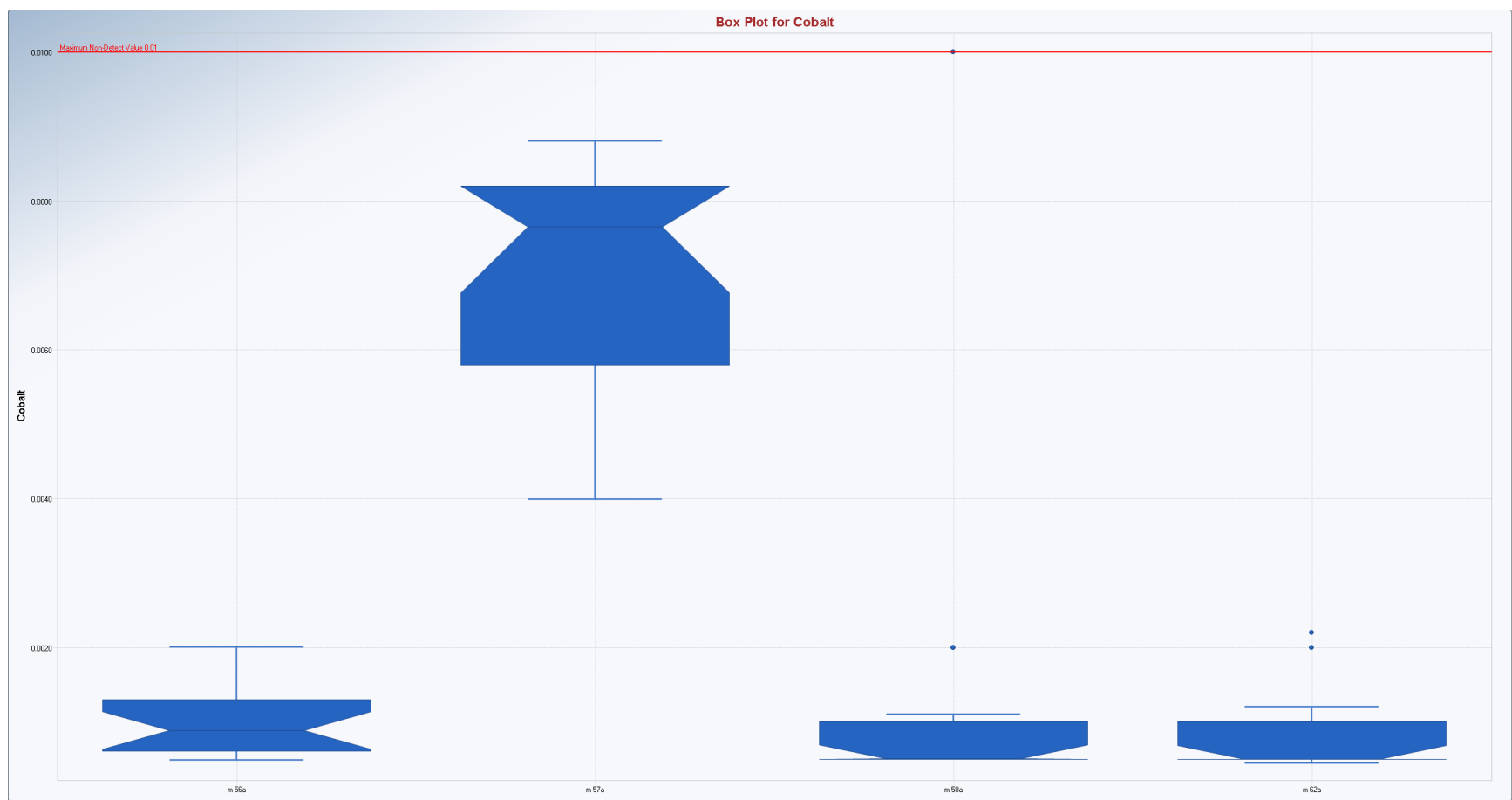


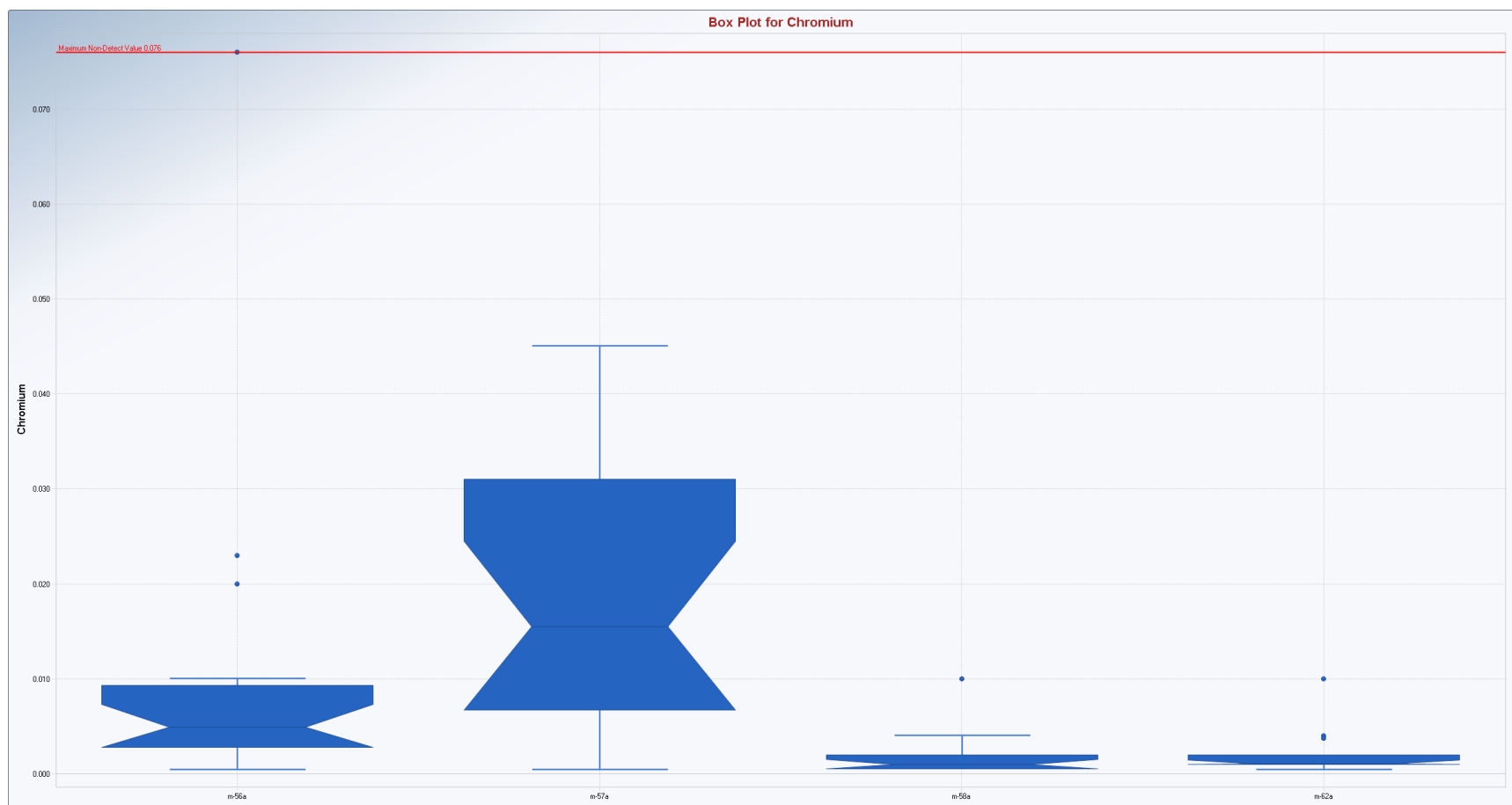










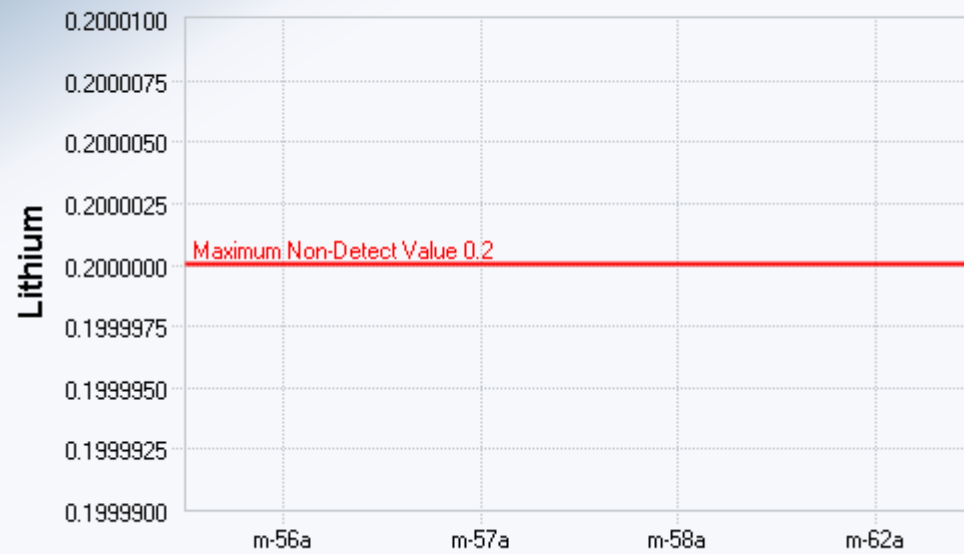




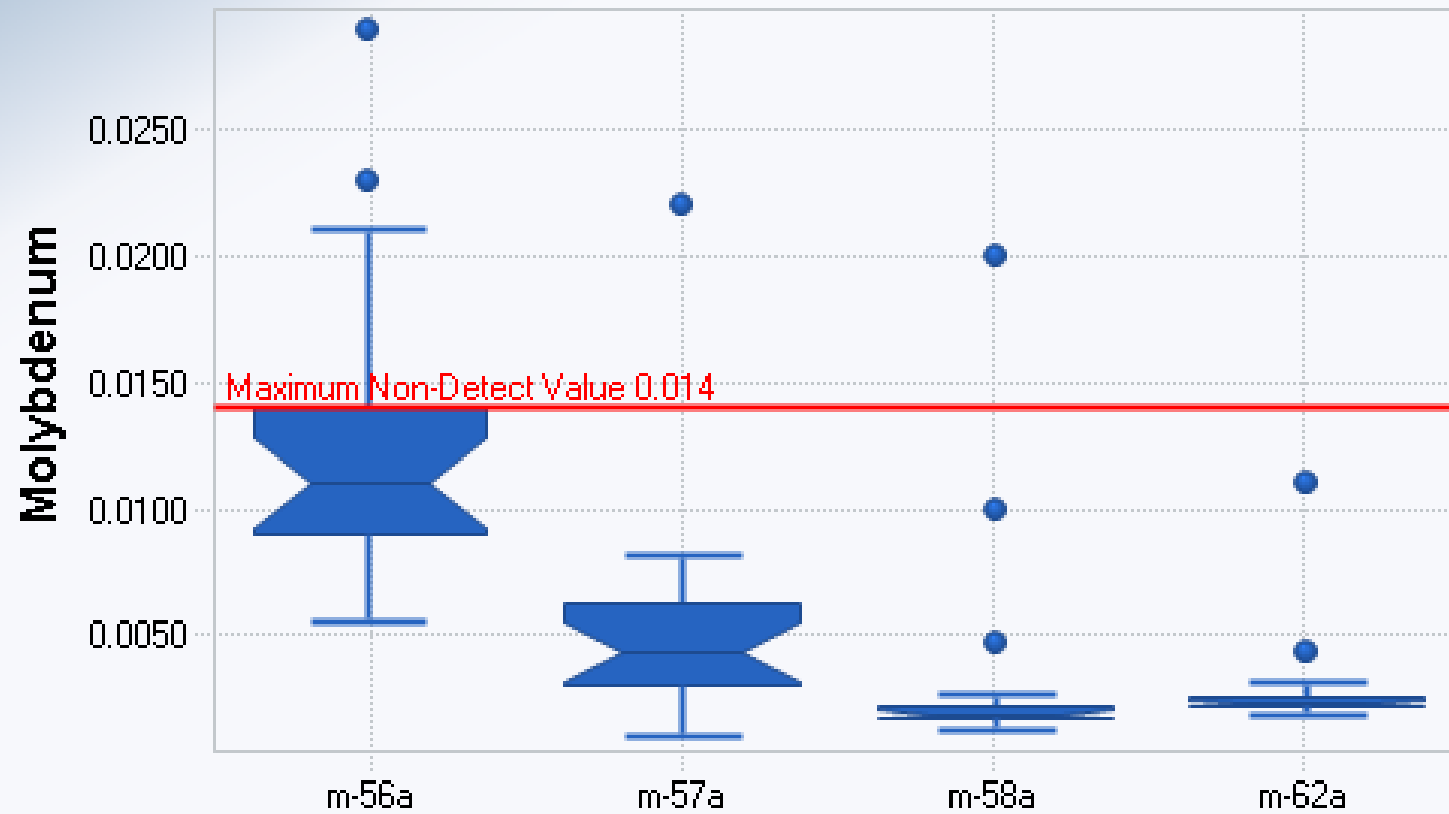
Box Plot for Mercury



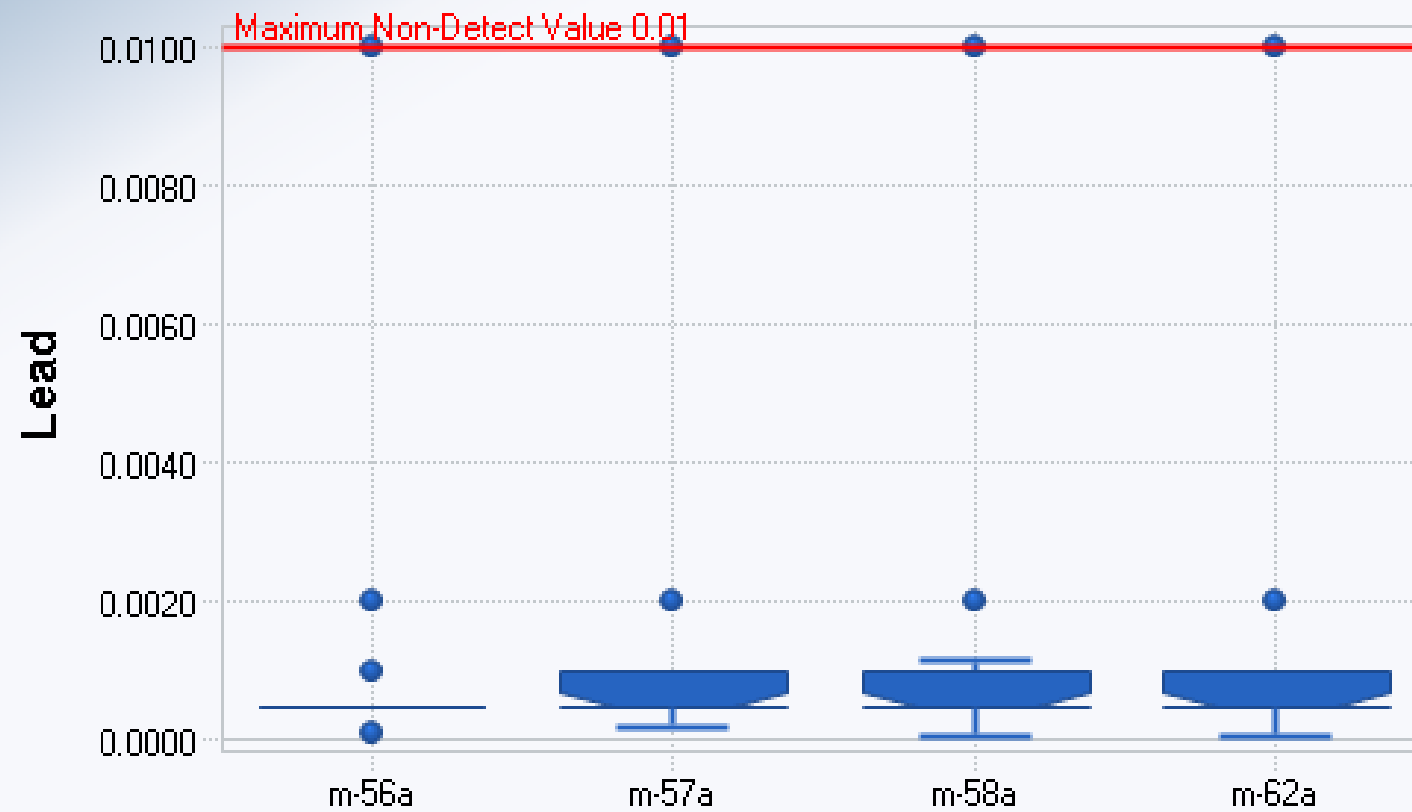
Box Plot for Lithium



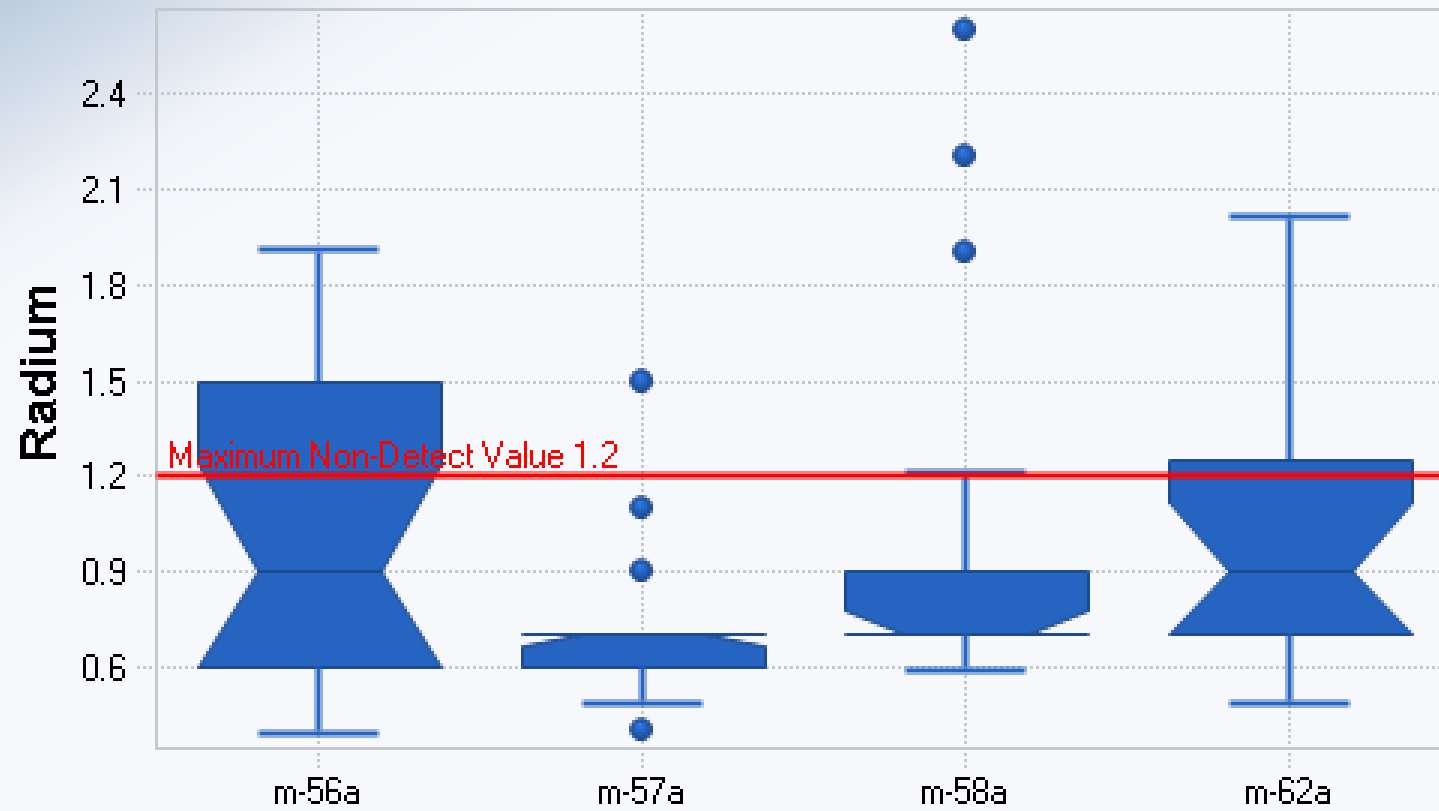
Box Plot for Molybdenum

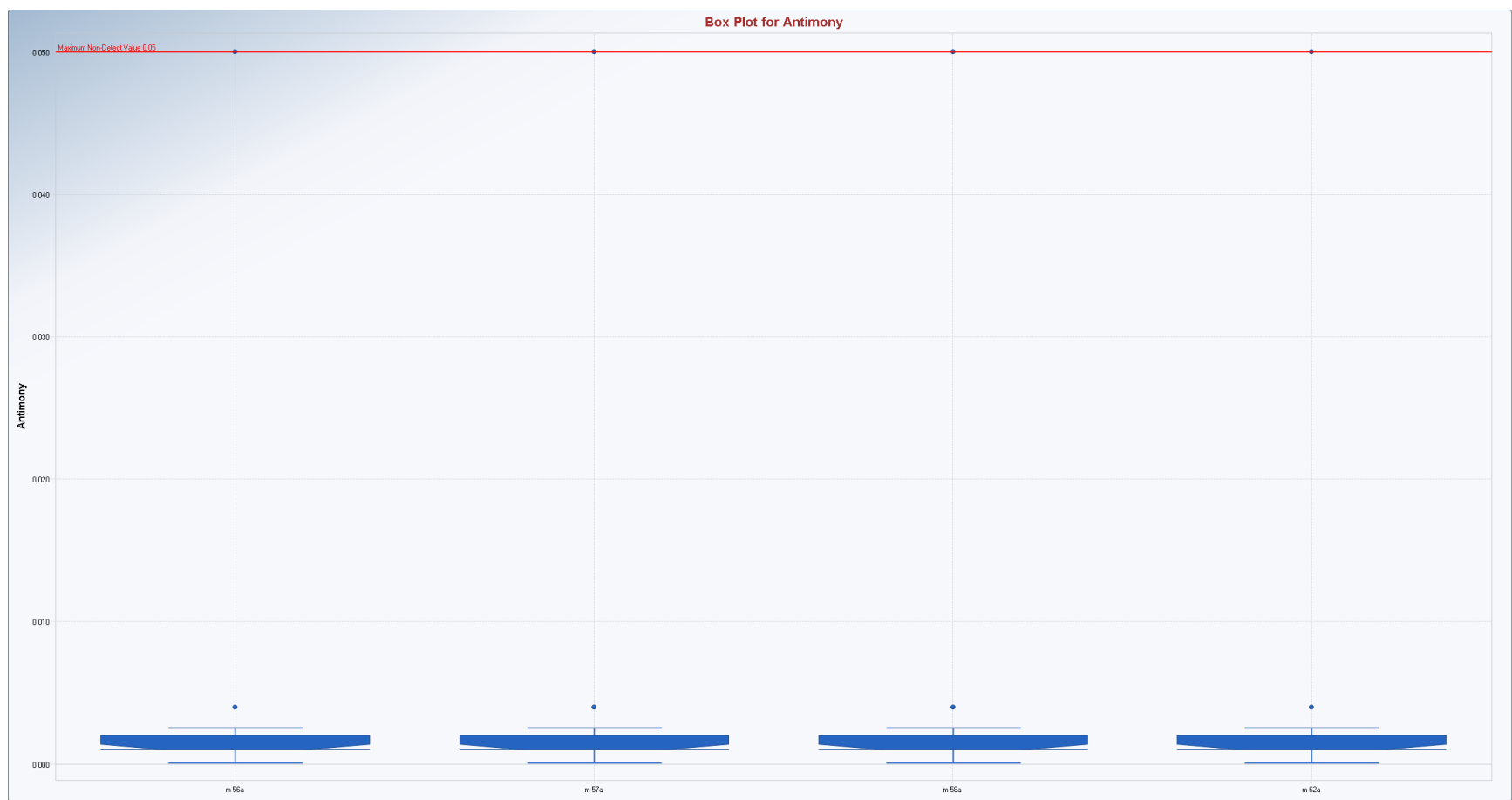


Box Plot for Lead

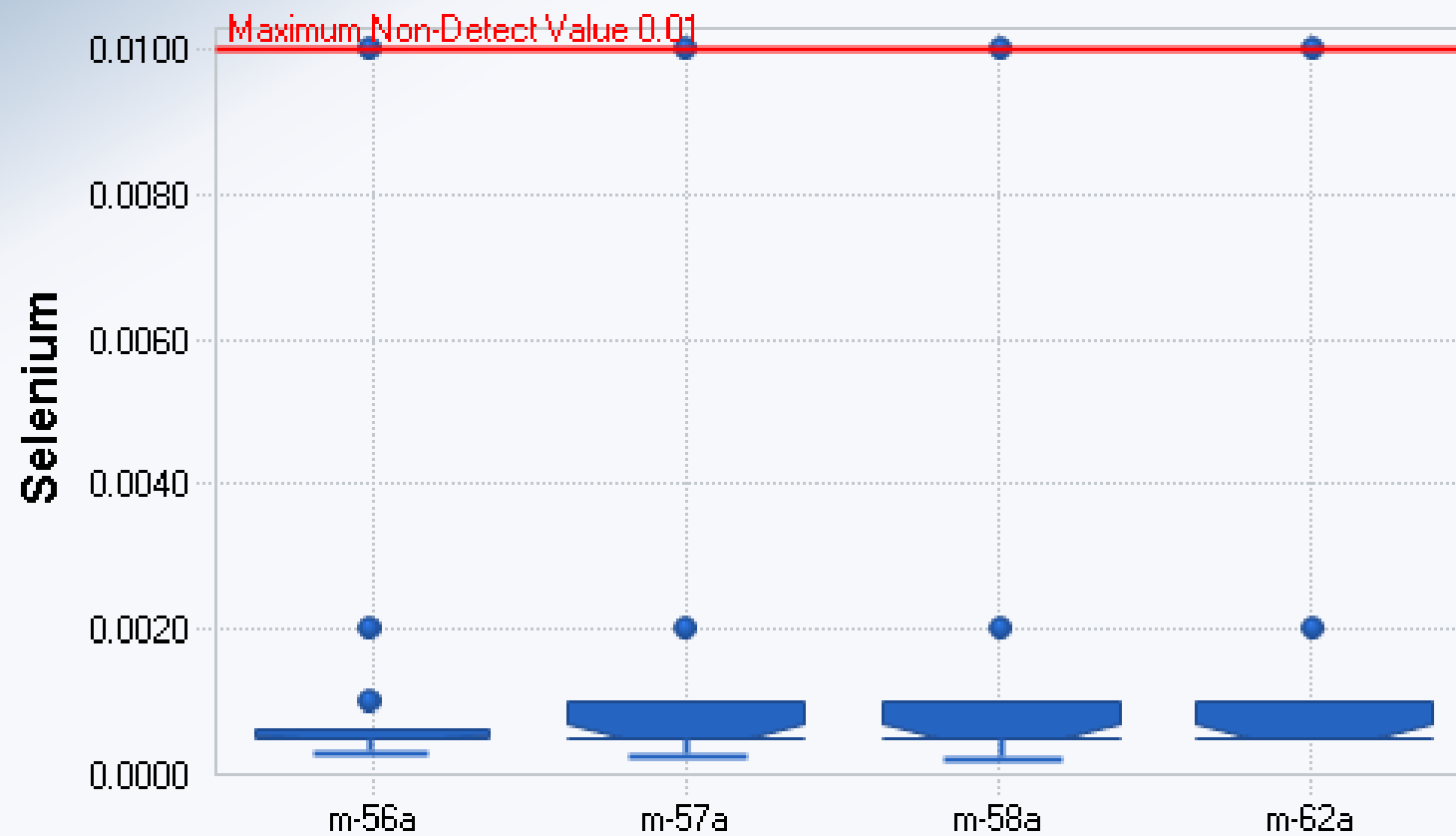


Box Plot for Radium

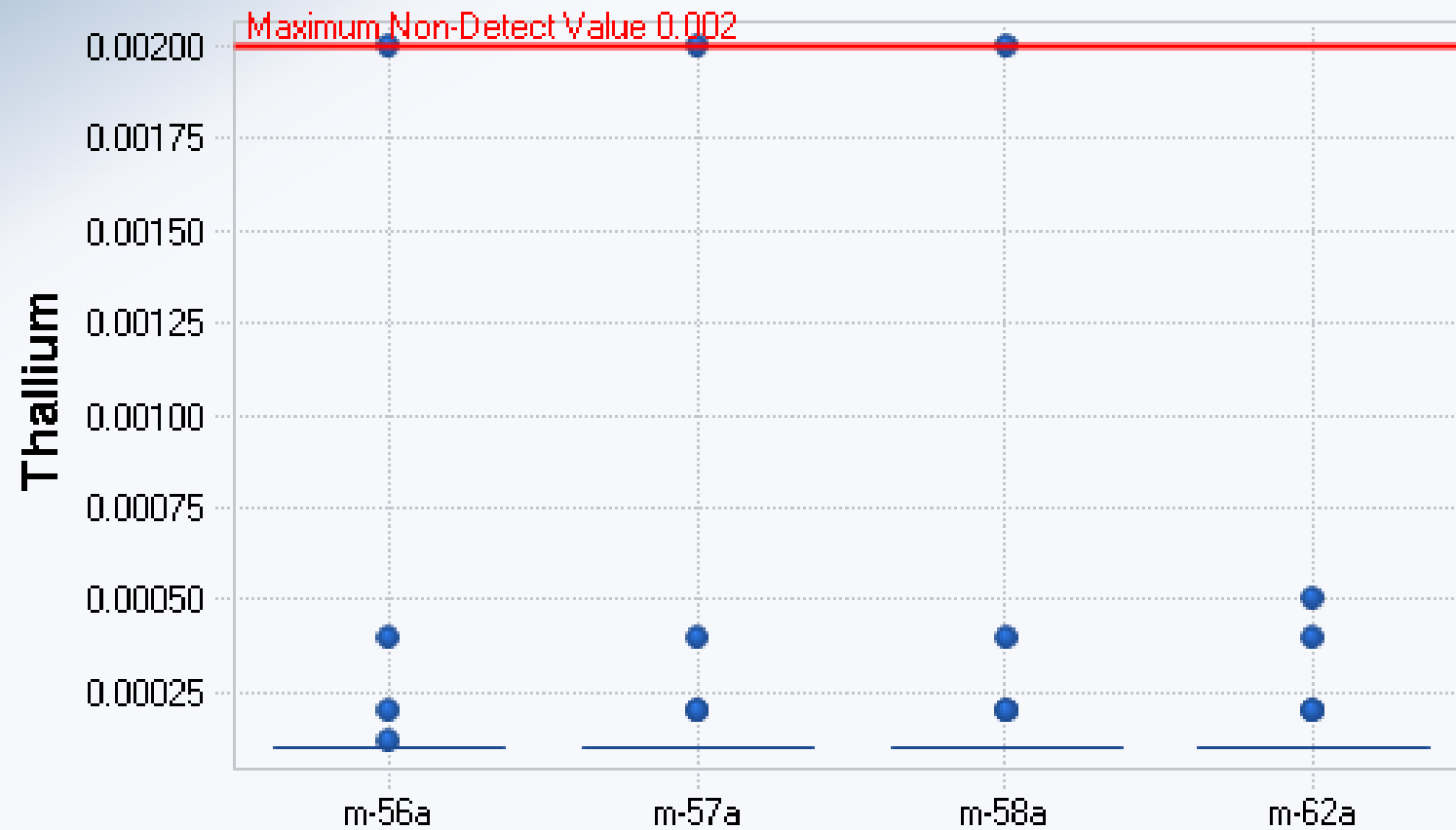


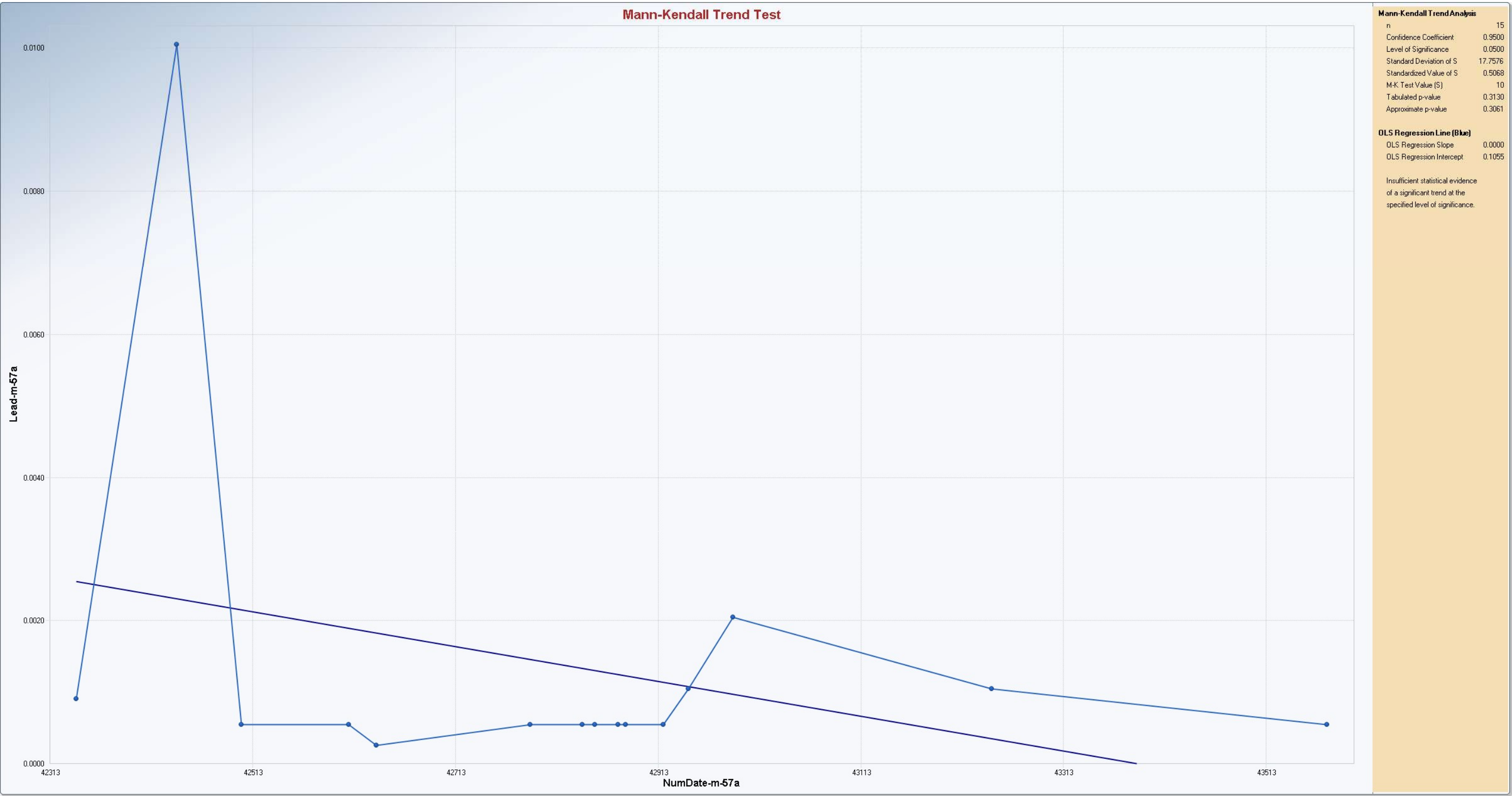


Box Plot for Selenium



Box Plot for Thallium

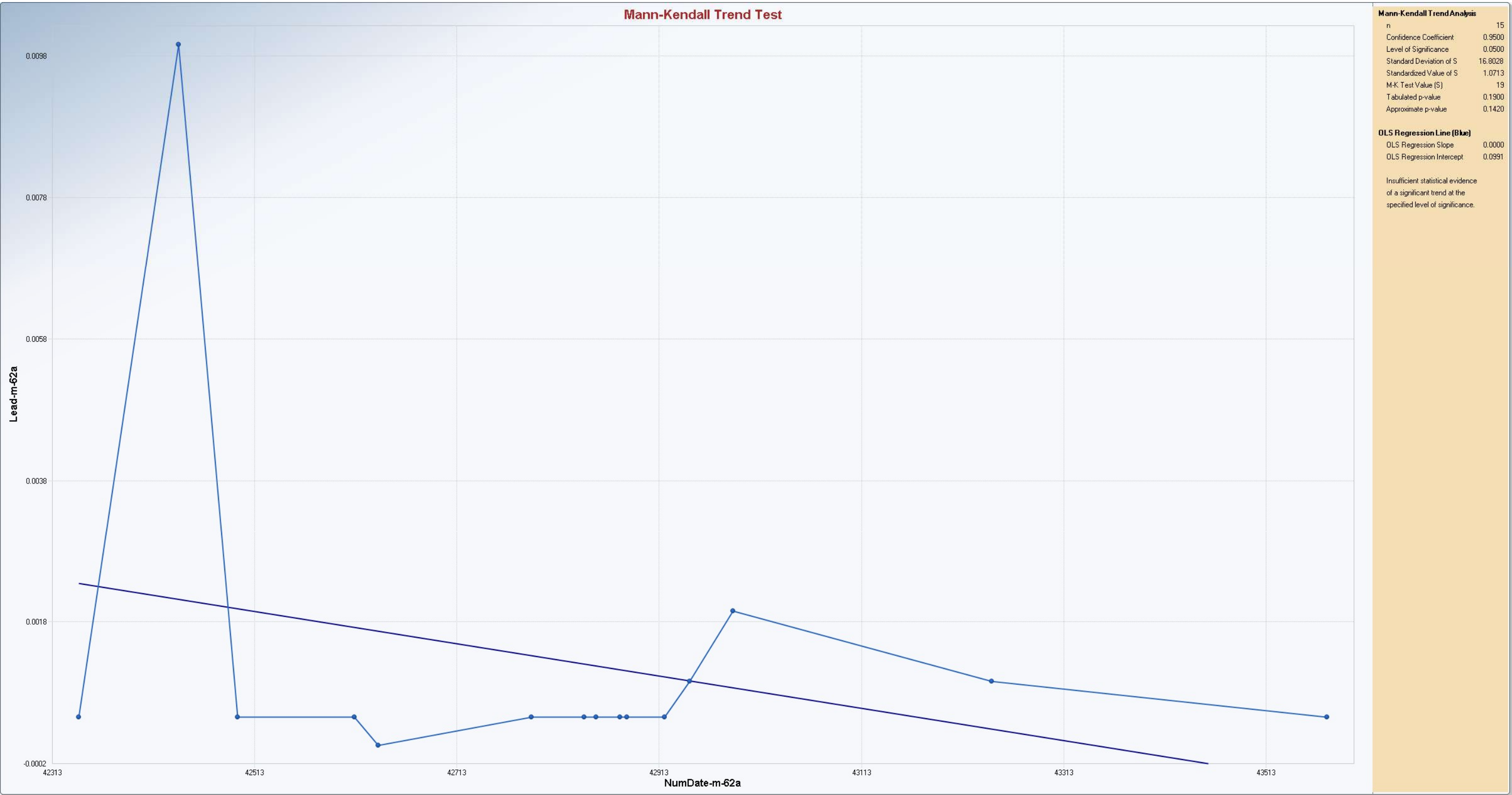


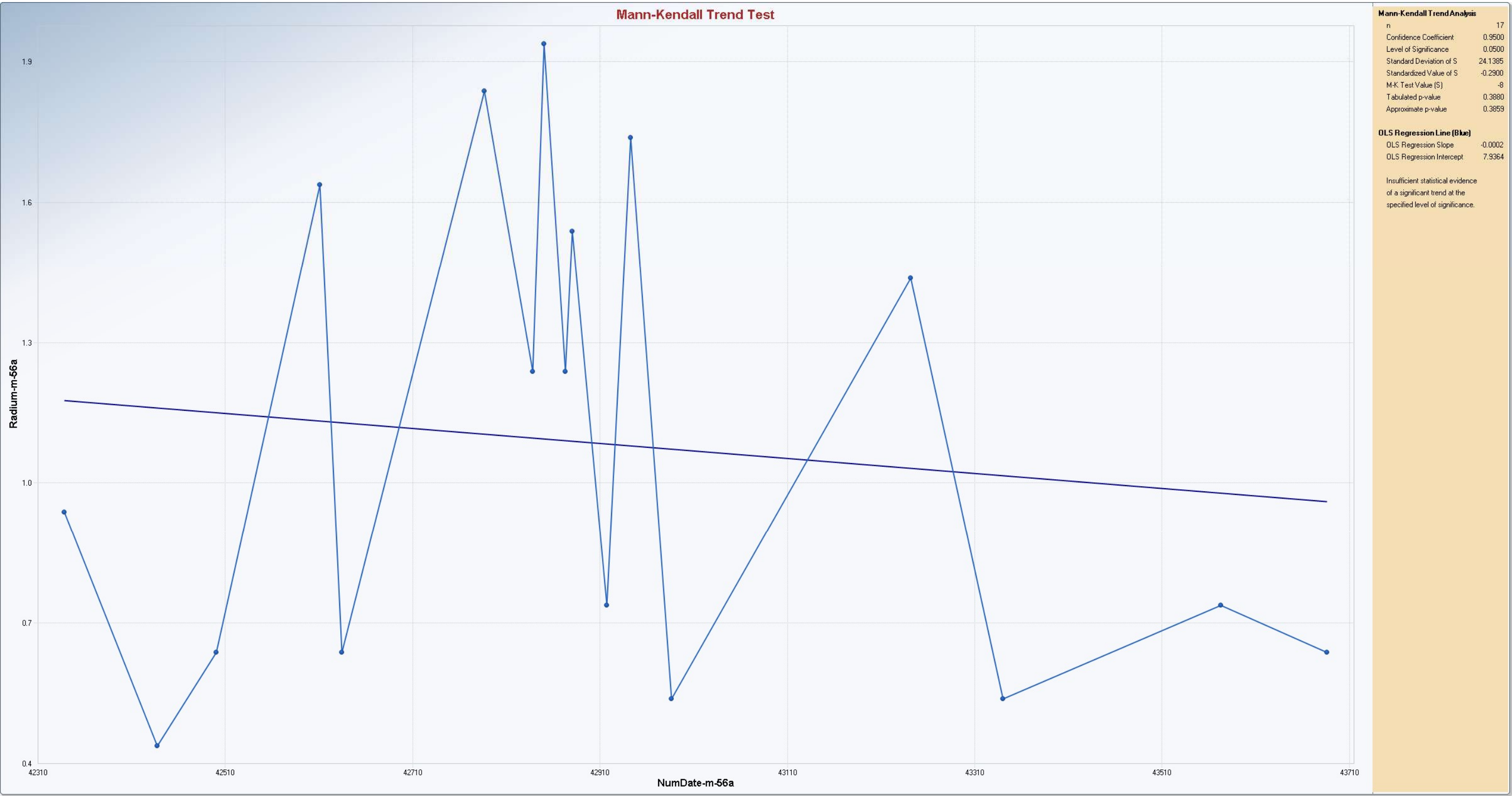


Lead-m-57a

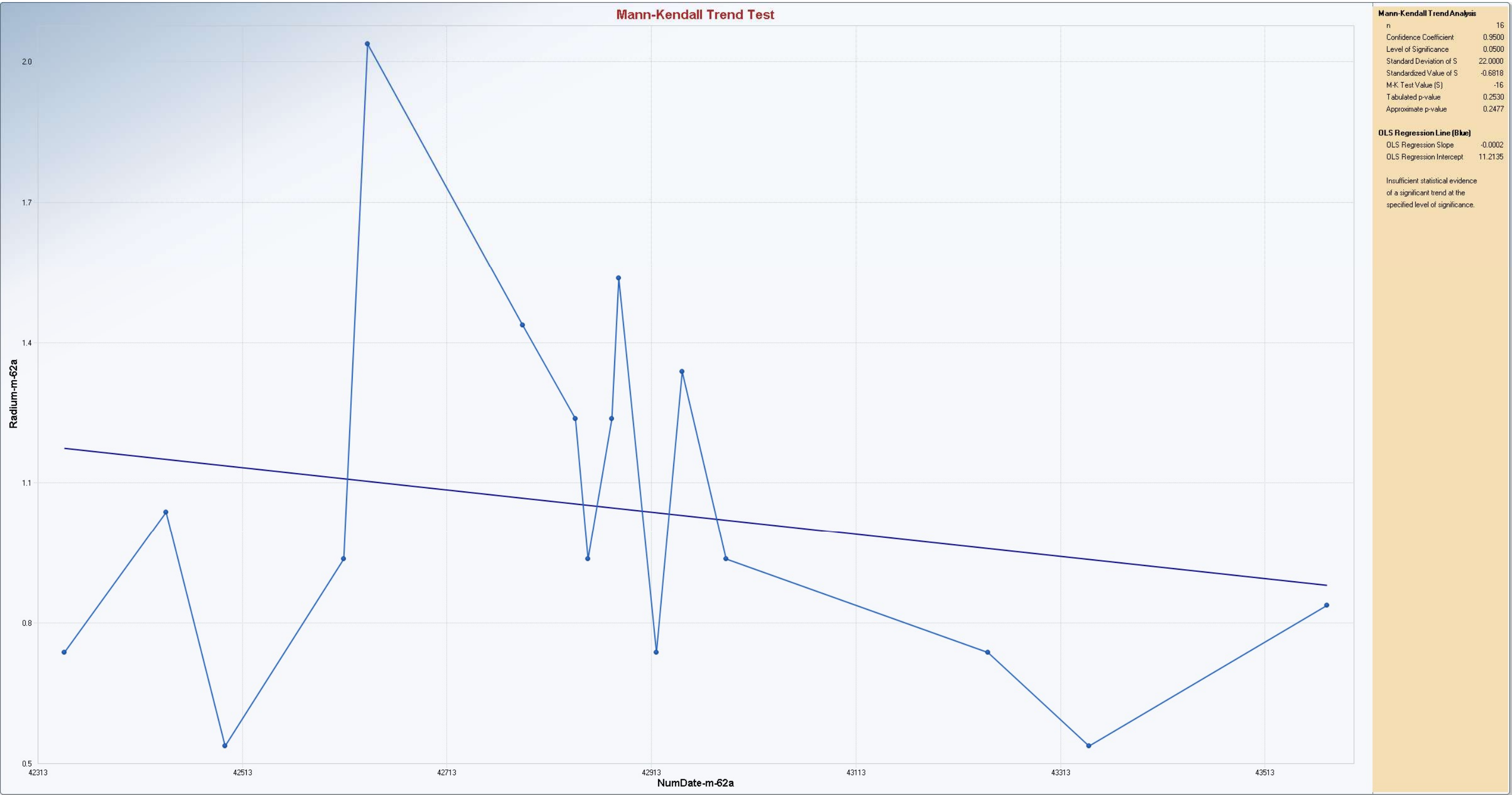
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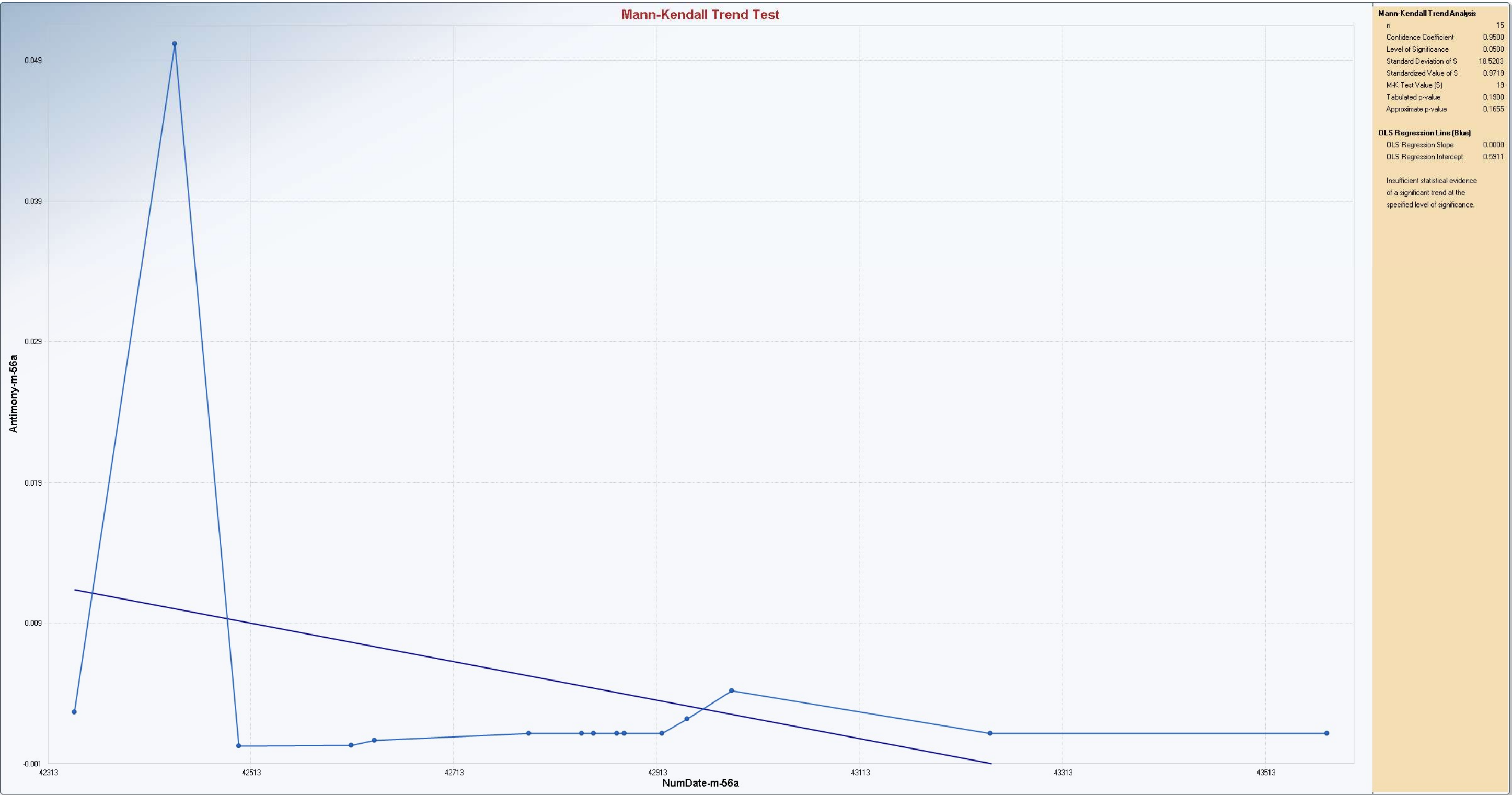






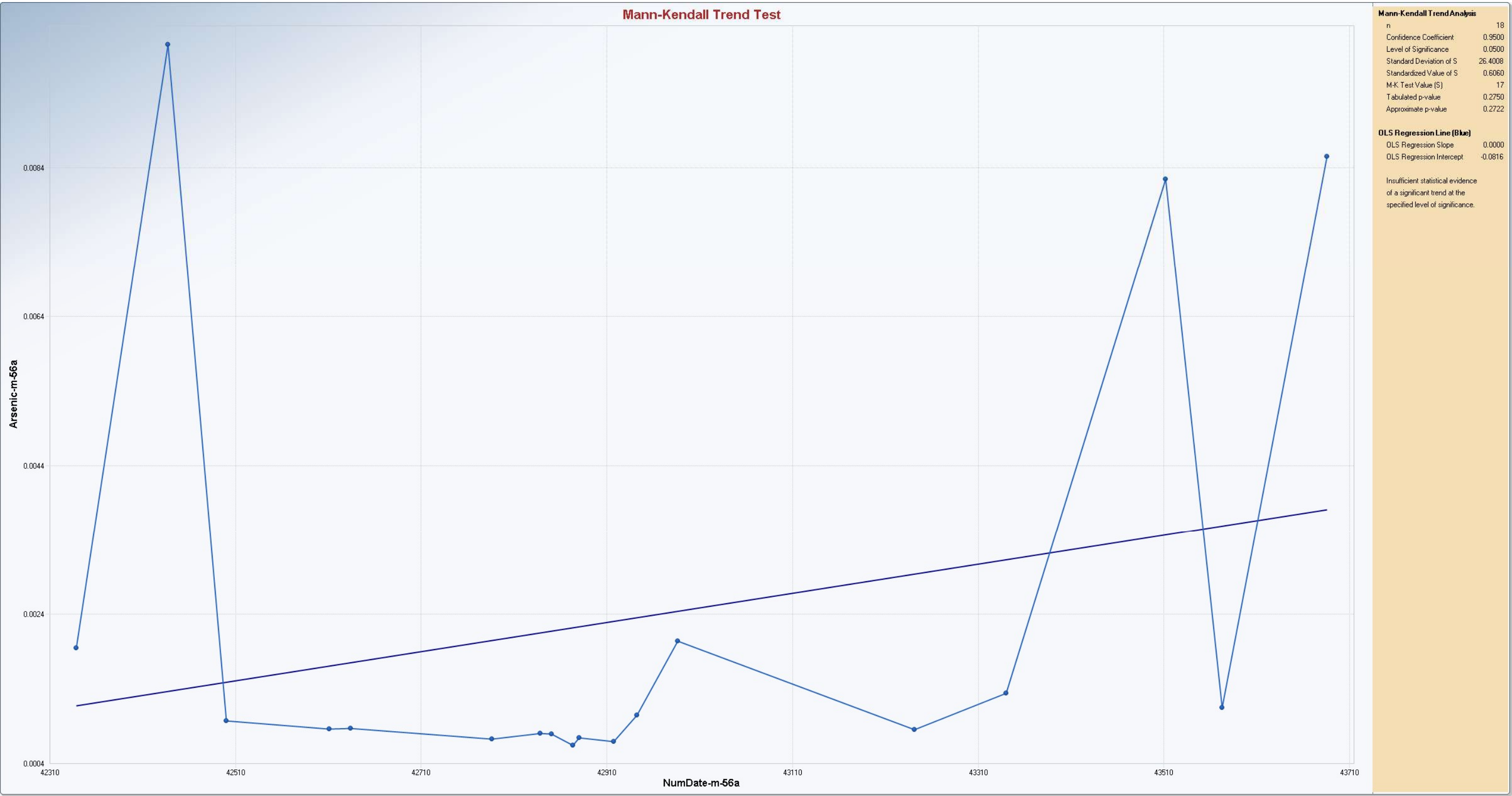


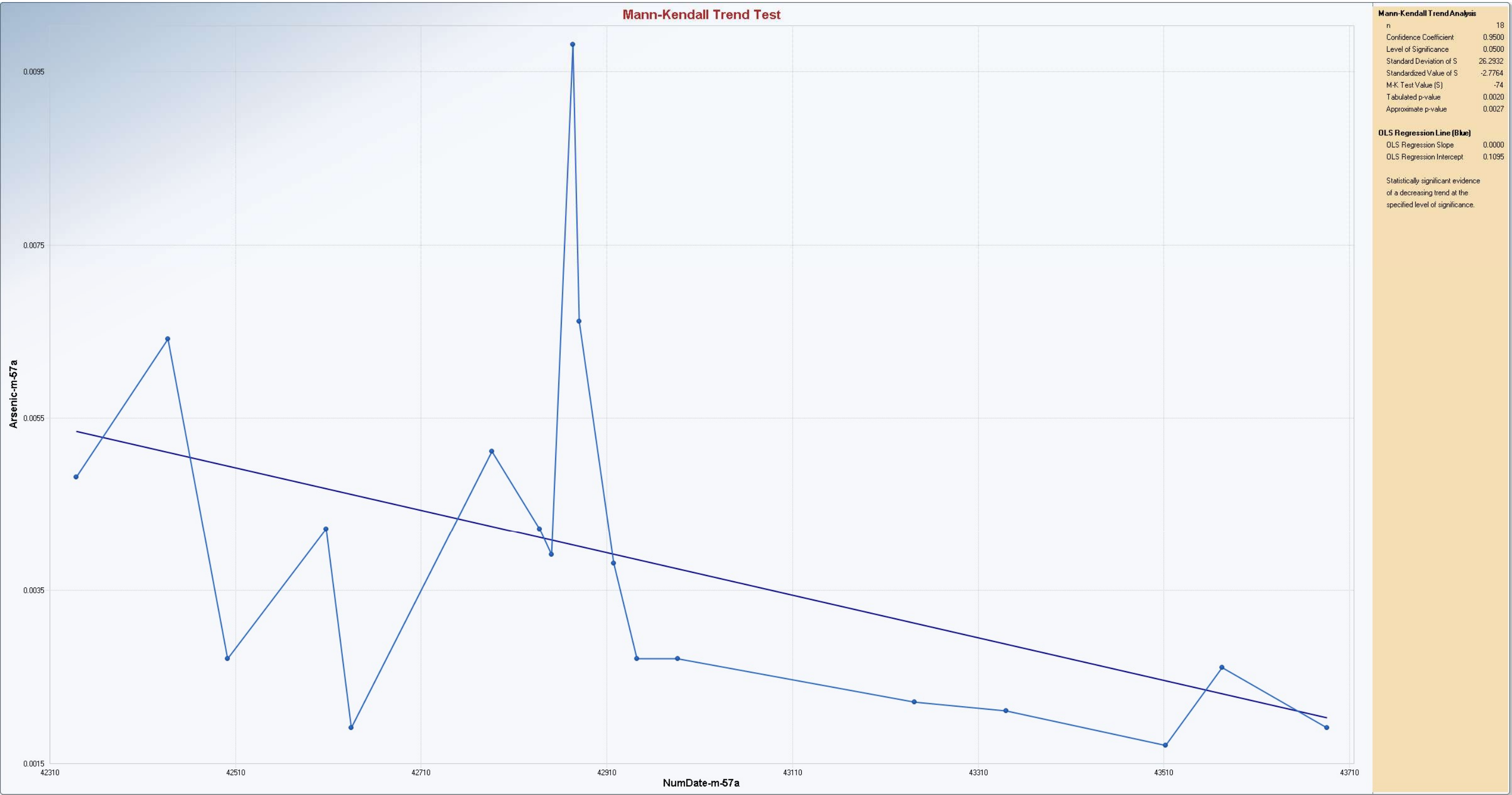




Antimony-m-56a

NumDate-m-56a



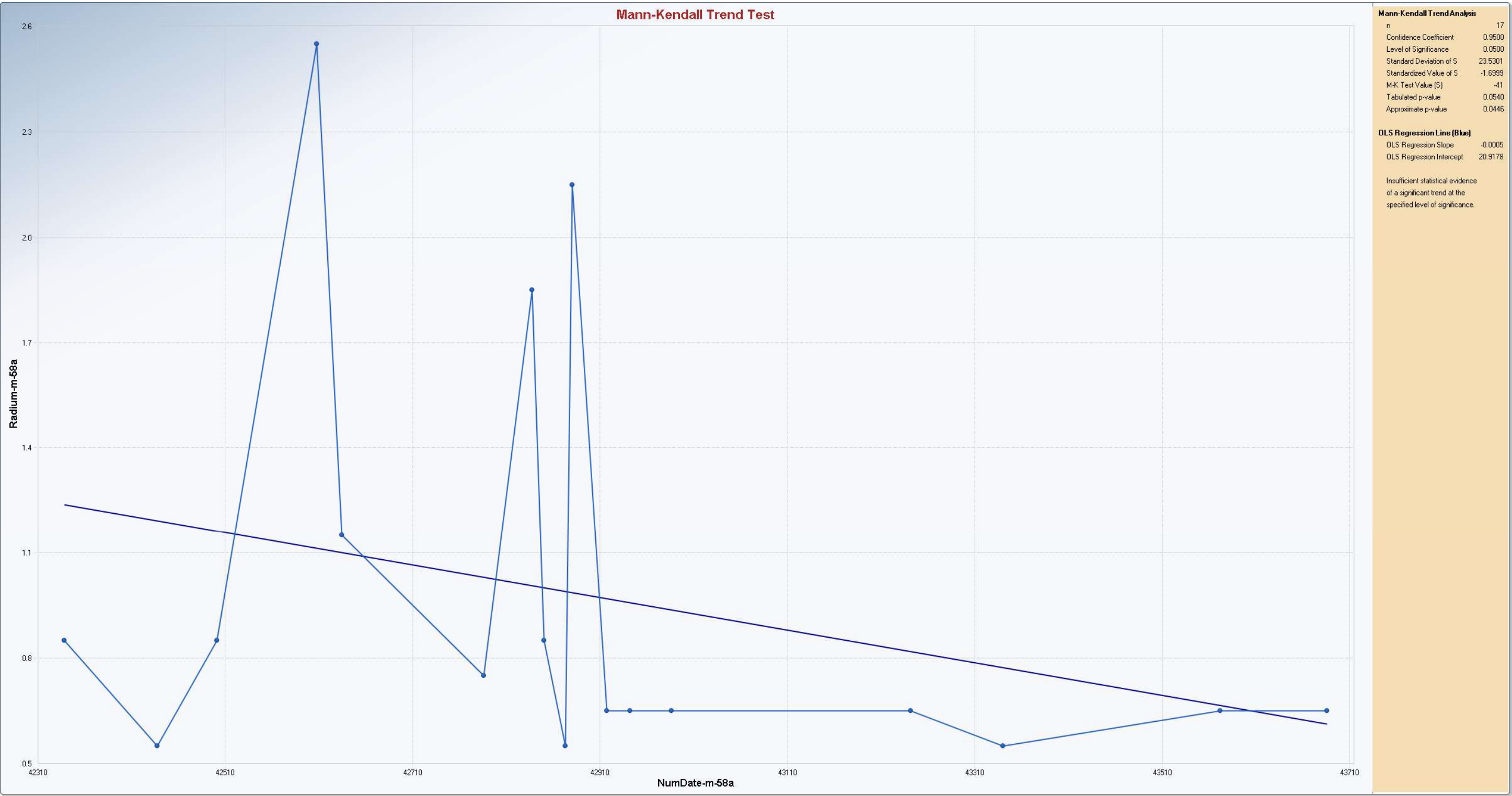




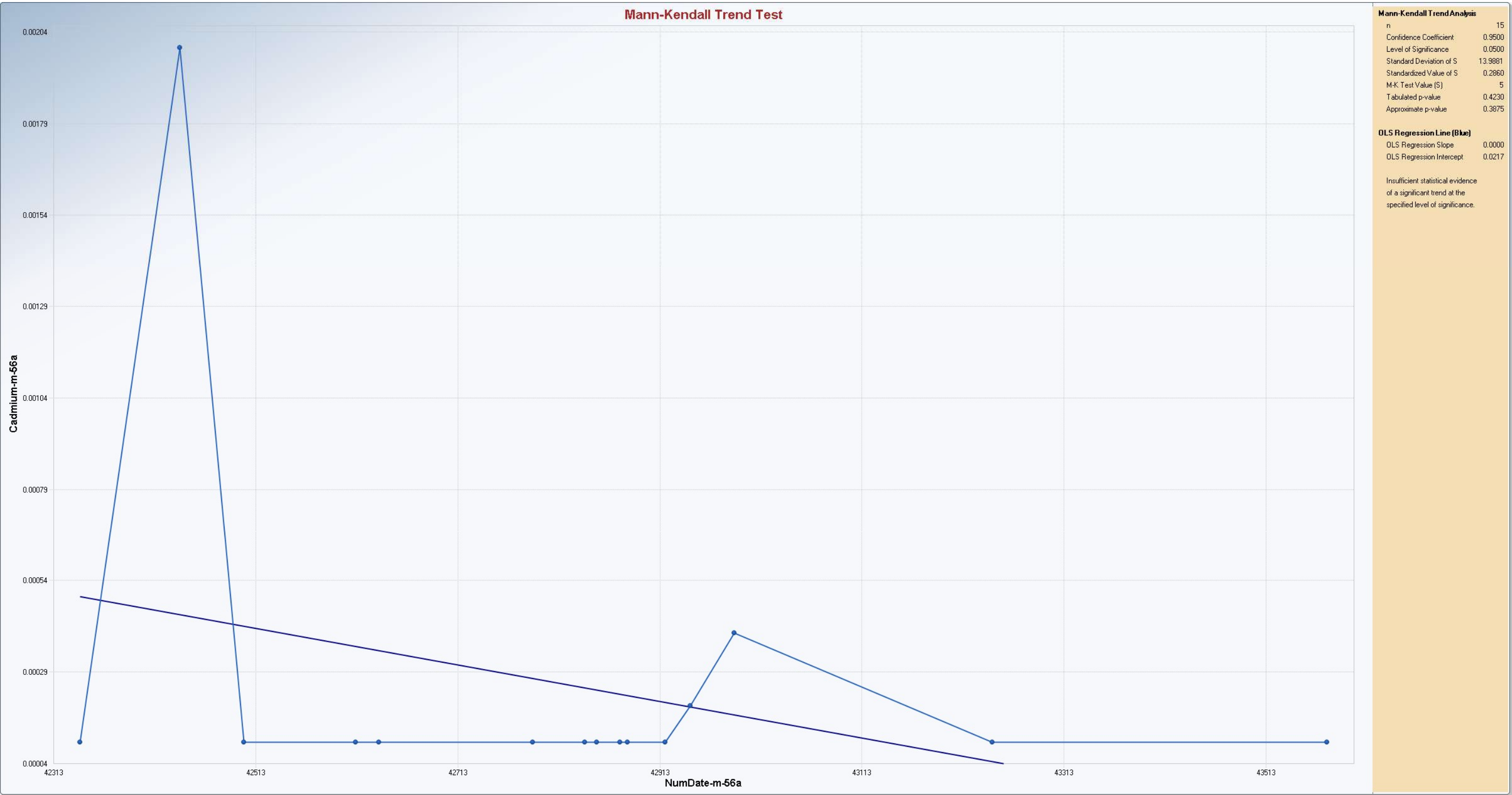






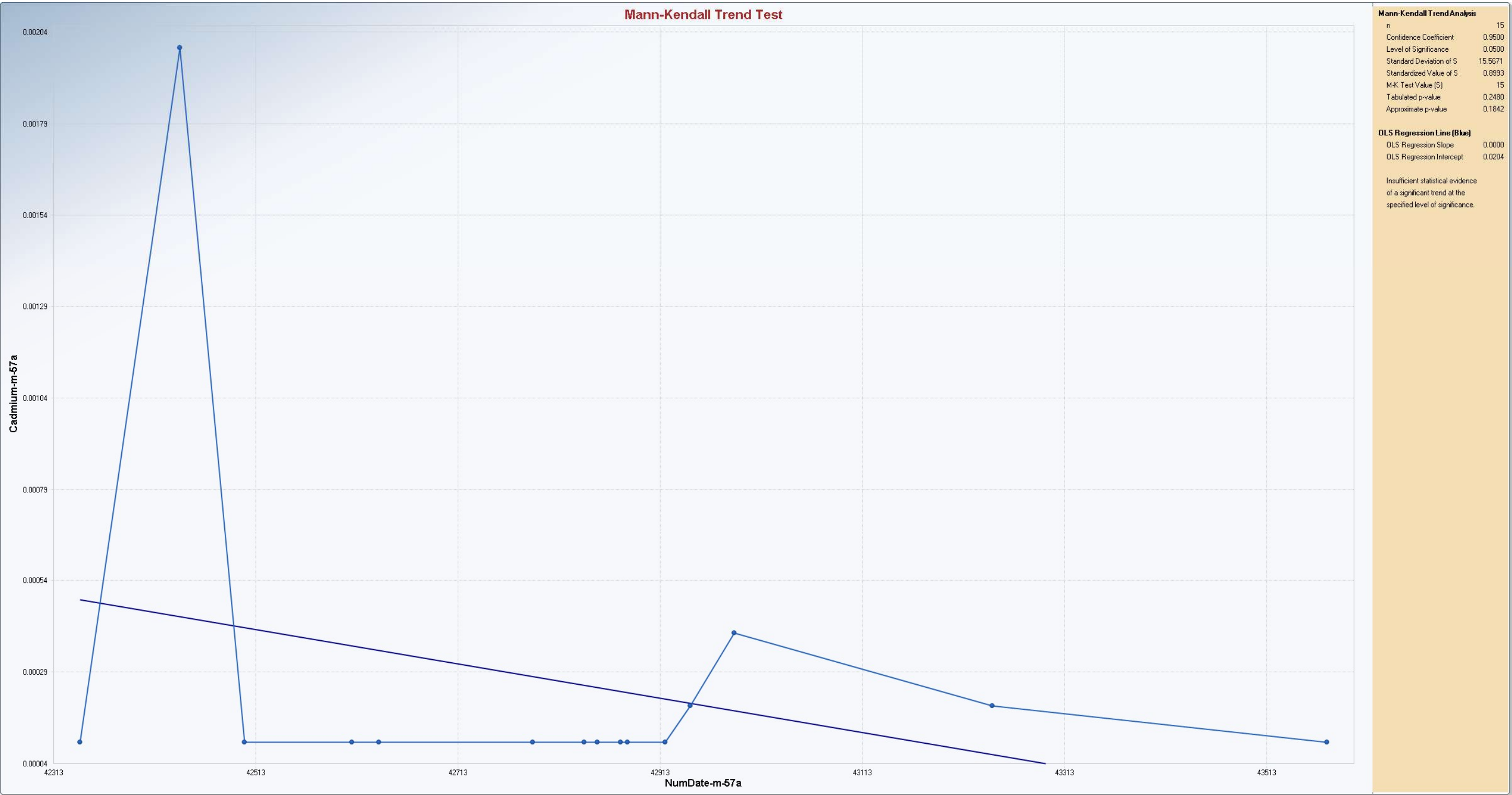


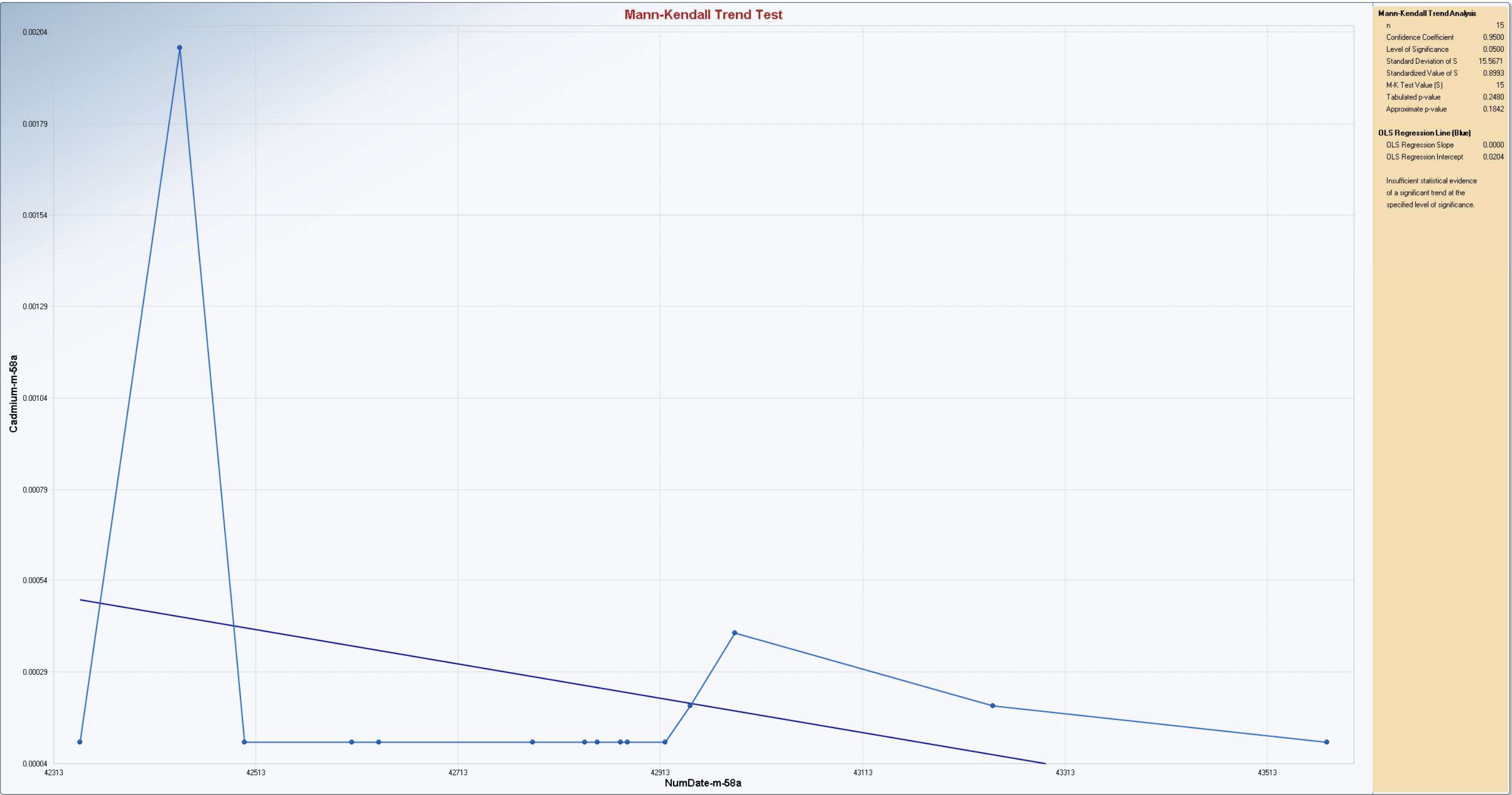


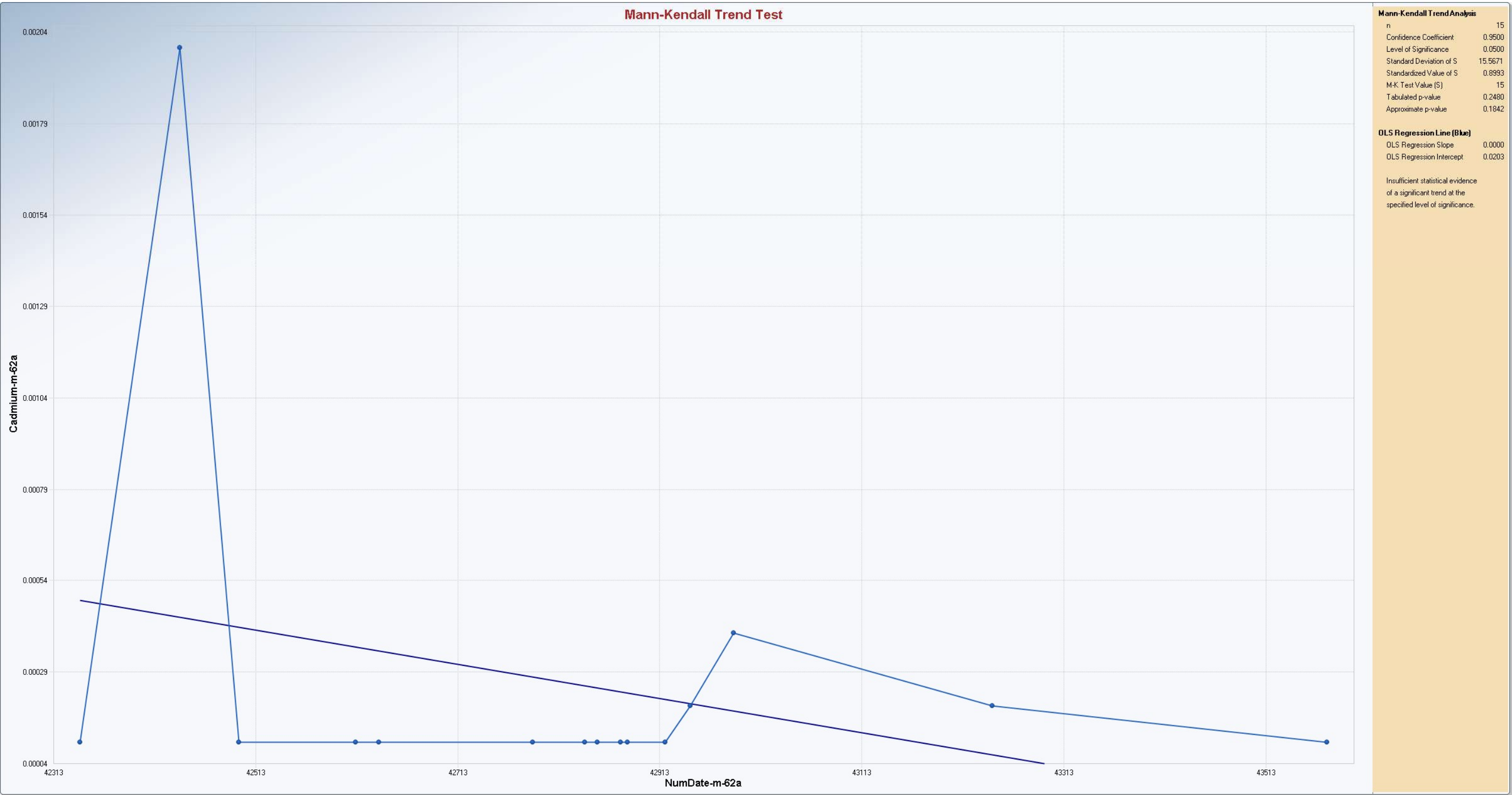


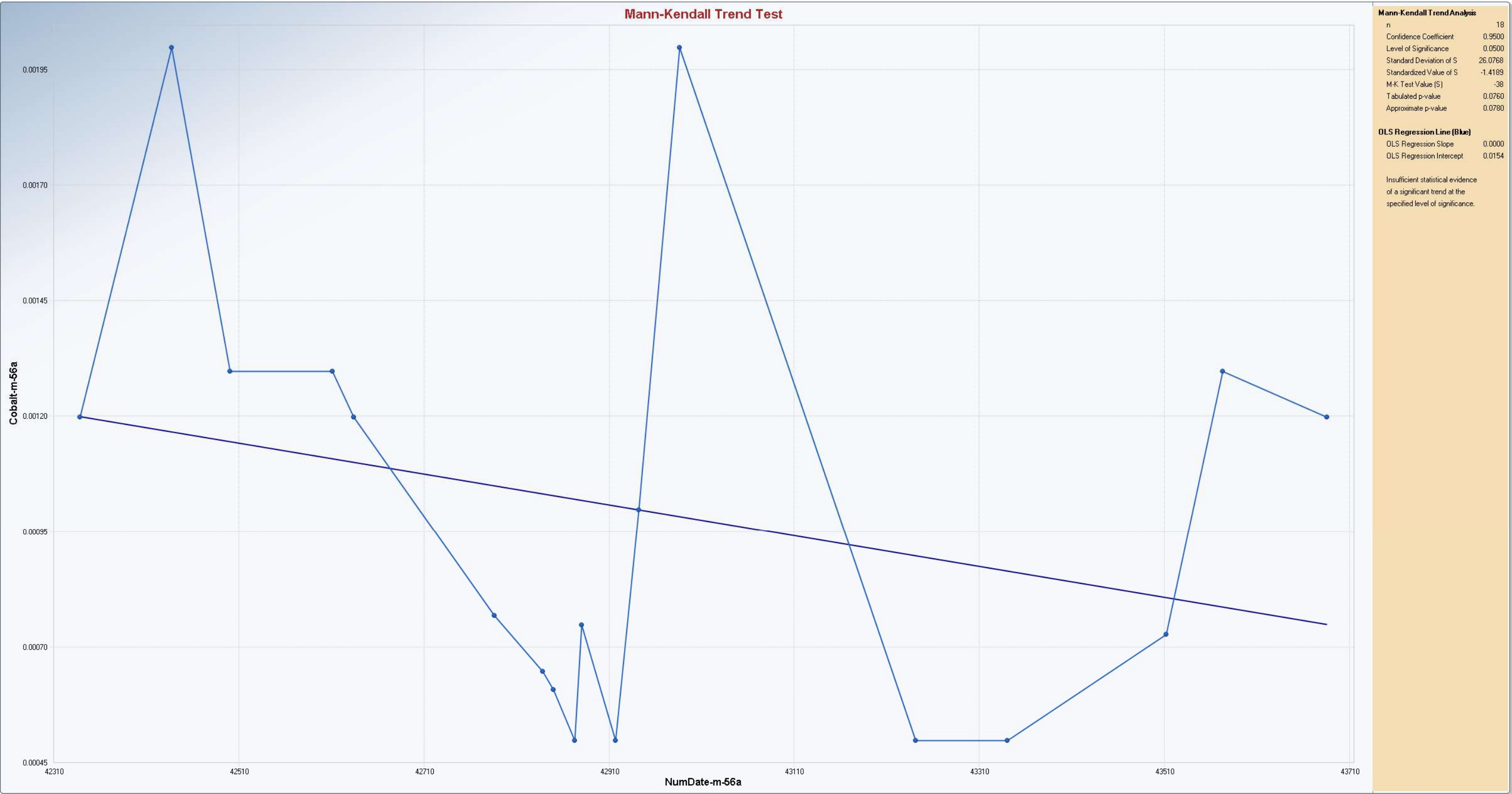
Cadmium-m-56a

NumDate-m-56a

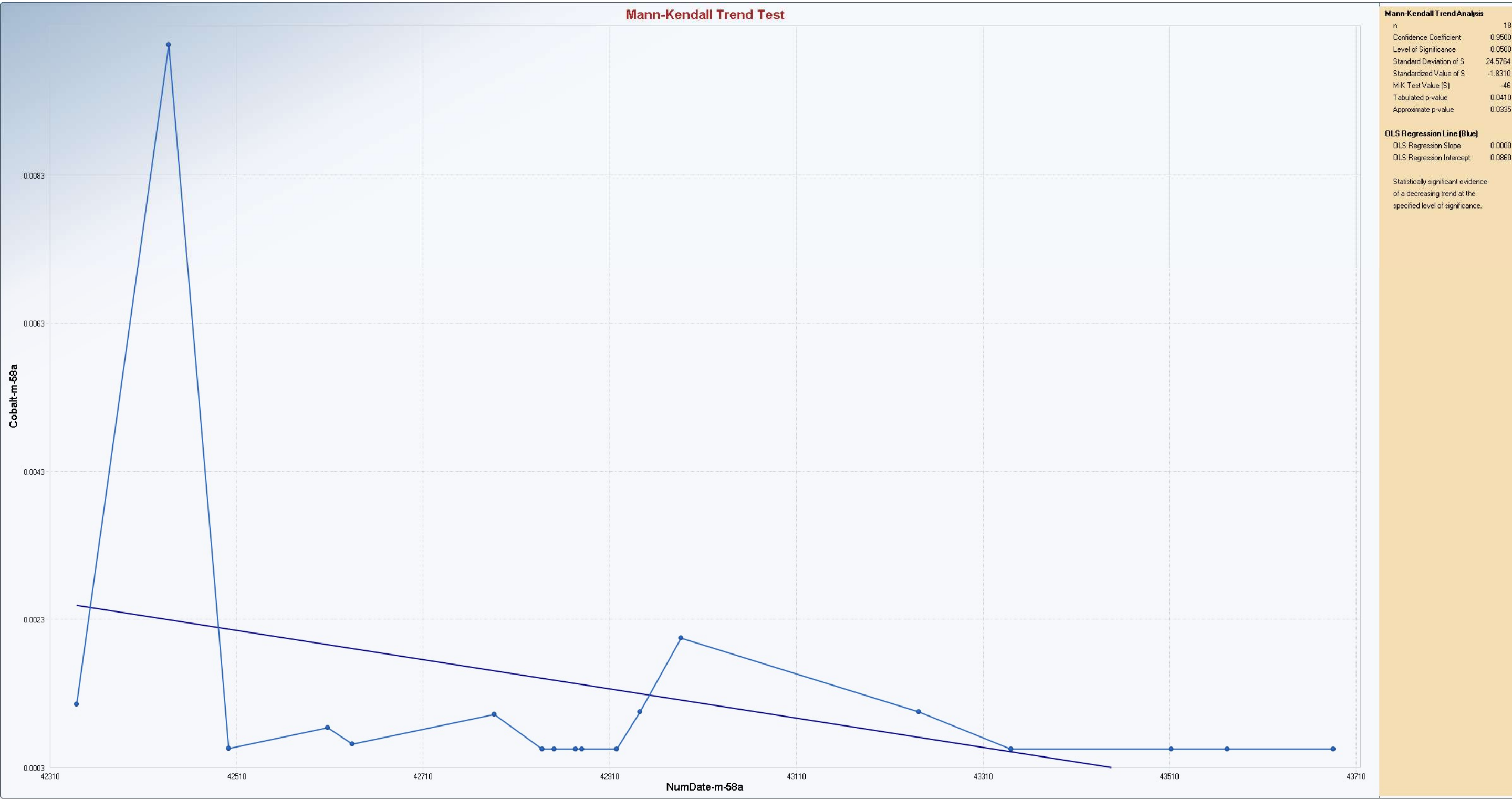


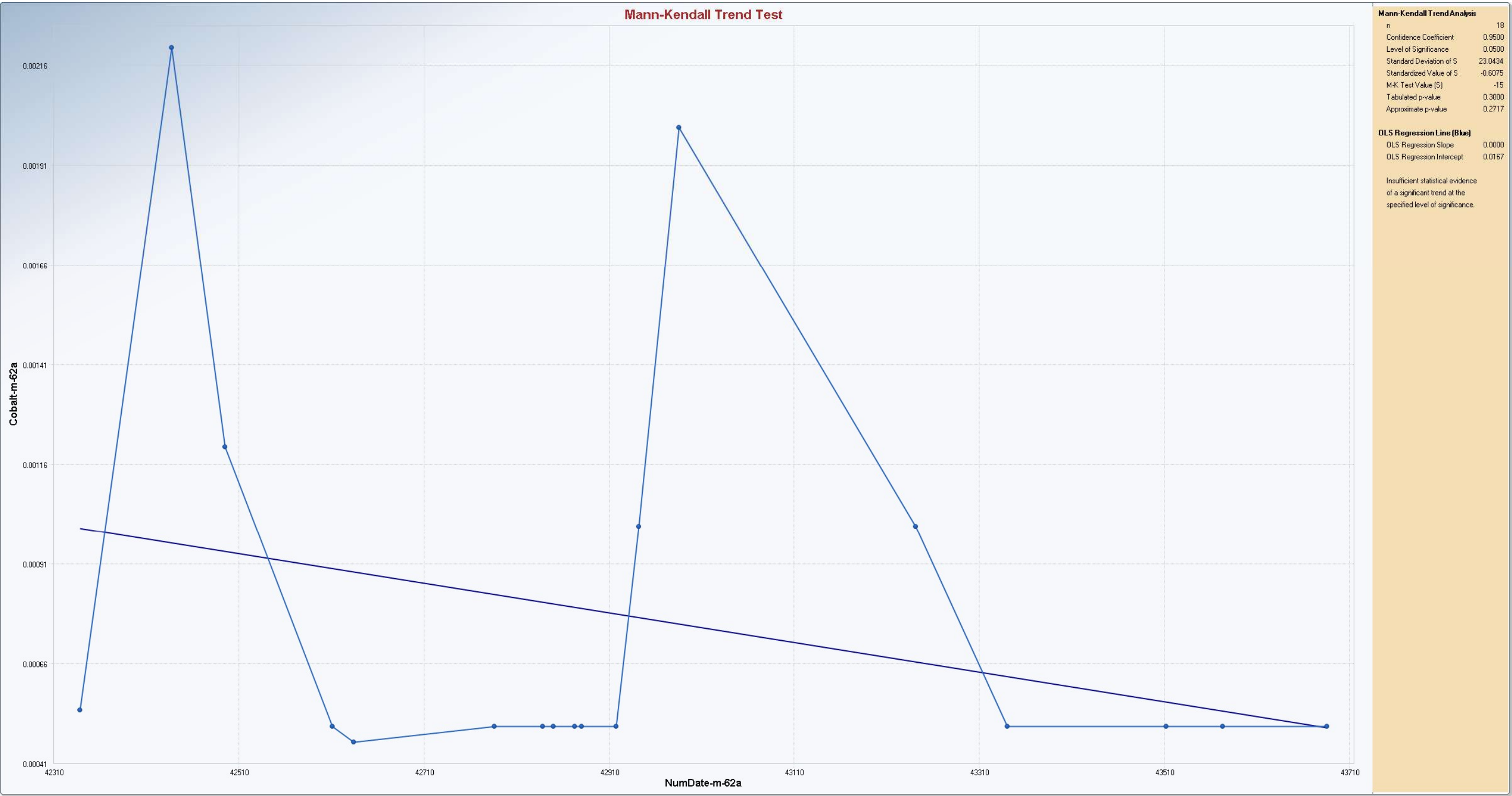


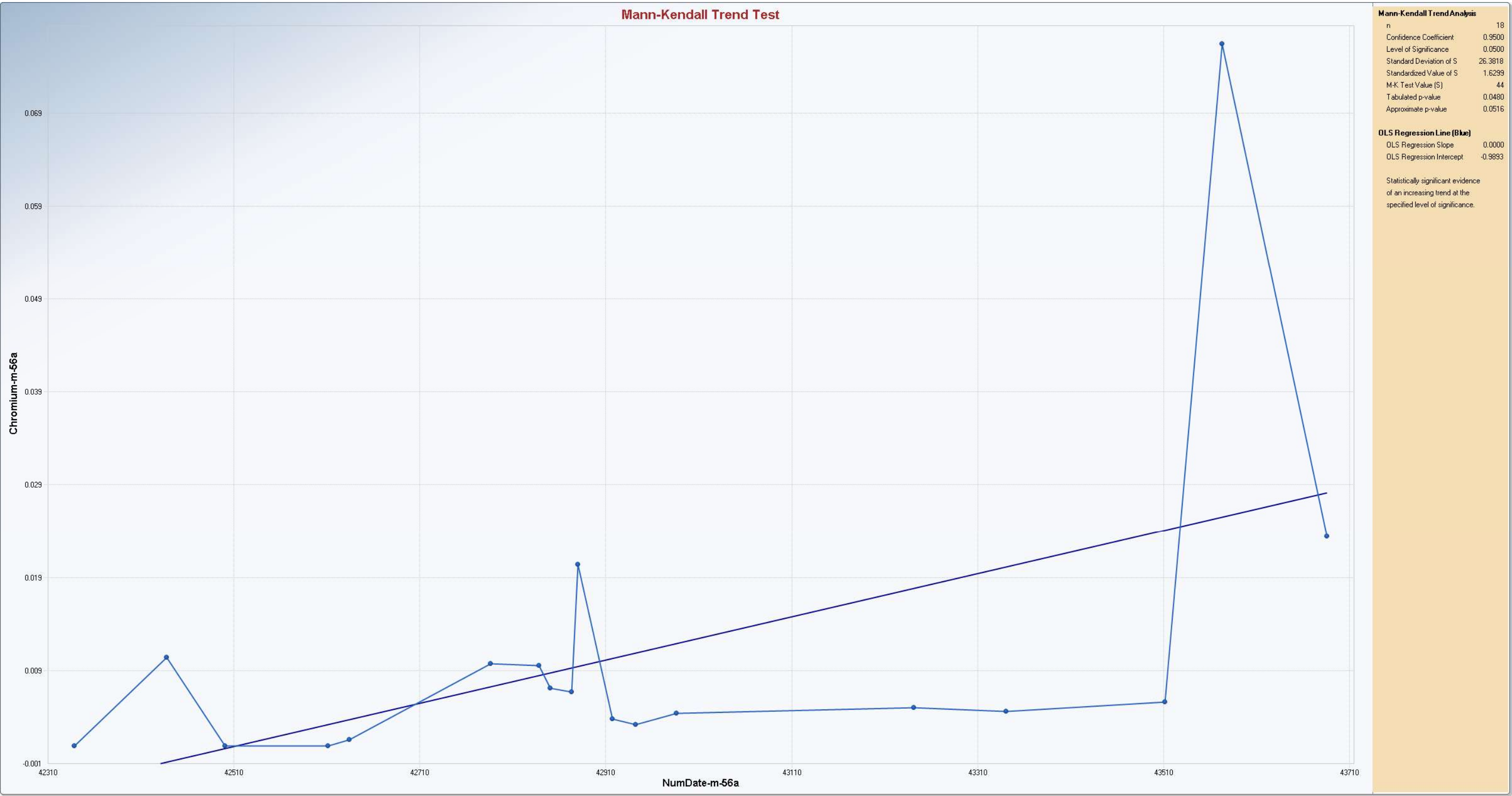




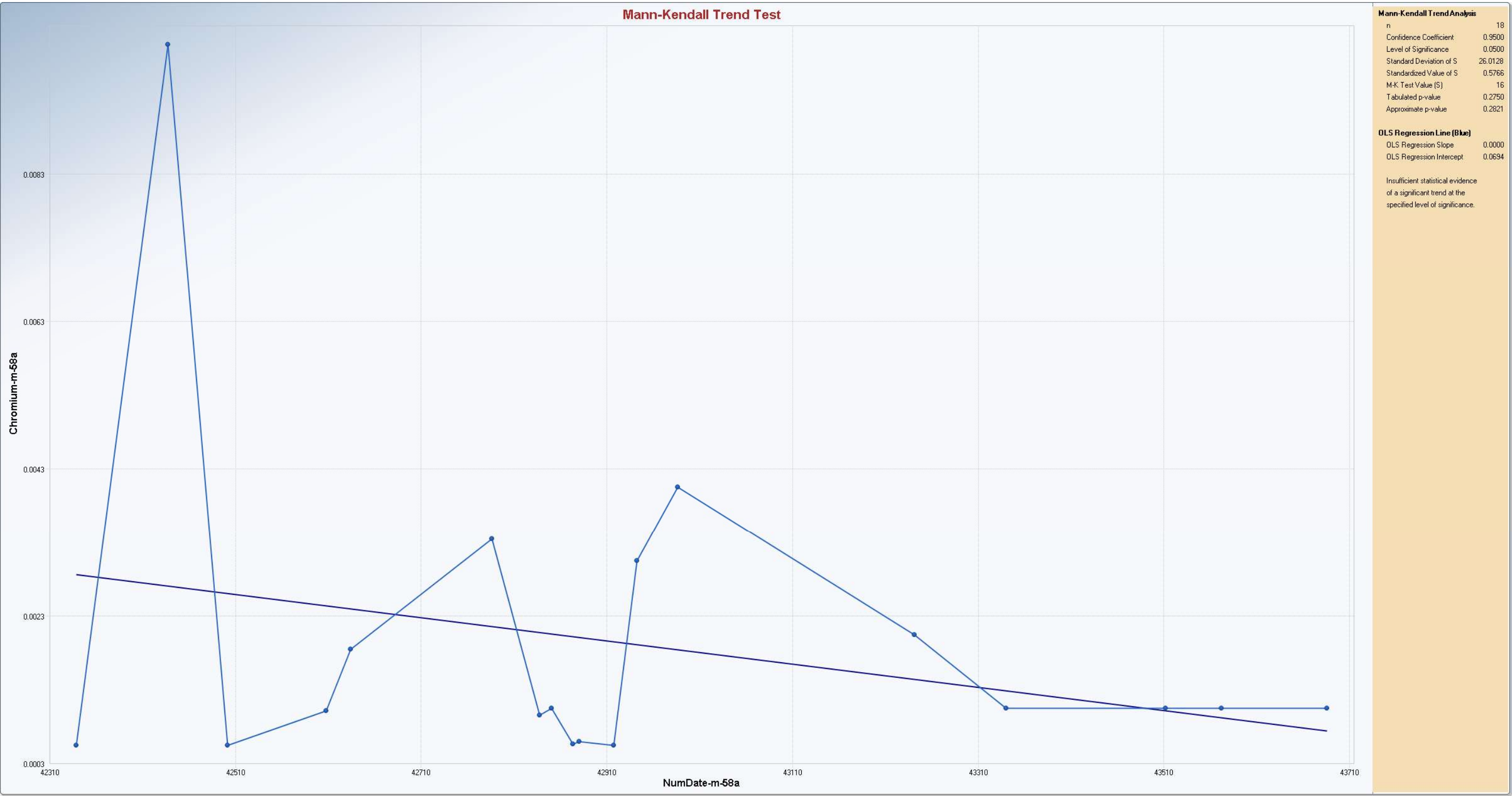




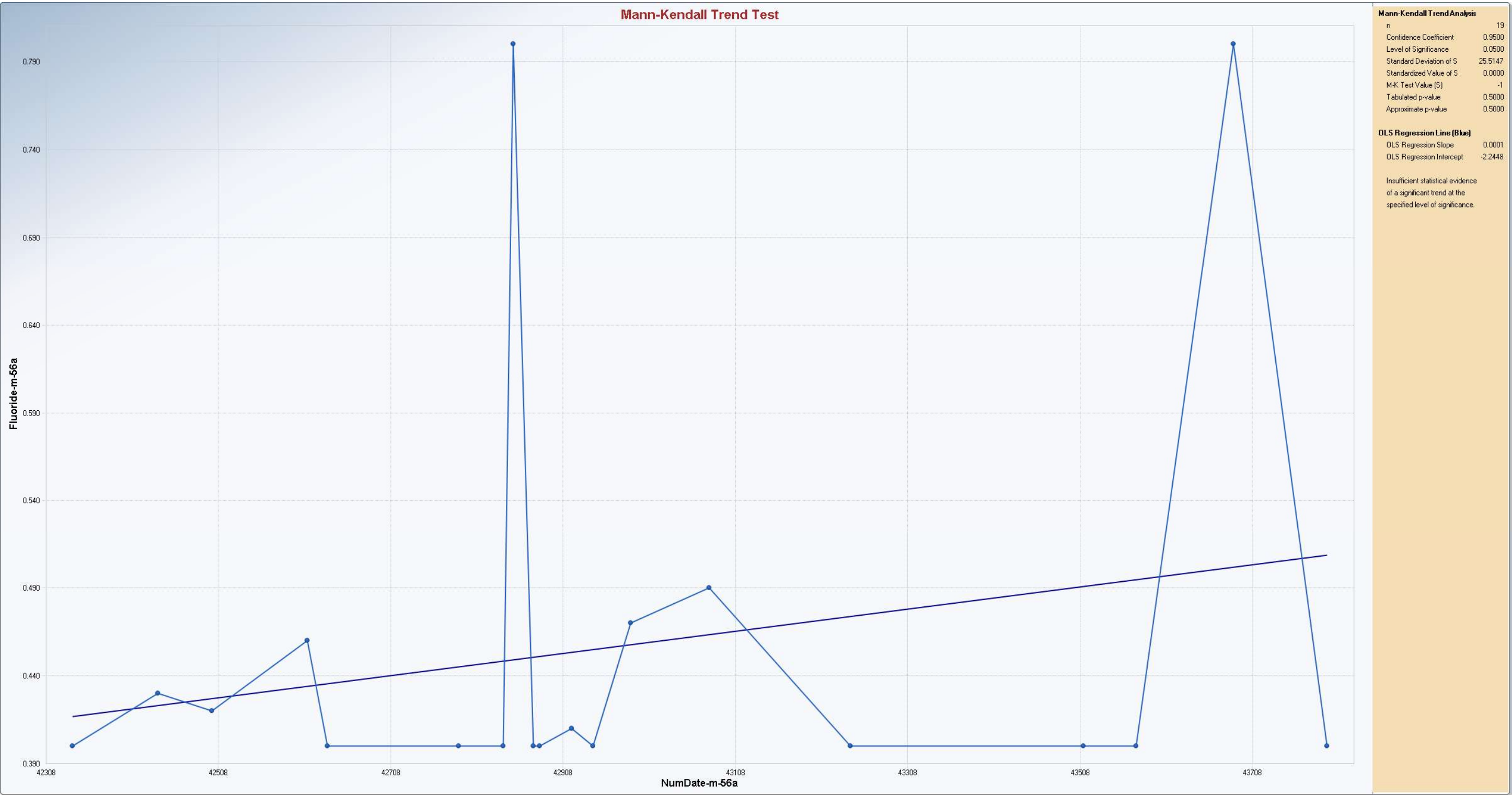


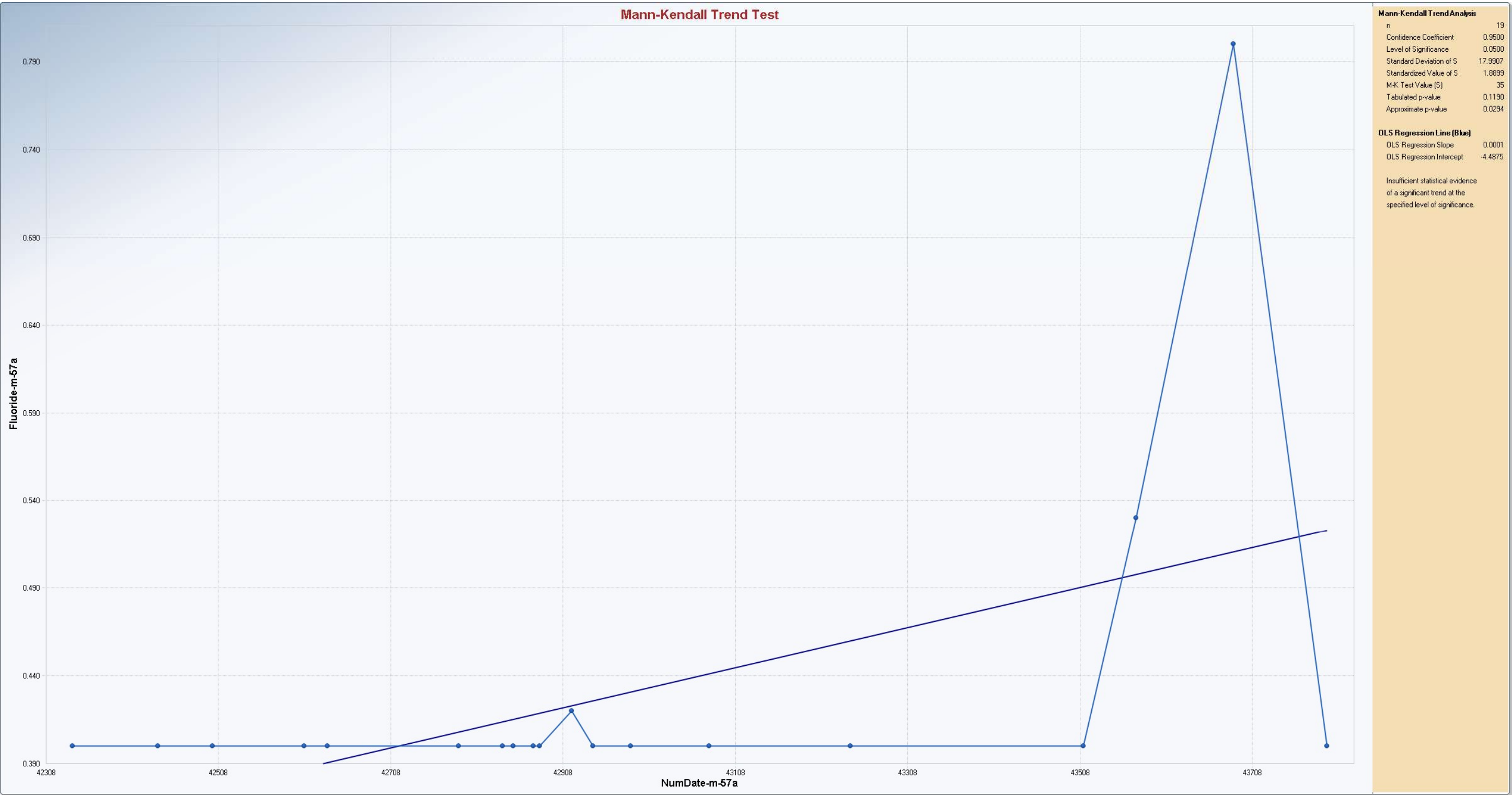


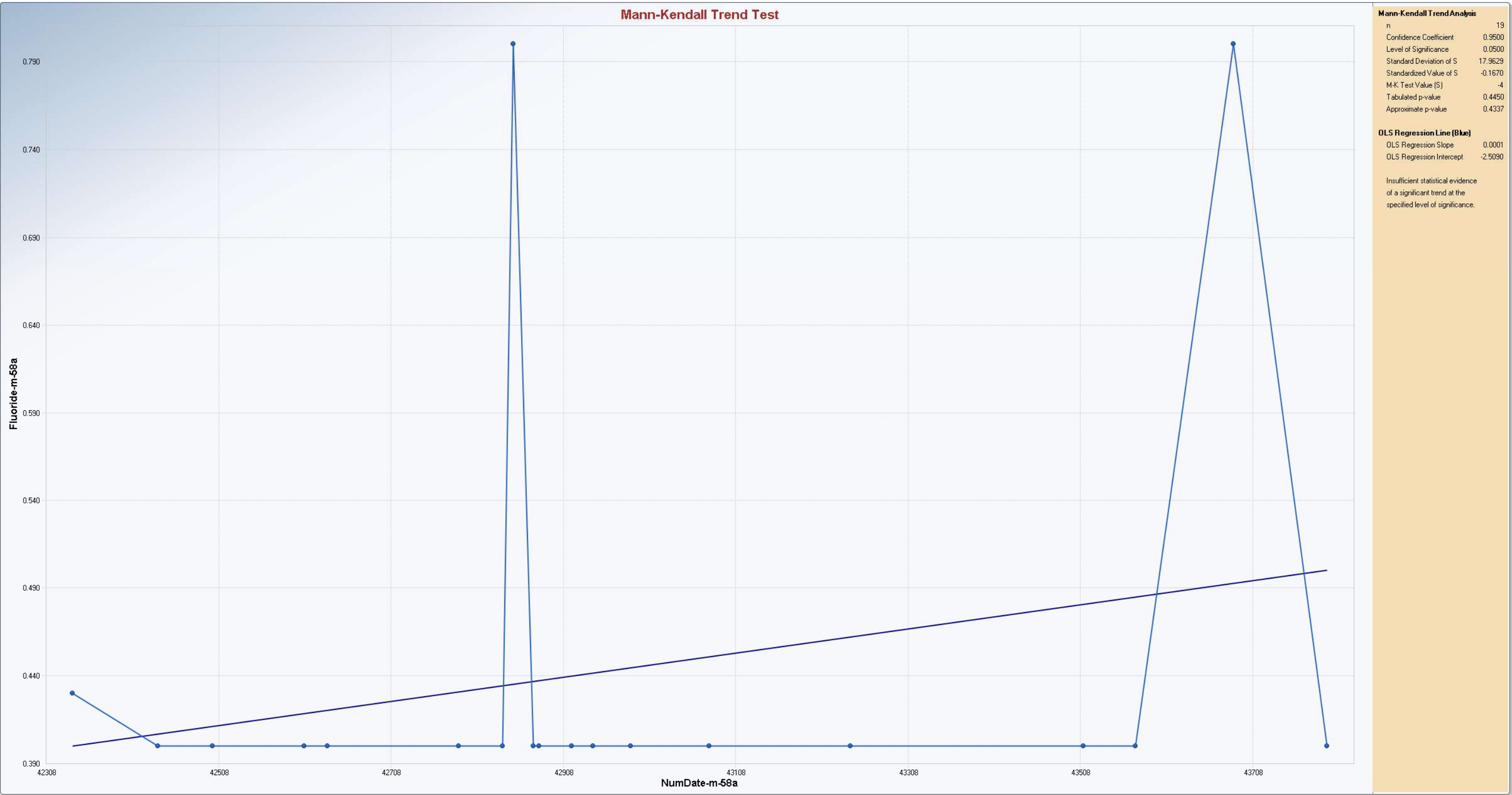








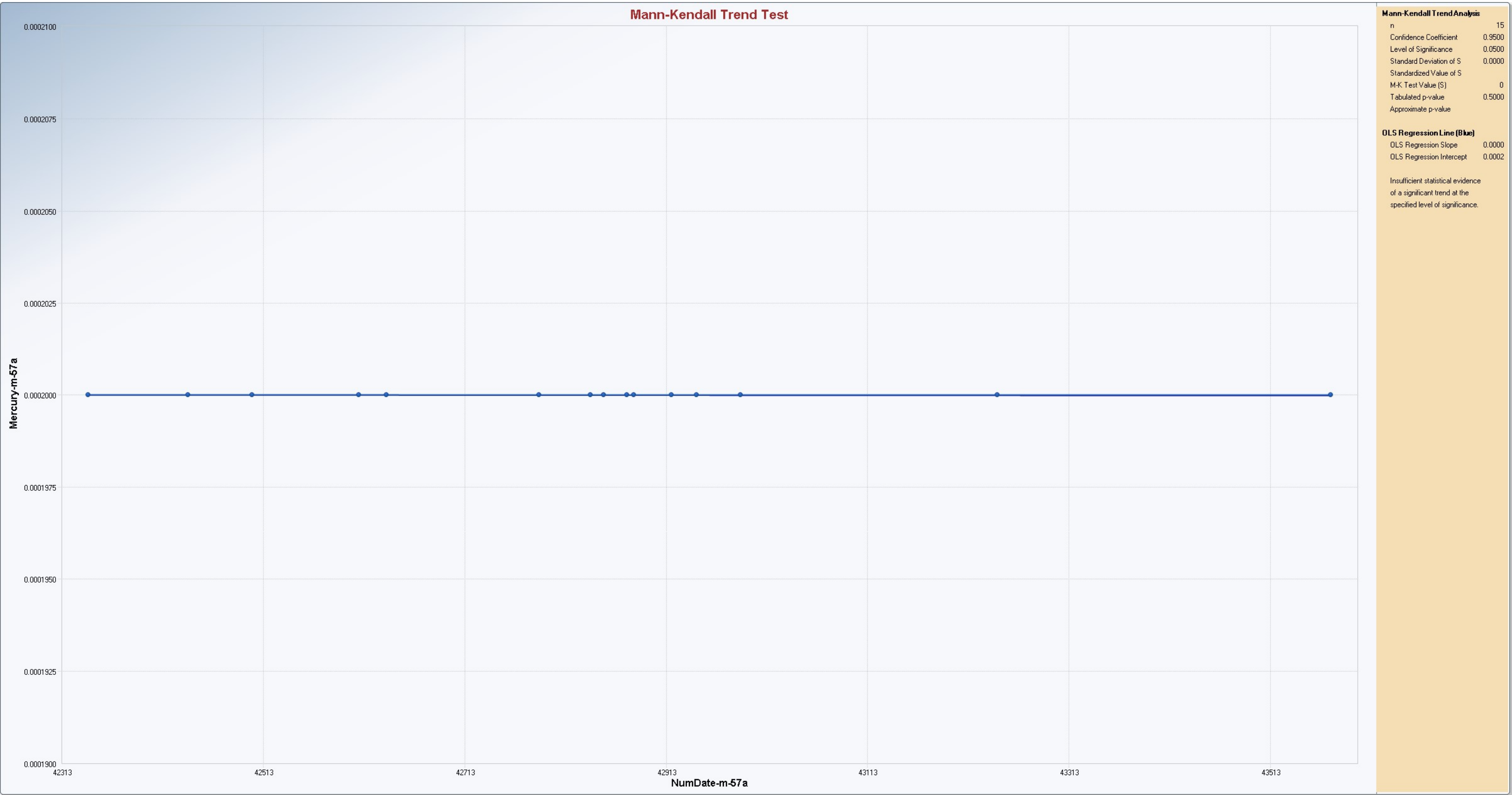


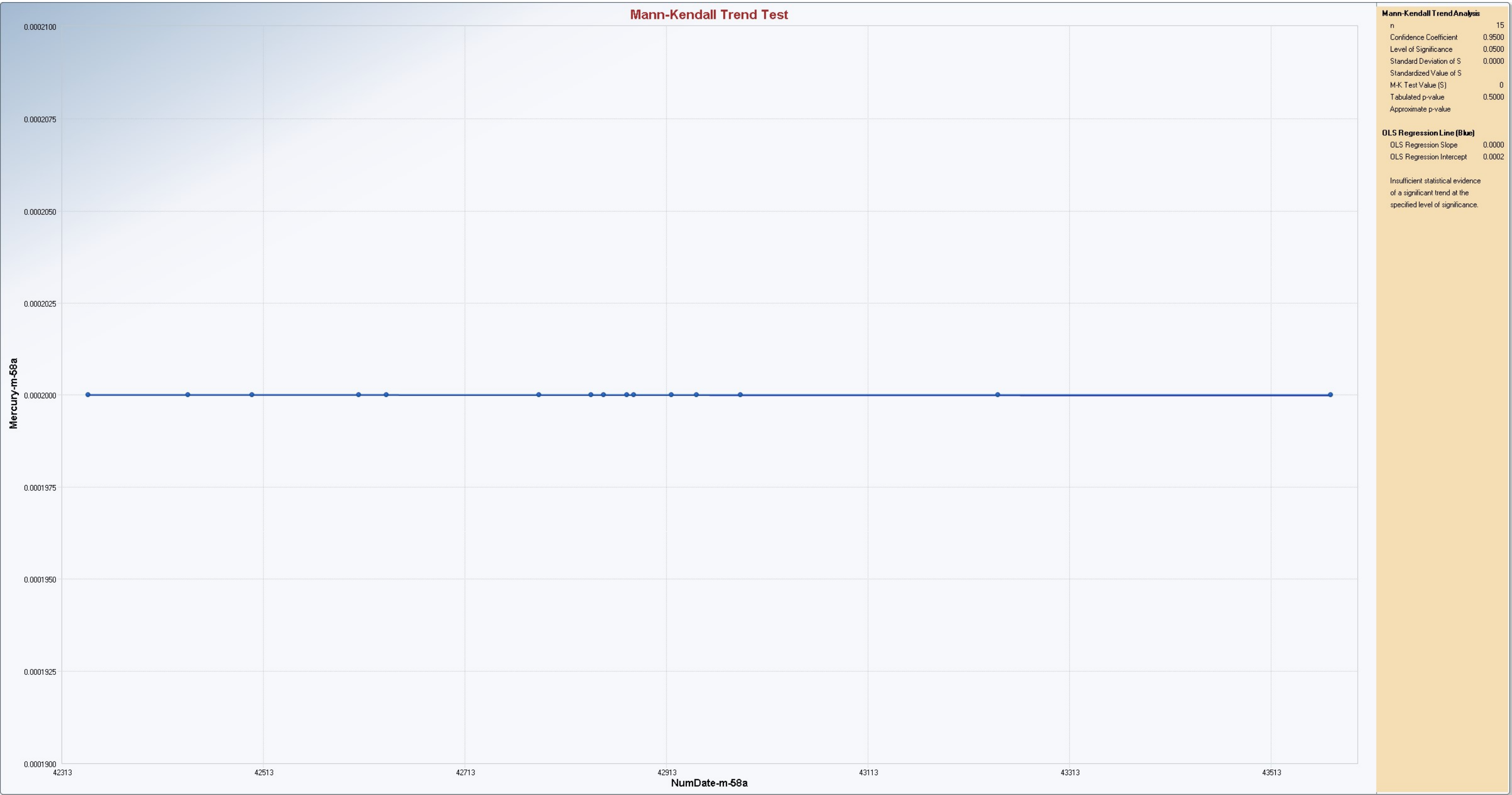
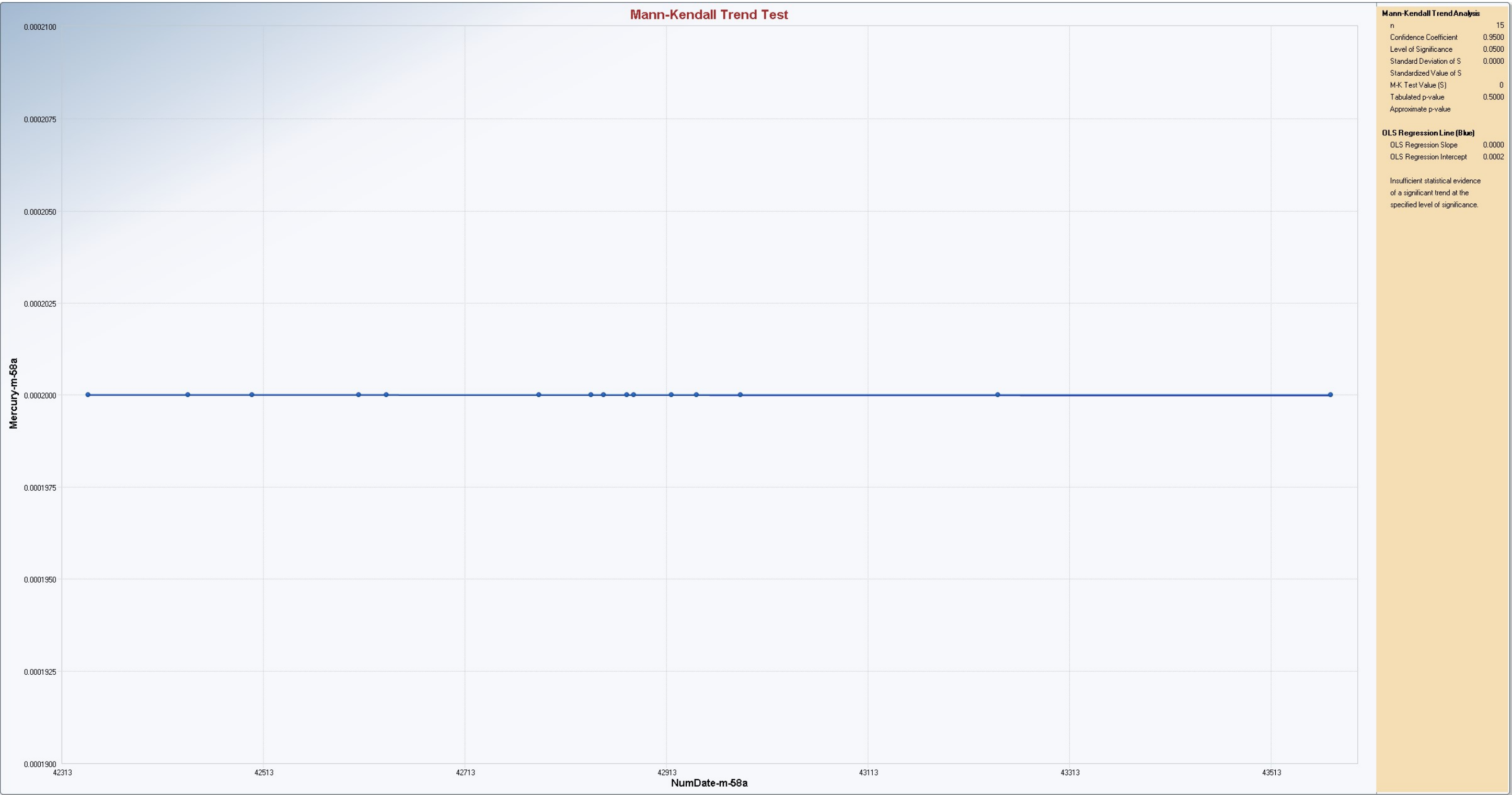


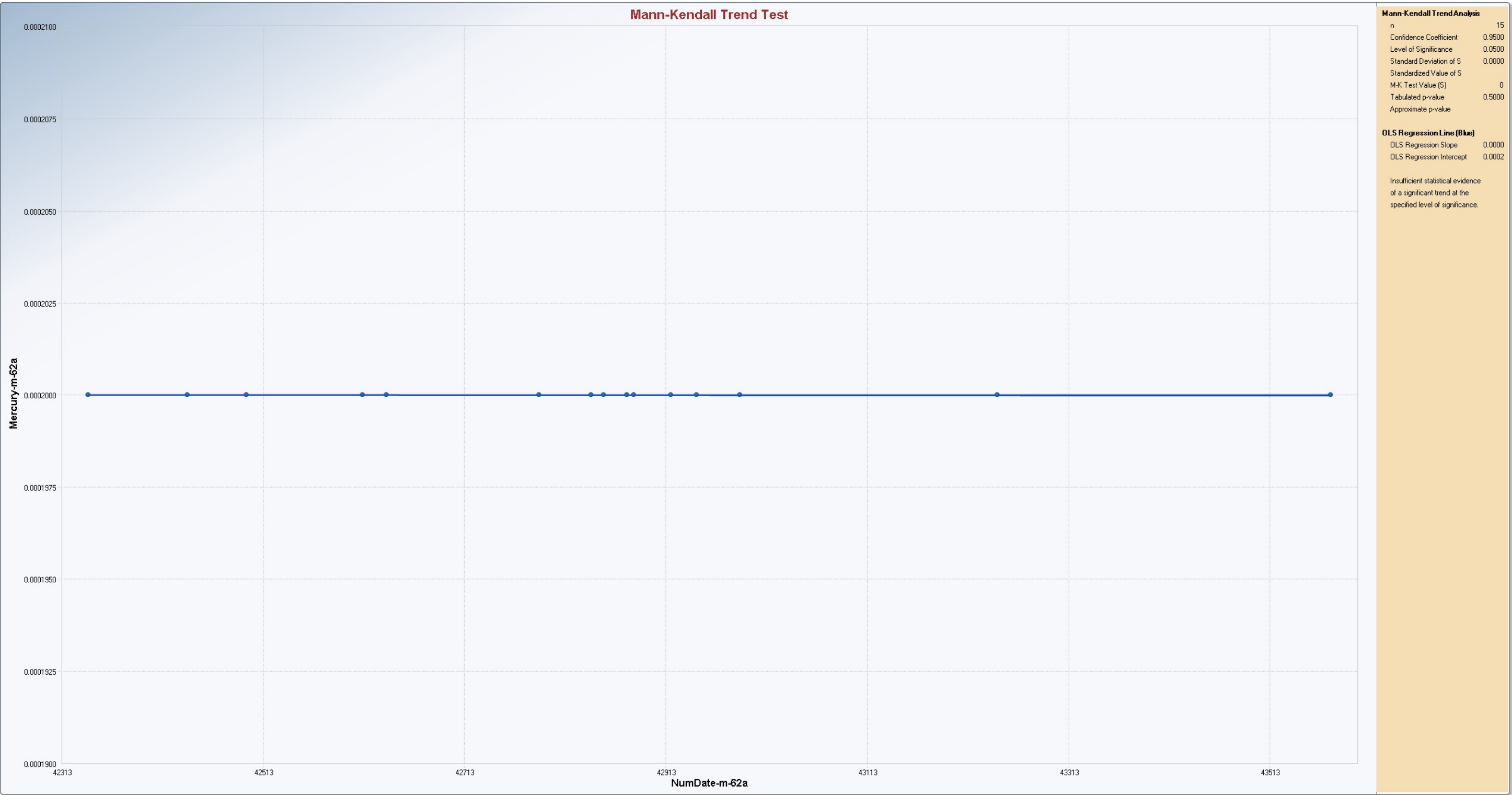
Fluoride-m-58a

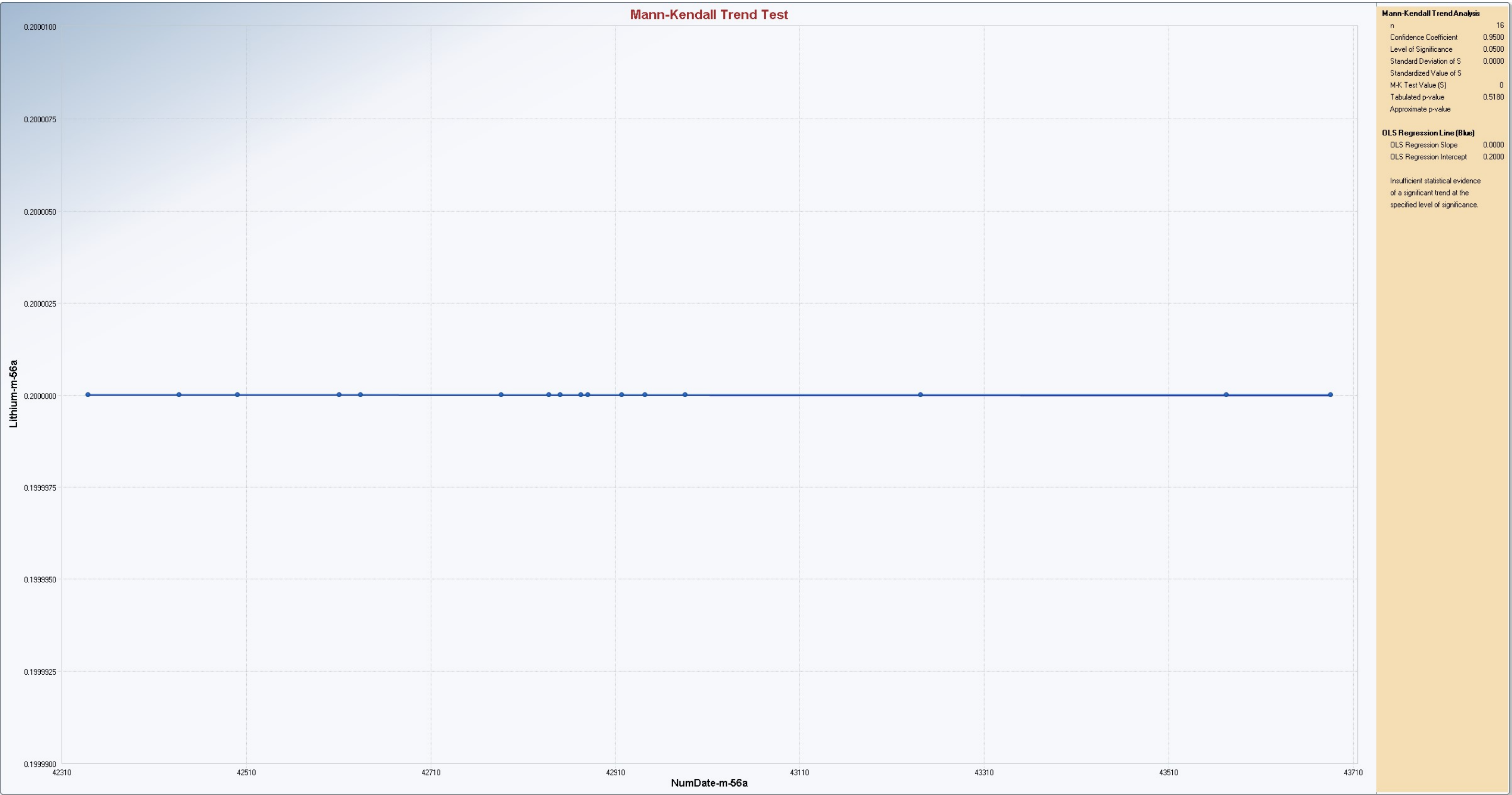
NumDate-m-58a

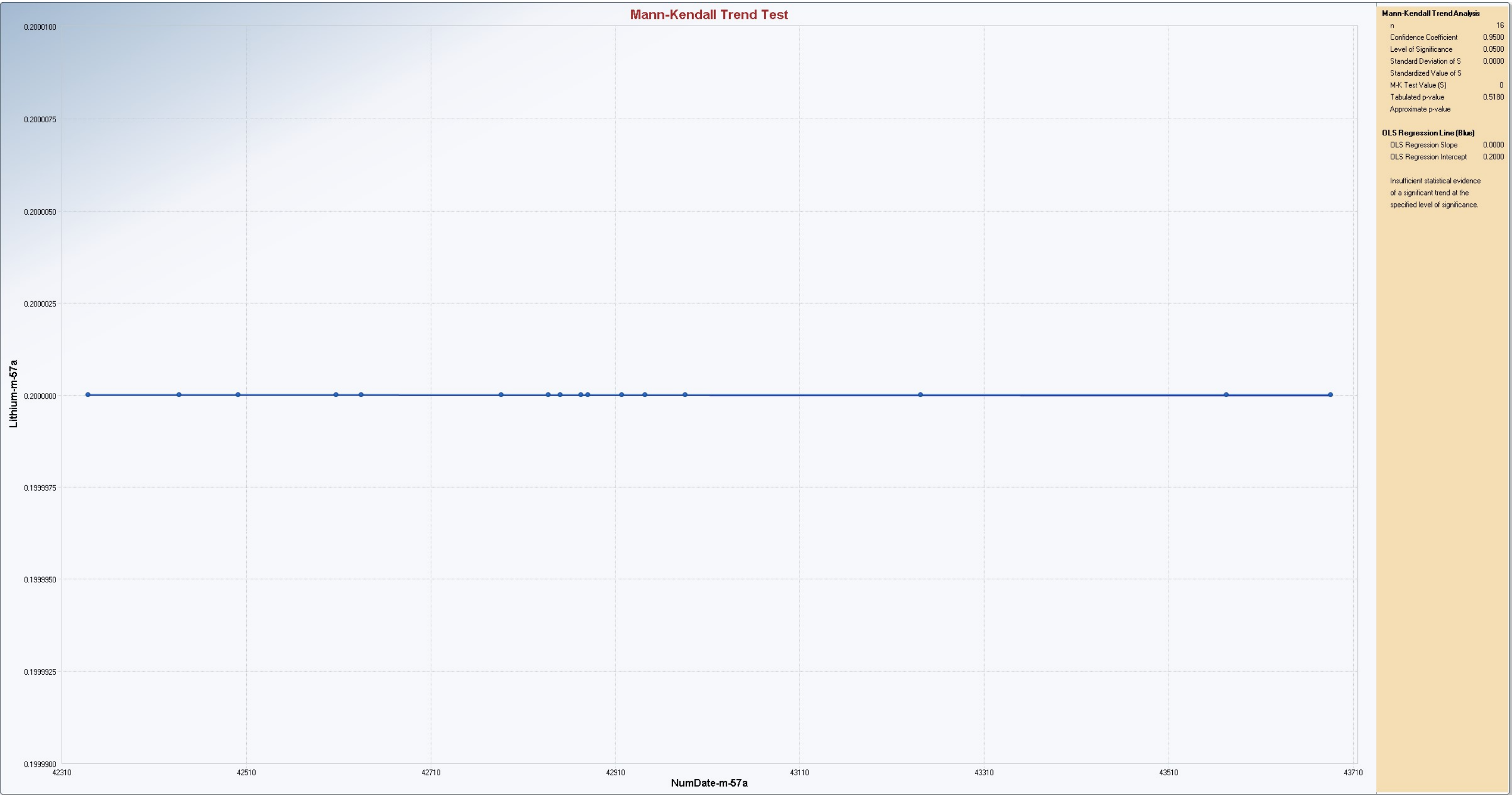


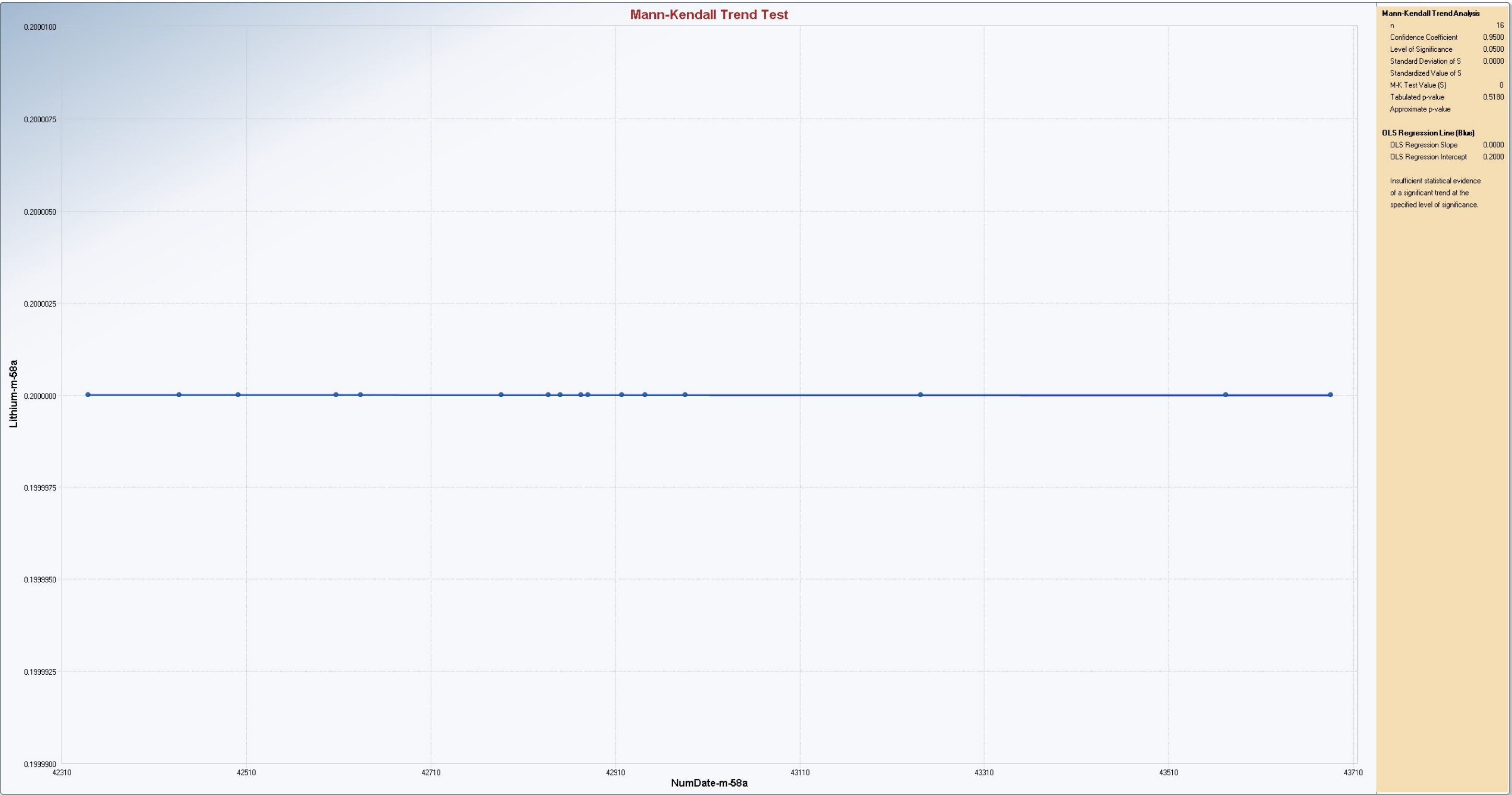


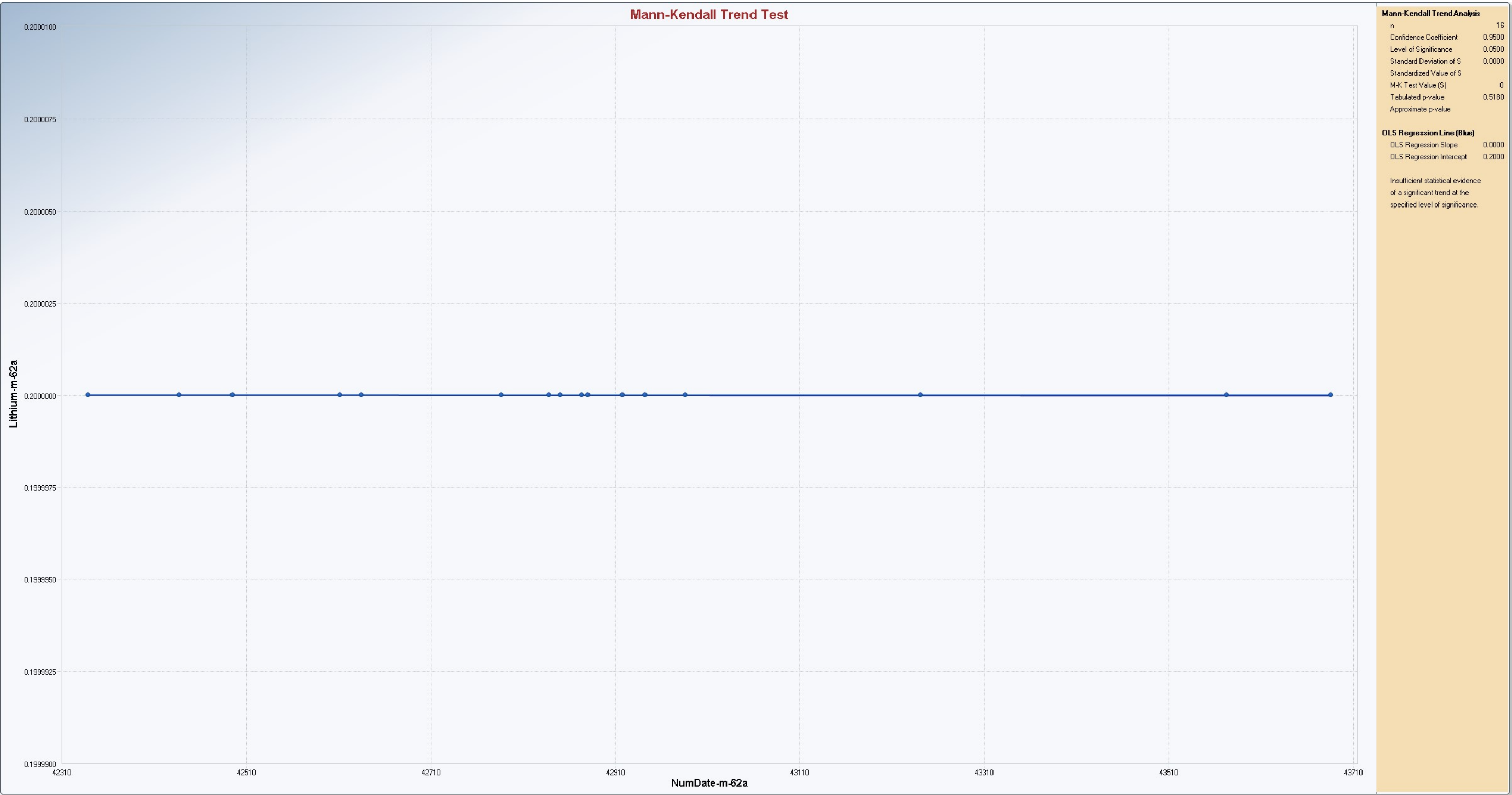










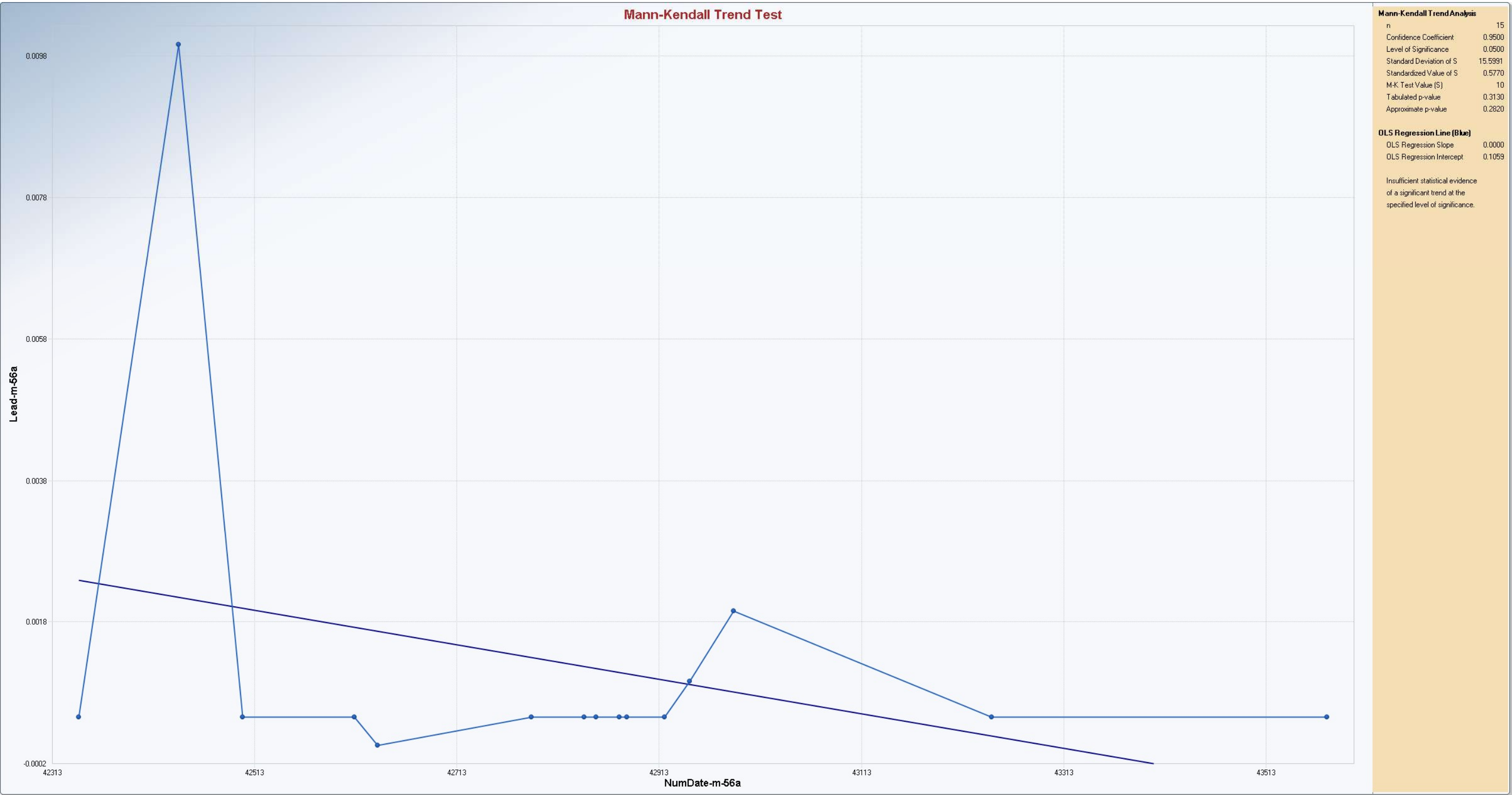






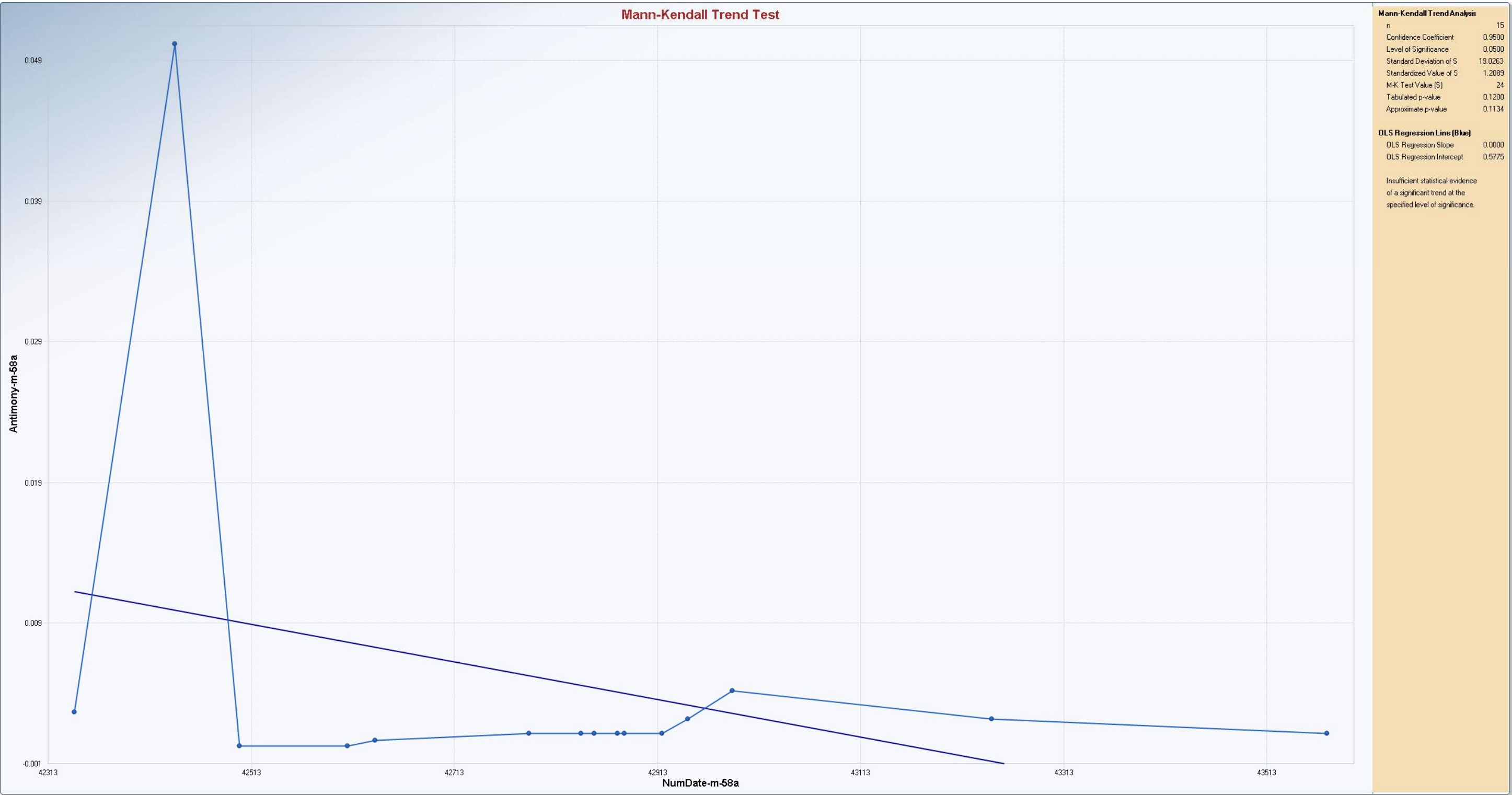






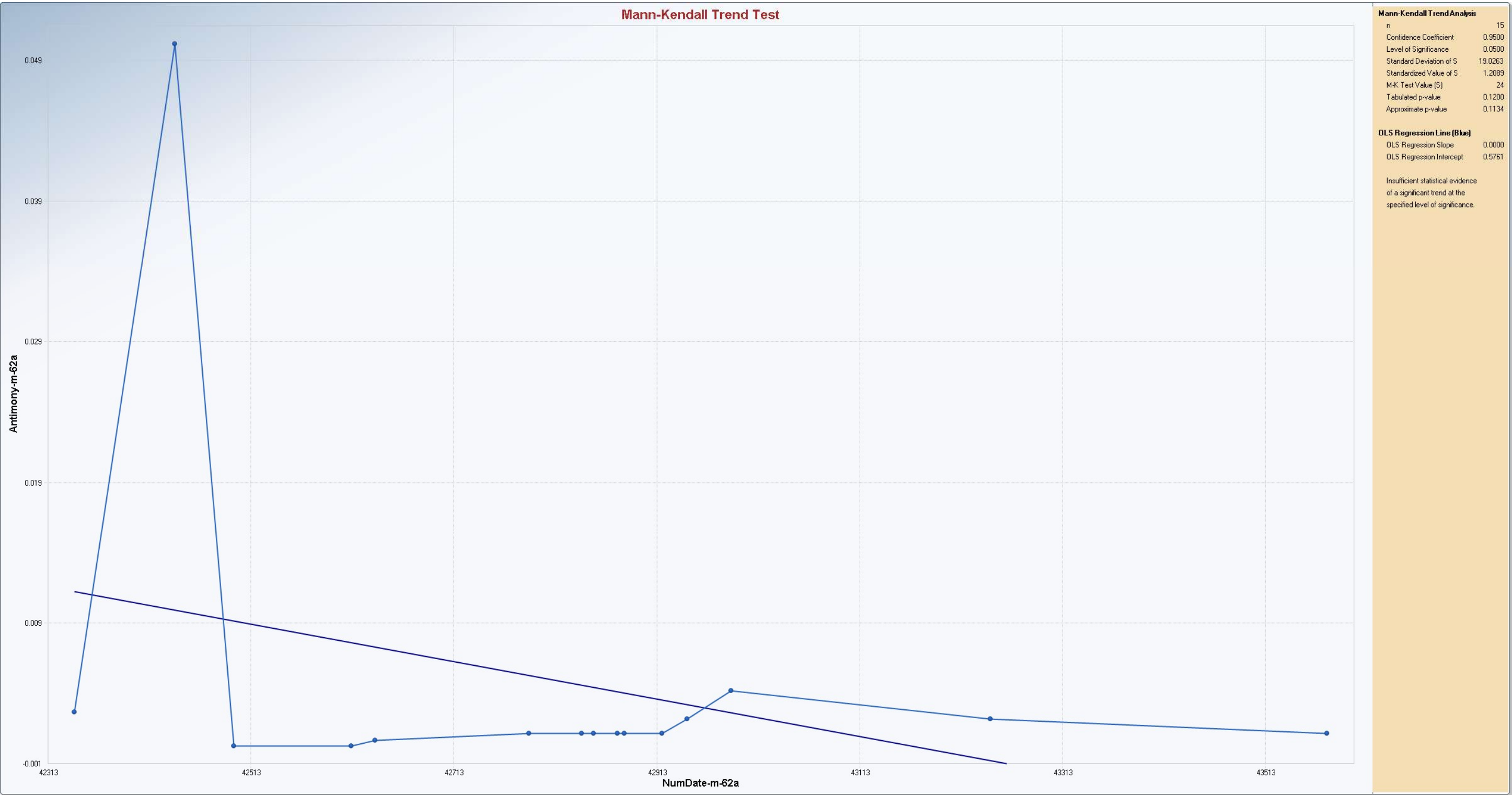
Lead-m-56a

NumDate-m-56a



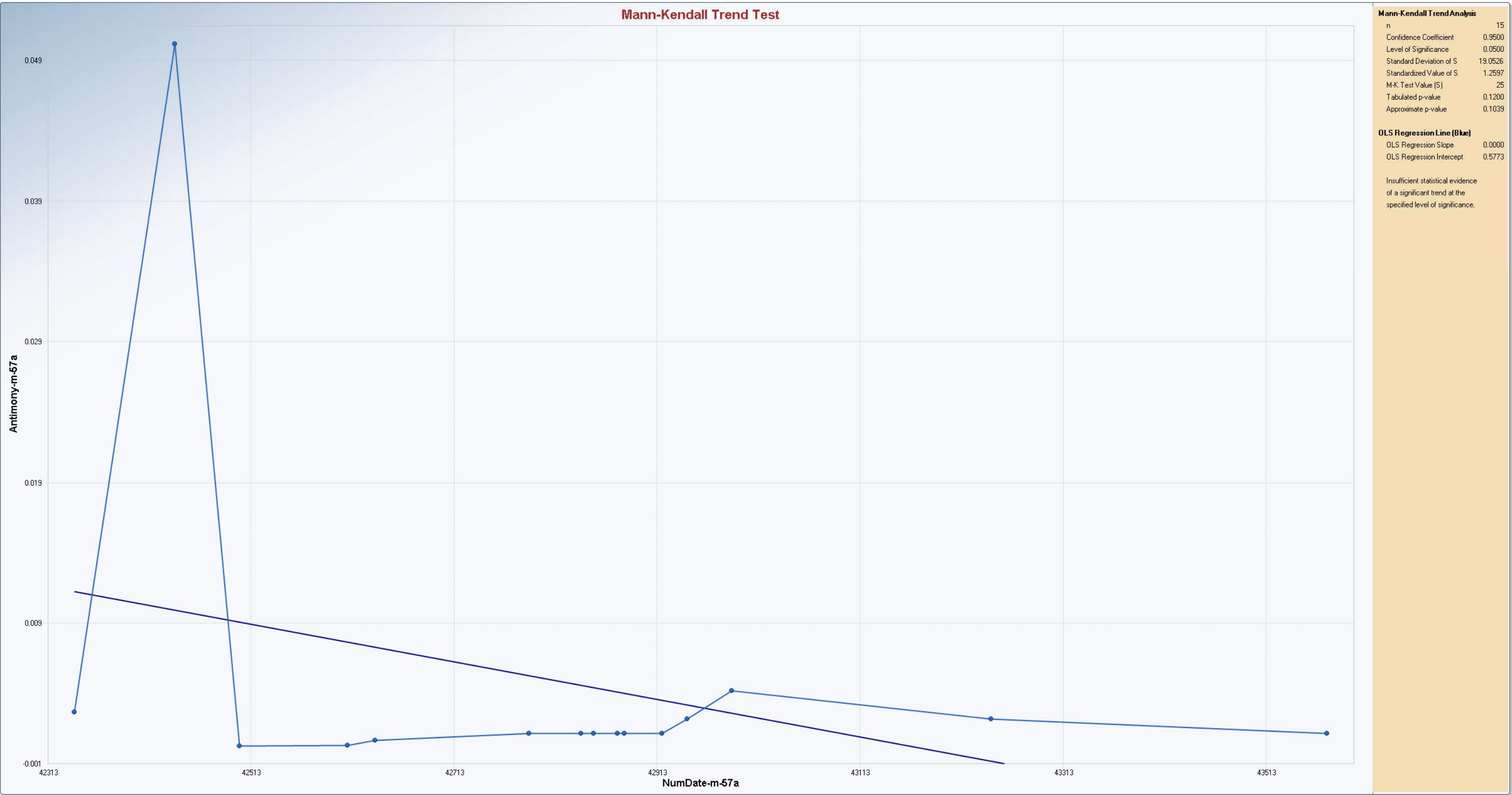
Antimony-m-58a

NumDate-m-58a



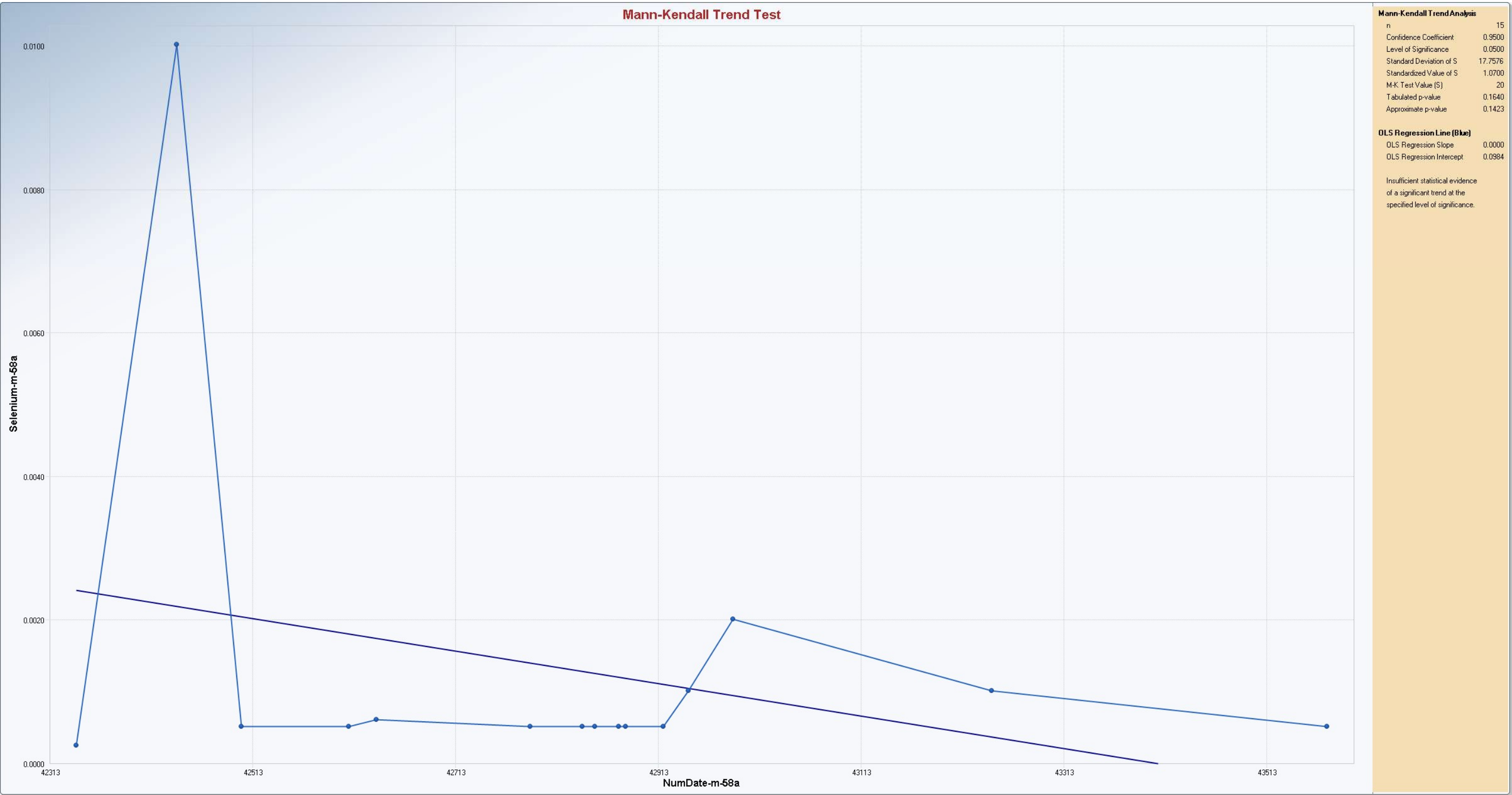
Antimony-m-62a

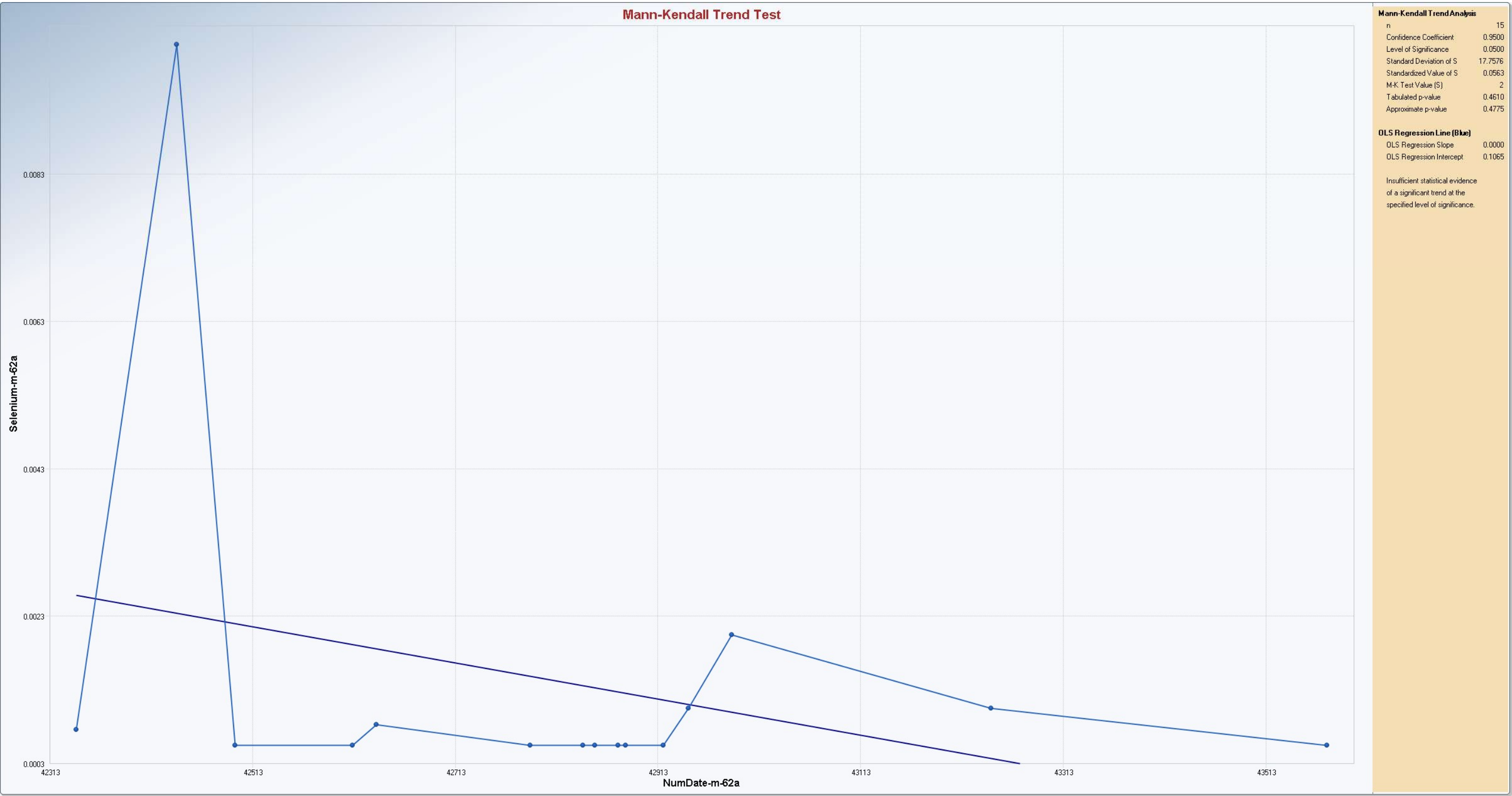
NumDate-m-62a

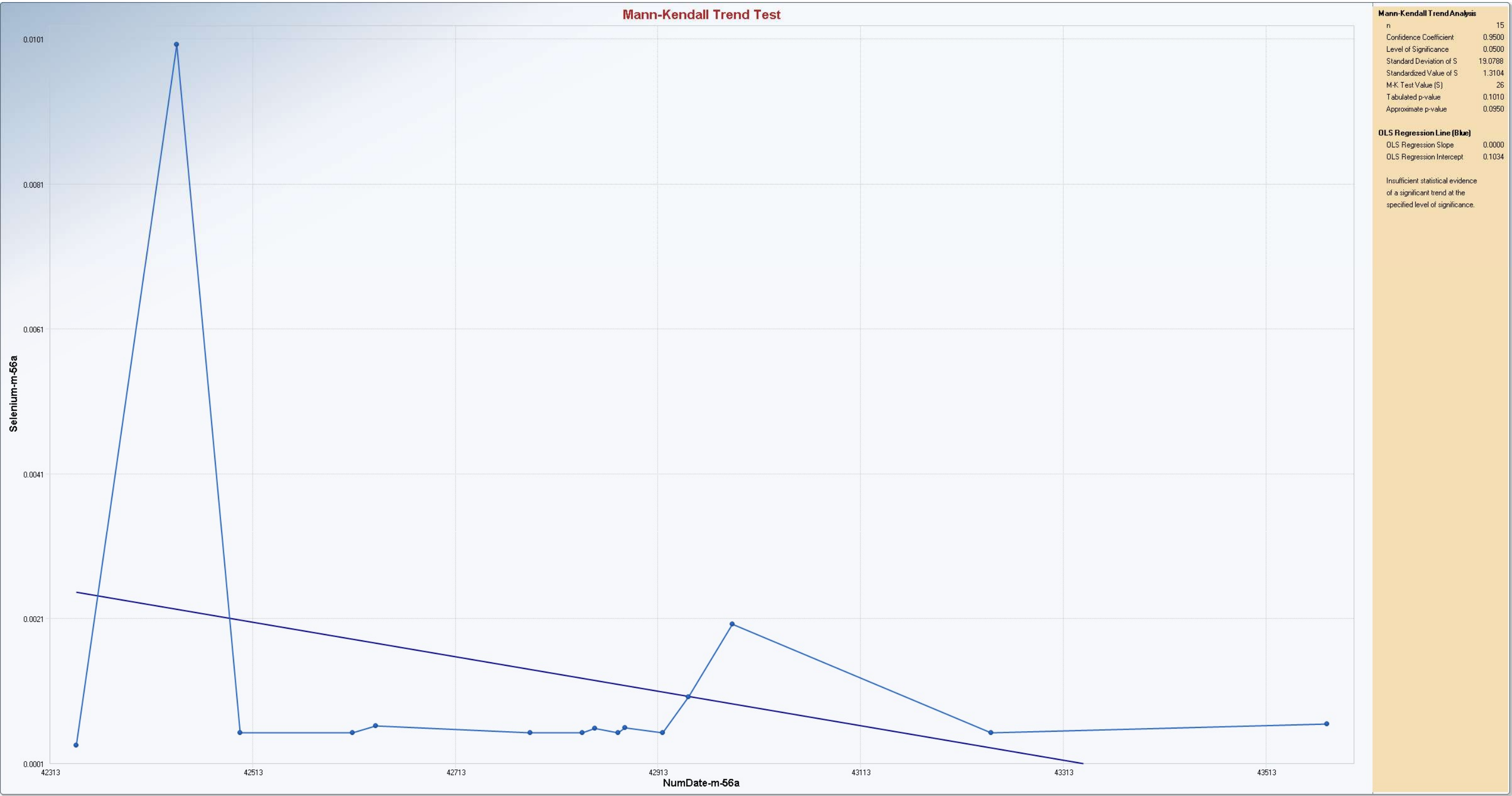


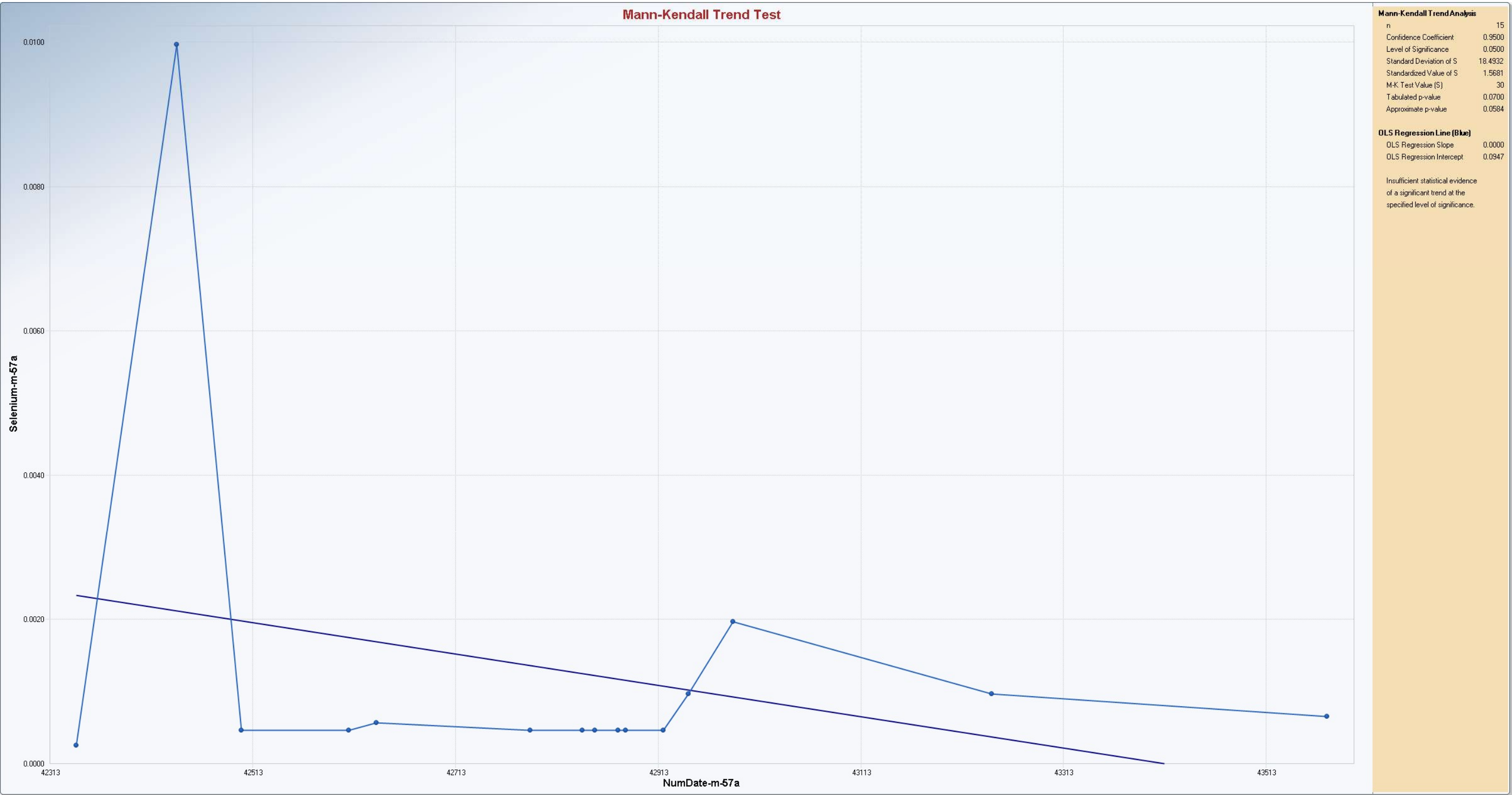
Antimony-m-57a

NumDate-m-57a



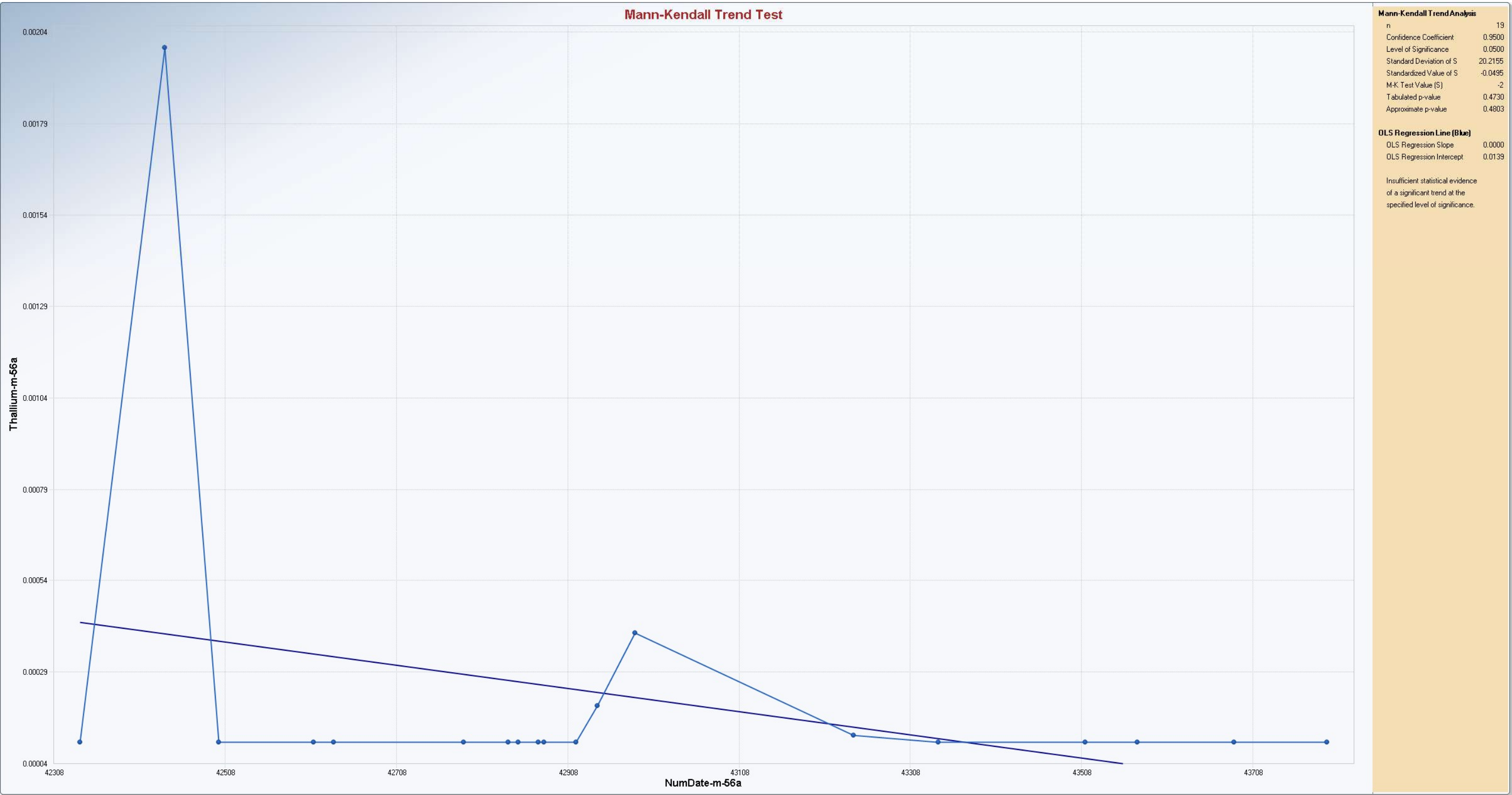






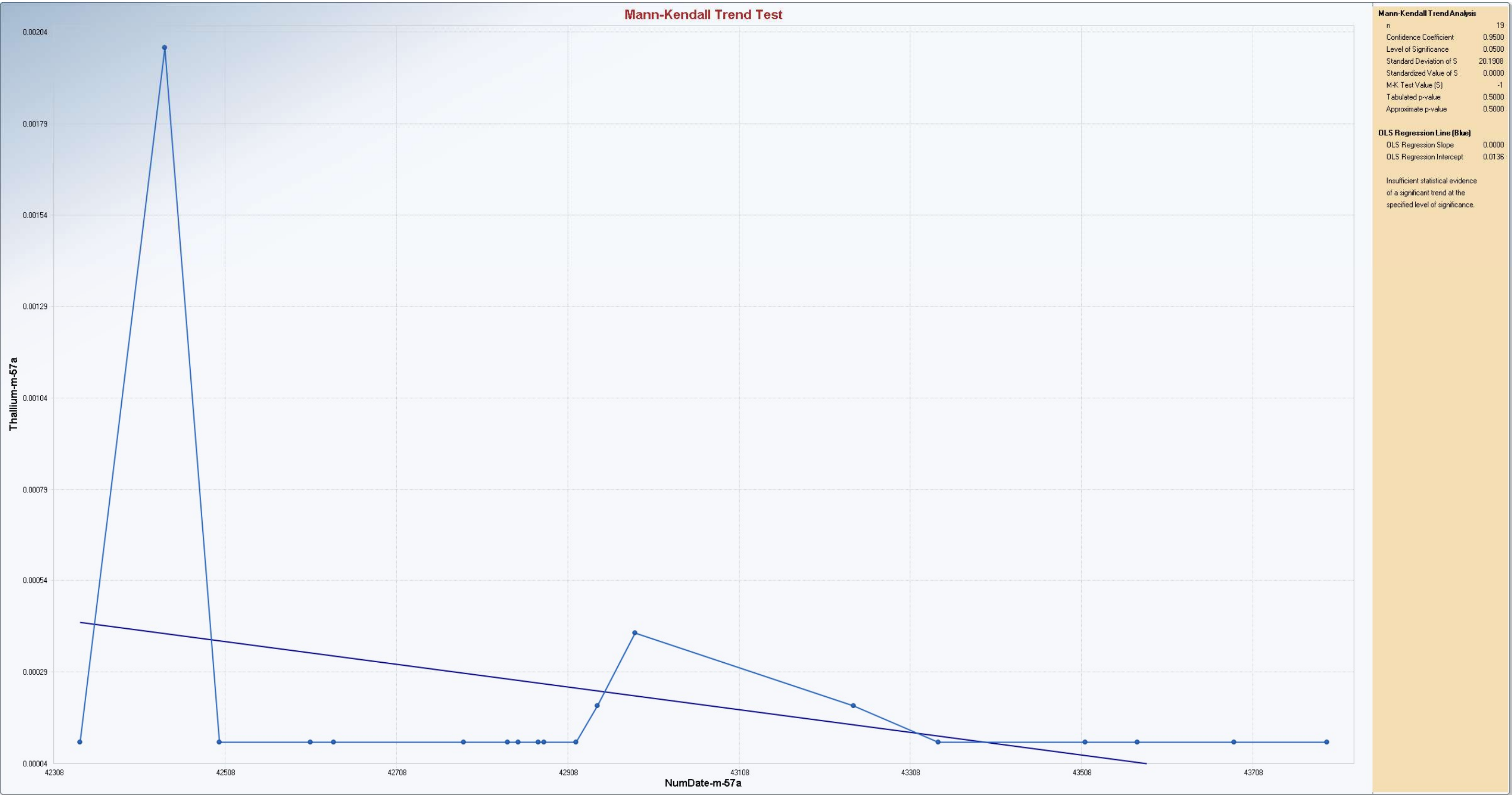
Selenium-m-57a

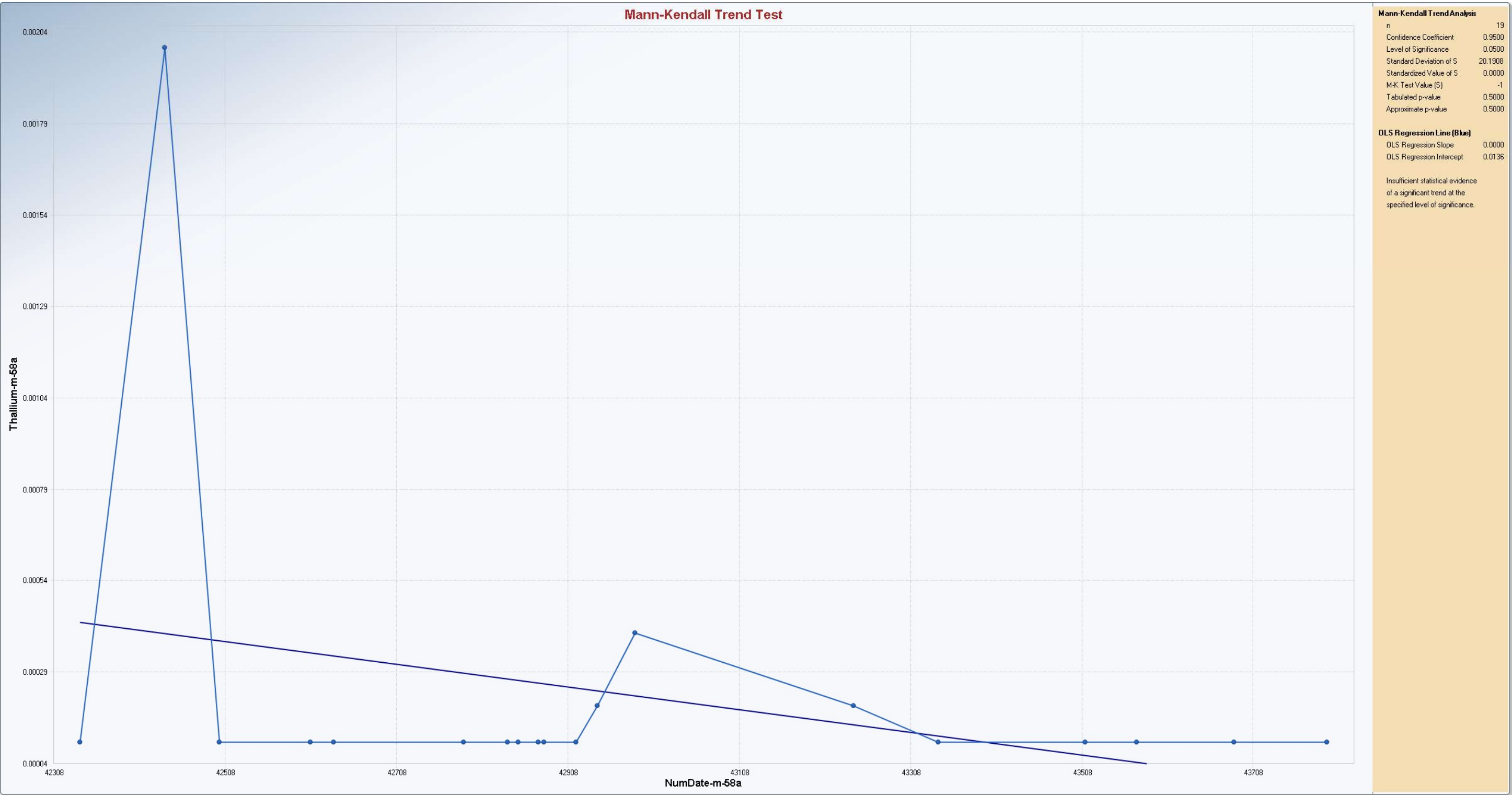
NumDate-m-57a

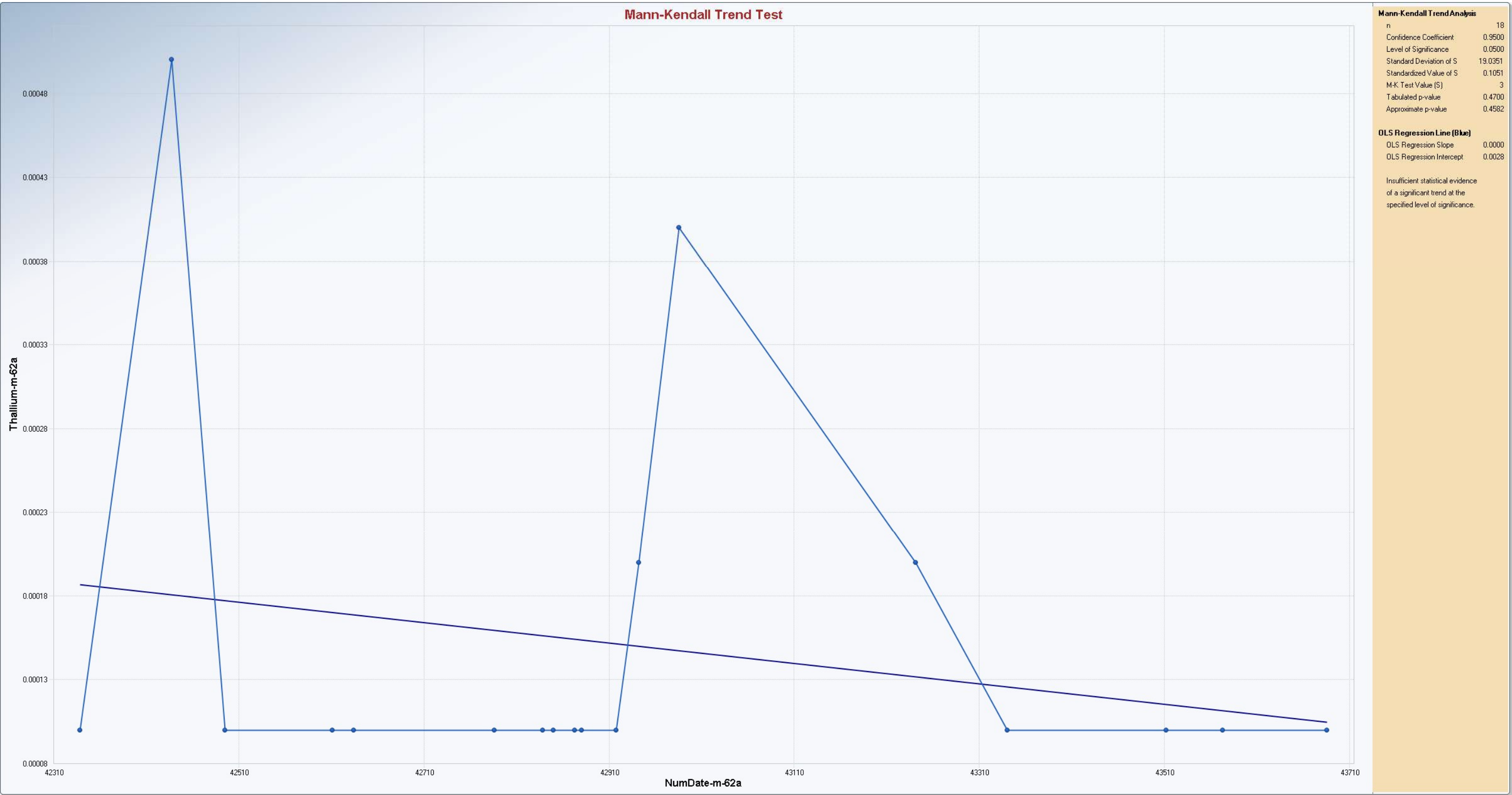


Thalium-m-56a

NumDate-m-56a







Thalium-m-62a

NumDate-m-62a

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	General Statistics on Uncensored Data												
2	Date/Time of Computation			ProUCL 5.14/11/2020 11:03:27 PM									
3	User Selected Options												
4	From File			SEDIPond_Cholla_AssessMonNov2019_NoDups.xls									
5	Full Precision			OFF									
6													
7	From File: SEDIPond_Cholla_AssessMonNov2019_NoDups.xls												
8													
9	General Statistics for Censored Data Set (with NDs) using Kaplan Meier Method												
10													
11	Variable	NumObs	# Missing	Num Ds	NumNDs	% NDs	Min ND	Max ND	KM Mean	KM Var	KM SD	KM CV	
12	Antimony (m-56a)	15	5	1	14	93.33%	1.0000E-4	0.05	1.1500E-4	2.250E-10	1.5000E-5	0.13	
13	Antimony (m-57a)	15	5	1	14	93.33%	1.0000E-4	0.05	1.1000E-4	1.000E-10	1.0000E-5	0.0909	
14	Antimony (m-58a)	15	5	0	15	100.00%	1.0000E-4	0.05	N/A	N/A	N/A	N/A	
15	Antimony (m-62a)	15	5	0	15	100.00%	1.0000E-4	0.05	N/A	N/A	N/A	N/A	
16	Arsenic (m-56a)	18	2	13	5	27.78%	0.001	0.01	0.00133	3.2462E-6	0.0018	1.353	
17	Arsenic (m-57a)	18	2	17	1	5.56%	0.0019	0.0019	0.00384	4.2524E-6	0.00206	0.537	
18	Arsenic (m-58a)	18	2	15	3	16.67%	0.0038	0.01	0.0039	7.7196E-7	8.7861E-4	0.225	
19	Arsenic (m-62a)	18	2	15	3	16.67%	0.0031	0.01	0.00253	2.6701E-7	5.1673E-4	0.204	
20	Barium (m-56a)	18	2	16	2	11.11%	0.055	0.078	0.0711	6.8261E-5	0.00826	0.116	
21	Barium (m-57a)	18	2	17	1	5.56%	0.039	0.039	0.0463	7.4756E-5	0.00865	0.187	
22	Barium (m-58a)	18	2	16	2	11.11%	0.059	0.066	0.0686	3.5722E-4	0.0189	0.276	
23	Barium (m-62a)	18	2	16	2	11.11%	0.067	0.068	0.0789	4.2183E-4	0.0205	0.26	
24	Beryllium (m-56a)	15	5	0	15	100.00%	0.001	0.001	N/A	N/A	N/A	N/A	
25	Beryllium (m-57a)	15	5	0	15	100.00%	0.001	0.001	N/A	N/A	N/A	N/A	
26	Beryllium (m-58a)	15	5	0	15	100.00%	0.001	0.001	N/A	N/A	N/A	N/A	
27	Beryllium (m-62a)	15	5	0	15	100.00%	0.001	0.001	N/A	N/A	N/A	N/A	
28	Cadmium (m-56a)	15	5	0	15	100.00%	1.0000E-4	0.002	N/A	N/A	N/A	N/A	
29	Cadmium (m-57a)	15	5	0	15	100.00%	1.0000E-4	0.002	N/A	N/A	N/A	N/A	
30	Cadmium (m-58a)	15	5	0	15	100.00%	1.0000E-4	0.002	N/A	N/A	N/A	N/A	
31	Cadmium (m-62a)	15	5	0	15	100.00%	1.0000E-4	0.002	N/A	N/A	N/A	N/A	
32	Chromium (m-56a)	18	2	12	6	33.33%	5.0000E-4	0.076	0.00499	2.3234E-5	0.00482	0.967	
33	Chromium (m-57a)	18	2	15	3	16.67%	5.0000E-4	0.038	0.0168	2.0533E-4	0.0143	0.855	
34	Chromium (m-58a)	18	2	8	10	55.56%	5.0000E-4	0.01	0.00105	7.4697E-7	8.6428E-4	0.821	
35	Chromium (m-62a)	18	2	9	9	50.00%	5.0000E-4	0.01	0.00104	1.8676E-7	4.3216E-4	0.415	
36	Cobalt (m-56a)	18	2	10	8	44.44%	5.0000E-4	0.002	8.4525E-4	1.6098E-7	4.0122E-4	0.475	
37	Cobalt (m-57a)	18	2	17	1	5.56%	0.004	0.004	0.00709	2.0116E-6	0.00142	0.2	
38	Cobalt (m-58a)	18	2	6	12	66.67%	5.0000E-4	0.01	6.2529E-4	4.3293E-8	2.0807E-4	0.333	
39	Cobalt (m-62a)	18	2	4	14	77.78%	5.0000E-4	0.002	6.0580E-4	1.7970E-7	4.2391E-4	0.7	
40	Fluoride (m-56a)	19	1	8	11	57.89%	0.4	0.8	0.416	7.8754E-4	0.0281	0.0674	
41	Fluoride (m-57a)	19	1	2	17	89.47%	0.4	0.8	0.408	8.9167E-4	0.0299	0.0731	
42	Fluoride (m-58a)	19	1	1	18	94.74%	0.4	0.8	0.402	4.9827E-5	0.00706	0.0176	
43	Fluoride (m-62a)	19	1	0	19	100.00%	0.4	0.8	N/A	N/A	N/A	N/A	
44	Lead (m-56a)	15	5	0	15	100.00%	1.0000E-4	0.01	N/A	N/A	N/A	N/A	
45	Lead (m-57a)	15	5	2	13	86.67%	5.0000E-4	0.01	2.6909E-4	3.4917E-8	1.8686E-4	0.694	
46	Lead (m-58a)	15	5	4	11	73.33%	1.0000E-4	0.01	3.1371E-4	1.0796E-7	3.2857E-4	1.047	
47	Lead (m-62a)	15	5	0	15	100.00%	1.0000E-4	0.01	N/A	N/A	N/A	N/A	
48	Lithium (m-56a)	16	4	0	16	100.00%	0.2	0.2	N/A	N/A	N/A	N/A	
49	Lithium (m-57a)	16	4	0	16	100.00%	0.2	0.2	N/A	N/A	N/A	N/A	
50	Lithium (m-58a)	16	4	0	16	100.00%	0.2	0.2	N/A	N/A	N/A	N/A	
51	Lithium (m-62a)	16	4	0	16	100.00%	0.2	0.2	N/A	N/A	N/A	N/A	
52	Mercury (m-56a)	15	5	0	15	100.00%	2.0000E-4	2.0000E-4	N/A	N/A	N/A	N/A	

	A	B	C	D	E	F	G	H	I	J	K	L	M
53	Mercury (m-57a)		15	5	0	15	100.00%	2.0000E-4	2.0000E-4	N/A	N/A	N/A	N/A
54	Mercury (m-58a)		15	5	0	15	100.00%	2.0000E-4	2.0000E-4	N/A	N/A	N/A	N/A
55	Mercury (m-62a)		15	5	0	15	100.00%	2.0000E-4	2.0000E-4	N/A	N/A	N/A	N/A
56	Molybdenum (m-56a)		19	1	17	2	10.53%	0.011	0.014	0.0122	3.4491E-5	0.00587	0.481
57	Molybdenum (m-57a)		18	2	17	1	5.56%	0.0068	0.0068	0.00536	1.9278E-5	0.00439	0.82
58	Molybdenum (m-58a)		18	2	14	4	22.22%	0.0018	0.01	0.00298	1.7578E-5	0.00419	1.405
59	Molybdenum (m-62a)		18	2	16	2	11.11%	0.0026	0.0028	0.00289	4.1620E-6	0.00204	0.707
60	Radium (m-56a)		17	3	11	6	35.29%	0.4	1.2	0.954	0.303	0.551	0.578
61	Radium (m-57a)		17	3	5	12	70.59%	0.4	0.9	0.583	0.0803	0.283	0.486
62	Radium (m-58a)		17	3	8	9	52.94%	0.6	0.9	0.978	0.377	0.614	0.628
63	Radium (m-62a)		16	4	13	3	18.75%	0.7	0.8	0.971	0.182	0.426	0.439
64	Selenium (m-56a)		15	5	3	12	80.00%	5.0000E-4	0.01	3.7700E-4	8.8410E-9	9.4027E-5	0.249
65	Selenium (m-57a)		15	5	2	13	86.67%	5.0000E-4	0.01	3.2636E-4	1.3223E-8	1.1499E-4	0.352
66	Selenium (m-58a)		15	5	1	14	93.33%	5.0000E-4	0.01	2.4000E-4	0	0	N/A
67	Selenium (m-62a)		15	5	2	13	86.67%	5.0000E-4	0.01	5.4455E-4	9.1521E-9	9.5666E-5	0.176
68	Thallium (m-56a)		19	1	1	18	94.74%	1.0000E-4	0.002	1.0125E-4	2.344E-11	4.8412E-6	0.0478
69	Thallium (m-57a)		19	1	0	19	100.00%	1.0000E-4	0.002	N/A	N/A	N/A	N/A
70	Thallium (m-58a)		19	1	0	19	100.00%	1.0000E-4	0.002	N/A	N/A	N/A	N/A
71	Thallium (m-62a)		18	2	1	17	94.44%	1.0000E-4	4.0000E-4	1.2222E-4	8.3951E-9	9.1625E-5	0.75
72													
73	General Statistics for Raw Data Sets using Detected Data Only												
74													
75	Variable		NumObs	# Missing	Minimum	Maximum	Mean	Median	Var	SD	MAD/0.675	Skewness	CV
76	Antimony (m-56a)		1	5	1.3000E-4	1.3000E-4	1.3000E-4	1.3000E-4	N/A	N/A	0	N/A	N/A
77	Antimony (m-57a)		1	5	1.2000E-4	1.2000E-4	1.2000E-4	1.2000E-4	N/A	N/A	0	N/A	N/A
78	Antimony (m-58a)		0	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
79	Antimony (m-62a)		0	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
80	Arsenic (m-56a)		13	2	6.0000E-4	0.0082	0.00146	8.1000E-4	4.2277E-6	0.00206	1.7791E-4	3.434	1.412
81	Arsenic (m-57a)		17	2	0.0017	0.0098	0.00396	0.0038	4.4812E-6	0.00212	0.00178	1.437	0.534
82	Arsenic (m-58a)		15	2	0.0025	0.0057	0.004	0.004	8.1286E-7	9.0159E-4	0.00104	0.0135	0.225
83	Arsenic (m-62a)		15	2	0.0016	0.0031	0.00253	0.0028	2.8667E-7	5.3541E-4	4.4477E-4	-0.616	0.211
84	Barium (m-56a)		16	2	0.061	0.086	0.0723	0.0705	6.0096E-5	0.00775	0.00741	0.385	0.107
85	Barium (m-57a)		17	2	0.038	0.072	0.0468	0.043	7.9566E-5	0.00892	0.00297	1.923	0.191
86	Barium (m-58a)		16	2	0.043	0.11	0.0706	0.0675	3.8292E-4	0.0196	0.0185	0.563	0.277
87	Barium (m-62a)		16	2	0.064	0.16	0.0808	0.0755	4.7270E-4	0.0217	0.00519	3.612	0.269
88	Beryllium (m-56a)		0	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
89	Beryllium (m-57a)		0	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
90	Beryllium (m-58a)		0	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
91	Beryllium (m-62a)		0	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
92	Cadmium (m-56a)		0	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
93	Cadmium (m-57a)		0	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
94	Cadmium (m-58a)		0	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
95	Cadmium (m-62a)		0	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
96	Chromium (m-56a)		12	2	5.1000E-4	0.02	0.00611	0.0049	2.6632E-5	0.00516	0.00289	1.888	0.845
97	Chromium (m-57a)		15	2	6.6000E-4	0.045	0.019	0.016	2.1568E-4	0.0147	0.0178	0.41	0.773
98	Chromium (m-58a)		8	2	5.2000E-4	0.0033	0.00151	9.8500E-4	1.1888E-6	0.00109	6.6716E-4	0.999	0.724
99	Chromium (m-62a)		9	2	6.3000E-4	0.002	0.00123	0.0011	2.0319E-7	4.5076E-4	4.7443E-4	0.434	0.367
100	Cobalt (m-56a)		10	2	6.1000E-4	0.002	0.00105	9.8500E-4	1.8854E-7	4.3422E-4	4.2254E-4	1.119	0.413
101	Cobalt (m-57a)		17	2	0.0049	0.0088	0.00728	0.0077	1.6294E-6	0.00128	0.00133	-0.725	0.175
102	Cobalt (m-58a)		6	2	5.1000E-4	0.0011	8.2333E-4	8.8000E-4	5.8547E-8	2.4196E-4	2.5204E-4	-0.364	0.294
103	Cobalt (m-62a)		4	2	4.6000E-4	0.0022	0.0011	8.7000E-4	6.4773E-7	8.0482E-4	5.4855E-4	1.144	0.732
104	Fluoride (m-56a)		8	1	0.4	0.49	0.435	0.425	0.00117	0.0342	0.0371	0.57	0.0787

	A	B	C	D	E	F	G	H	I	J	K	L	M
105	Fluoride (m-57a)		2	1	0.42	0.53	0.475	0.475	0.00605	0.0778	0.0815	N/A	0.164
106	Fluoride (m-58a)		1	1	0.43	0.43	0.43	0.43	N/A	N/A	0	N/A	N/A
107	Fluoride (m-62a)		0	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
108	Lead (m-56a)		0	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
109	Lead (m-57a)		2	5	2.1000E-4	8.6000E-4	5.3500E-4	5.3500E-4	2.1125E-7	4.5962E-4	4.8184E-4	N/A	0.859
110	Lead (m-58a)		4	5	5.6000E-4	0.0011	7.5750E-4	6.8500E-4	6.1625E-8	2.4824E-4	1.6308E-4	1.211	0.328
111	Lead (m-62a)		0	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
112	Lithium (m-56a)		0	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
113	Lithium (m-57a)		0	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
114	Lithium (m-58a)		0	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
115	Lithium (m-62a)		0	4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
116	Mercury (m-56a)		0	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
117	Mercury (m-57a)		0	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
118	Mercury (m-58a)		0	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
119	Mercury (m-62a)		0	5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
120	Molybdenum (m-56a)		17	1	0.0057	0.029	0.0126	0.0098	3.9183E-5	0.00626	0.00282	1.559	0.497
121	Molybdenum (m-57a)		17	2	0.0011	0.022	0.00544	0.0042	2.1443E-5	0.00463	0.00193	3.142	0.851
122	Molybdenum (m-58a)		14	2	0.0014	0.02	0.00336	0.0018	2.3609E-5	0.00486	4.4477E-4	3.573	1.447
123	Molybdenum (m-62a)		16	2	0.0019	0.011	0.00297	0.0023	4.9250E-6	0.00222	1.4826E-4	3.59	0.748
124	Radium (m-56a)		11	3	0.5	1.9	1.209	1.4	0.309	0.556	0.593	-0.298	0.46
125	Radium (m-57a)		5	3	0.5	1.5	0.88	0.7	0.172	0.415	0.297	0.971	0.471
126	Radium (m-58a)		8	3	0.7	2.6	1.4	1.05	0.531	0.729	0.445	0.761	0.521
127	Radium (m-62a)		13	4	0.5	2	1.077	1	0.177	0.421	0.445	0.604	0.391
128	Selenium (m-56a)		3	5	3.3000E-4	5.7000E-4	4.8667E-4	5.6000E-4	1.8433E-8	1.3577E-4	1.4826E-5	-1.721	0.279
129	Selenium (m-57a)		2	5	2.9000E-4	6.9000E-4	4.9000E-4	4.9000E-4	8.0000E-8	2.8284E-4	2.9652E-4	N/A	0.577
130	Selenium (m-58a)		1	5	2.4000E-4	2.4000E-4	2.4000E-4	2.4000E-4	N/A	N/A	0	N/A	N/A
131	Selenium (m-62a)		2	5	7.1000E-4	7.8000E-4	7.4500E-4	7.4500E-4	2.4500E-9	4.9497E-5	5.1890E-5	N/A	0.0664
132	Thallium (m-56a)		1	1	1.2000E-4	1.2000E-4	1.2000E-4	1.2000E-4	N/A	N/A	0	N/A	N/A
133	Thallium (m-57a)		0	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
134	Thallium (m-58a)		0	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
135	Thallium (m-62a)		1	2	5.0000E-4	5.0000E-4	5.0000E-4	5.0000E-4	N/A	N/A	0	N/A	N/A
136													
137	Percentiles using all Detects (Ds) and Non-Detects (NDs)												
138													
139	Variable		NumObs	# Missing	10%ile	20%ile	25%ile(Q1)	50%ile(Q2)	75%ile(Q3)	80%ile	90%ile	95%ile	99%ile
140	Antimony (m-56a)		15	5	2.7800E-4	9.0000E-4	0.001	0.001	0.0015	0.0021	0.0034	0.0178	0.0436
141	Antimony (m-57a)		15	5	2.7200E-4	9.0000E-4	0.001	0.001	0.002	0.0021	0.0034	0.0178	0.0436
142	Antimony (m-58a)		15	5	2.6000E-4	9.0000E-4	0.001	0.001	0.002	0.0021	0.0034	0.0178	0.0436
143	Antimony (m-62a)		15	5	2.6000E-4	9.0000E-4	0.001	0.001	0.002	0.0021	0.0034	0.0178	0.0436
144	Arsenic (m-56a)		18	2	6.7100E-4	7.2000E-4	7.5250E-4	8.8000E-4	0.00175	0.00196	0.00829	0.00873	0.00975
145	Arsenic (m-57a)		18	2	0.0019	0.00214	0.0023	0.00325	0.00465	0.00498	0.00646	0.00708	0.00926
146	Arsenic (m-58a)		18	2	0.00291	0.0034	0.0037	0.00395	0.00465	0.00476	0.00528	0.00634	0.00927
147	Arsenic (m-62a)		18	2	0.00184	0.00204	0.00218	0.0029	0.00308	0.0031	0.00316	0.0043	0.00886
148	Barium (m-56a)		18	2	0.0617	0.0654	0.0663	0.0705	0.0775	0.0798	0.0826	0.0843	0.0857
149	Barium (m-57a)		18	2	0.0404	0.041	0.0413	0.043	0.0465	0.0494	0.0574	0.0644	0.0705
150	Barium (m-58a)		18	2	0.0487	0.055	0.056	0.065	0.079	0.0806	0.0979	0.102	0.108
151	Barium (m-62a)		18	2	0.0677	0.0696	0.072	0.075	0.079	0.0808	0.0826	0.0954	0.147
152	Beryllium (m-56a)		15	5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
153	Beryllium (m-57a)		15	5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
154	Beryllium (m-58a)		15	5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
155	Beryllium (m-62a)		15	5	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
156	Cadmium (m-56a)		15	5	1.0000E-4	1.0000E-4	1.0000E-4	1.0000E-4	1.0000E-4	1.2000E-4	3.2000E-4	8.8000E-4	0.00178

	A	B	C	D	E	F	G	H	I	J	K	L	M
157	Cadmium (m-57a)		15	5	1.0000E-4	1.0000E-4	1.0000E-4	1.0000E-4	1.5000E-4	2.0000E-4	3.2000E-4	8.8000E-4	0.00178
158	Cadmium (m-58a)		15	5	1.0000E-4	1.0000E-4	1.0000E-4	1.0000E-4	1.5000E-4	2.0000E-4	3.2000E-4	8.8000E-4	0.00178
159	Cadmium (m-62a)		15	5	1.0000E-4	1.0000E-4	1.0000E-4	1.0000E-4	1.5000E-4	2.0000E-4	3.2000E-4	8.8000E-4	0.00178
160	Chromium (m-56a)		18	2	5.0700E-4	0.00184	0.00295	0.0049	0.00925	0.00972	0.0209	0.0309	0.067
161	Chromium (m-57a)		18	2	7.1600E-4	0.00406	0.00688	0.0155	0.0303	0.0334	0.0392	0.0425	0.0445
162	Chromium (m-58a)		18	2	5.0000E-4	5.3200E-4	6.4000E-4	0.001	0.00195	0.0026	0.00351	0.0049	0.00898
163	Chromium (m-62a)		18	2	7.3500E-4	9.7200E-4	9.9250E-4	0.00105	0.00193	0.002	0.00379	0.0049	0.00898
164	Cobalt (m-56a)		18	2	5.0000E-4	5.4400E-4	6.2000E-4	8.8500E-4	0.00128	0.0013	0.00151	0.002	0.002
165	Cobalt (m-57a)		18	2	0.00497	0.00574	0.00598	0.00765	0.0082	0.00826	0.00863	0.00872	0.00878
166	Cobalt (m-58a)		18	2	5.0000E-4	5.0000E-4	5.0000E-4	5.0500E-4	9.9250E-4	0.001	0.00137	0.0032	0.00864
167	Cobalt (m-62a)		18	2	5.0000E-4	5.0000E-4	5.0000E-4	5.0000E-4	8.8500E-4	0.001	0.00144	0.00203	0.00217
168	Fluoride (m-56a)		19	1	0.4	0.4	0.4	0.4	0.445	0.464	0.552	0.8	0.8
169	Fluoride (m-57a)		19	1	0.4	0.4	0.4	0.4	0.4	0.4	0.442	0.557	0.751
170	Fluoride (m-58a)		19	1	0.4	0.4	0.4	0.4	0.4	0.4	0.504	0.8	0.8
171	Fluoride (m-62a)		19	1	0.4	0.4	0.4	0.4	0.435	0.602	0.8	0.8	0.8
172	Lead (m-56a)		15	5	5.0000E-4	5.0000E-4	5.0000E-4	5.0000E-4	5.0000E-4	6.0000E-4	0.0016	0.0044	0.00888
173	Lead (m-57a)		15	5	5.0000E-4	5.0000E-4	5.0000E-4	5.0000E-4	9.3000E-4	0.001	0.0016	0.0044	0.00888
174	Lead (m-58a)		15	5	5.0000E-4	5.0000E-4	5.0000E-4	5.0000E-4	8.9000E-4	0.00102	0.00164	0.0044	0.00888
175	Lead (m-62a)		15	5	5.0000E-4	5.0000E-4	5.0000E-4	5.0000E-4	7.5000E-4	0.001	0.0016	0.0044	0.00888
176	Lithium (m-56a)		16	4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
177	Lithium (m-57a)		16	4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
178	Lithium (m-58a)		16	4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
179	Lithium (m-62a)		16	4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
180	Mercury (m-56a)		15	5	2.0000E-4	2.0000E-4	2.0000E-4	2.0000E-4	2.0000E-4	2.0000E-4	2.0000E-4	2.0000E-4	2.0000E-4
181	Mercury (m-57a)		15	5	2.0000E-4	2.0000E-4	2.0000E-4	2.0000E-4	2.0000E-4	2.0000E-4	2.0000E-4	2.0000E-4	2.0000E-4
182	Mercury (m-58a)		15	5	2.0000E-4	2.0000E-4	2.0000E-4	2.0000E-4	2.0000E-4	2.0000E-4	2.0000E-4	2.0000E-4	2.0000E-4
183	Mercury (m-62a)		15	5	2.0000E-4	2.0000E-4	2.0000E-4	2.0000E-4	2.0000E-4	2.0000E-4	2.0000E-4	2.0000E-4	2.0000E-4
184	Molybdenum (m-56a)		19	1	0.0078	0.00888	0.00915	0.011	0.0135	0.0148	0.0214	0.0236	0.0279
185	Molybdenum (m-57a)		18	2	0.00281	0.00294	0.00318	0.0044	0.00618	0.0066	0.00786	0.0101	0.0196
186	Molybdenum (m-58a)		18	2	0.00157	0.0017	0.00173	0.0018	0.0022	0.00238	0.00629	0.0115	0.0183
187	Molybdenum (m-62a)		18	2	0.00207	0.0022	0.0022	0.0023	0.0026	0.00272	0.00342	0.00539	0.00988
188	Radium (m-56a)		17	3	0.5	0.6	0.6	0.9	1.5	1.58	1.74	1.82	1.884
189	Radium (m-57a)		17	3	0.56	0.6	0.6	0.7	0.7	0.7	0.98	1.18	1.436
190	Radium (m-58a)		17	3	0.6	0.7	0.7	0.7	0.9	1.14	2.02	2.28	2.536
191	Radium (m-62a)		16	4	0.6	0.7	0.7	0.9	1.225	1.3	1.45	1.625	1.925
192	Selenium (m-56a)		15	5	5.0000E-4	5.0000E-4	5.0000E-4	5.0000E-4	6.1000E-4	6.9600E-4	0.0016	0.0044	0.00888
193	Selenium (m-57a)		15	5	5.0000E-4	5.0000E-4	5.0000E-4	5.0000E-4	8.4500E-4	0.001	0.0016	0.0044	0.00888
194	Selenium (m-58a)		15	5	5.0000E-4	5.0000E-4	5.0000E-4	5.0000E-4	8.0000E-4	0.001	0.0016	0.0044	0.00888
195	Selenium (m-62a)		15	5	5.0000E-4	5.0000E-4	5.0000E-4	5.0000E-4	8.9000E-4	0.001	0.0016	0.0044	0.00888
196	Thallium (m-56a)		19	1	1.0000E-4	1.0000E-4	1.0000E-4	1.0000E-4	1.0000E-4	1.0800E-4	2.4000E-4	5.6000E-4	0.00171
197	Thallium (m-57a)		19	1	1.0000E-4	1.0000E-4	1.0000E-4	1.0000E-4	1.0000E-4	1.4000E-4	2.4000E-4	5.6000E-4	0.00171
198	Thallium (m-58a)		19	1	1.0000E-4	1.0000E-4	1.0000E-4	1.0000E-4	1.0000E-4	1.4000E-4	2.4000E-4	5.6000E-4	0.00171
199	Thallium (m-62a)		18	2	1.0000E-4	1.0000E-4	1.0000E-4	1.0000E-4	1.0000E-4	1.6000E-4	2.6000E-4	4.1500E-4	4.8300E-4

	A	B	C	D	E	F	G	H	I	J	K	L
1				Goodness-of-Fit Test Statistics for Data Sets with Non-Detects								
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.14/11/2020 11:07:05 PM								
4	From File			SEDIPond_Cholla_AssessMonNov2019_NoDups.xls								
5	Full Precision			OFF								
6	Confidence Coefficient			0.95								
7												
8												
9	Antimony (m-56a)											
10												
11				Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs			
12	Raw Statistics			20	5	15	1	14	93.33%			
13												
14	Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!											
15	It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).											
16												
17	The data set for variable Antimony (m-56a) was not processed!											
18												
19												
20												
21	Antimony (m-57a)											
22												
23				Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs			
24	Raw Statistics			20	5	15	1	14	93.33%			
25												
26	Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!											
27	It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).											
28												
29	The data set for variable Antimony (m-57a) was not processed!											
30												
31												
32												
33	Antimony (m-58a)											
34												
35				Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs			
36	Raw Statistics			20	5	15	0	15	100.00%			
37												
38	Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!											
39	Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!											
40	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).											
41												
42	The data set for variable Antimony (m-58a) was not processed!											
43												
44												
45												
46	Antimony (m-62a)											
47												
48				Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs			
49	Raw Statistics			20	5	15	0	15	100.00%			
50												

	A	B	C	D	E	F	G	H	I	J	K	L
51	Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!											
52	Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!											
53	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).											
54												
55	The data set for variable Antimony (m-62a) was not processed!											
56												
57												
58												
59	Arsenic (m-56a)											
60												
61					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
62	Raw Statistics				20	2	18	13	5	27.78%		
63												
64					Number	Minimum	Maximum	Mean	Median	SD		
65	Statistics (Non-Detects Only)				5	0.001	0.01	0.00452	0.002	0.00437		
66	Statistics (Non-Detects Only)				13	6.0000E-4	0.0082	0.00146	8.1000E-4	0.00206		
67	Statistics (All: NDs treated as DL value)				18	6.0000E-4	0.01	0.00231	8.8000E-4	0.00308		
68	Statistics (All: NDs treated as DL/2 value)				18	5.0000E-4	0.0082	0.00168	8.1500E-4	0.00206		
69	Statistics (Normal ROS Imputed Data)				18	6.0000E-4	0.0082	0.00138	8.8000E-4	0.00173		
70	Statistics (Gamma ROS Imputed Data)				18	6.0000E-4	0.01	0.00383	8.8000E-4	0.0043		
71	Statistics (Lognormal ROS Imputed Data)				18	6.0000E-4	0.0082	0.0013	8.2241E-4	0.00175		
72												
73					K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
74	Statistics (Non-Detects Only)				1.502	1.206	9.6975E-4	-6.901	0.702	-0.102		
75	Statistics (NDs = DL)				1.061	0.921	0.00217	-6.612	0.93	-0.141		
76	Statistics (NDs = DL/2)				1.347	1.159	0.00125	-6.804	0.813	-0.12		
77	Statistics (Gamma ROS Estimates)				0.844	0.741	0.00453	-6.263	1.211	-0.193		
78	Statistics (Lognormal ROS Estimates)				--	--	--	-6.934	0.594	-0.0856		
79												
80	Normal GOF Test Results											
81												
82					No NDs	NDs = DL	NDs = DL/2	Normal ROS				
83	Correlation Coefficient R				0.634	0.756	0.761	0.617				
84												
85					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
86	Shapiro-Wilk (Detects Only)				0.433	0.866	Data Not Normal					
87	Shapiro-Wilk (NDs = DL)				0.574	0.897	Data Not Normal					
88	Shapiro-Wilk (NDs = DL/2)				0.594	0.897	Data Not Normal					
89	Shapiro-Wilk (Normal ROS Estimates)				0.411	0.897	Data Not Normal					
90	Lilliefors (Detects Only)				0.376	0.234	Data Not Normal					
91	Lilliefors (NDs = DL)				0.373	0.202	Data Not Normal					
92	Lilliefors (NDs = DL/2)				0.351	0.202	Data Not Normal					
93	Lilliefors (Normal ROS Estimates)				0.398	0.202	Data Not Normal					
94												
95	Gamma GOF Test Results											
96												
97					No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
98	Correlation Coefficient R				0.818	0.908	0.927	0.84				
99												
100					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					

	A	B	C	D	E	F	G	H	I	J	K	L	
101	Anderson-Darling (Detects Only)				2.366	0.75							
102	Kolmogorov-Smirnov (Detects Only)				0.359	0.241	Data Not Gamma Distributed						
103	Anderson-Darling (NDs = DL)				2.662	0.765							
104	Kolmogorov-Smirnov (NDs = DL)				0.302	0.209	Data Not Gamma Distributed						
105	Anderson-Darling (NDs = DL/2)				2.3	0.759							
106	Kolmogorov-Smirnov (NDs = DL/2)				0.322	0.208	Data Not Gamma Distributed						
107	Anderson-Darling (Gamma ROS Estimates)				2.473	0.774							
108	Kolmogorov-Smirnov (Gamma ROS Est.)				0.302	0.211	Data Not Gamma Distributed						
109													
110	Lognormal GOF Test Results												
111													
112					No NDs	NDs = DL	NDs = DL/2	Log ROS					
113	Correlation Coefficient R				0.799	0.867	0.886	0.771					
114													
115					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)						
116	Shapiro-Wilk (Detects Only)				0.662	0.866	Data Not Lognormal						
117	Shapiro-Wilk (NDs = DL)				0.744	0.897	Data Not Lognormal						
118	Shapiro-Wilk (NDs = DL/2)				0.785	0.897	Data Not Lognormal						
119	Shapiro-Wilk (Lognormal ROS Estimates)				0.622	0.897	Data Not Lognormal						
120	Lilliefors (Detects Only)				0.315	0.234	Data Not Lognormal						
121	Lilliefors (NDs = DL)				0.252	0.202	Data Not Lognormal						
122	Lilliefors (NDs = DL/2)				0.273	0.202	Data Not Lognormal						
123	Lilliefors (Lognormal ROS Estimates)				0.345	0.202	Data Not Lognormal						
124													
125	Note: Substitution methods such as DL or DL/2 are not recommended.												
126													
127	Arsenic (m-57a)												
128													
129					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs			
130	Raw Statistics				20	2	18	17	1	5.56%			
131													
132					Number	Minimum	Maximum	Mean	Median	SD			
133	Statistics (Non-Detects Only)				1	0.0019	0.0019	0.0019	0.0019	N/A			
134	Statistics (Non-Detects Only)				17	0.0017	0.0098	0.00396	0.0038	0.00212			
135	Statistics (All: NDs treated as DL value)				18	0.0017	0.0098	0.00385	0.00325	0.00211			
136	Statistics (All: NDs treated as DL/2 value)				18	9.5000E-4	0.0098	0.0038	0.00325	0.00217			
137	Statistics (Normal ROS Imputed Data)				18	9.2247E-5	0.0098	0.00375	0.00325	0.00225			
138	Statistics (Gamma ROS Imputed Data)				18	0.0017	0.01	0.0043	0.00385	0.0025			
139	Statistics (Lognormal ROS Imputed Data)				18	0.00136	0.0098	0.00382	0.00325	0.00214			
140													
141					K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV			
142	Statistics (Non-Detects Only)				4.435	3.691	8.9405E-4	-5.647	0.488	-0.0865			
143	Statistics (NDs = DL)				4.259	3.586	9.0403E-4	-5.682	0.496	-0.0872			
144	Statistics (NDs = DL/2)				3.567	3.009	0.00106	-5.72	0.566	-0.0989			
145	Statistics (Gamma ROS Estimates)				3.723	3.14	0.00115	-5.589	0.534	-0.0955			
146	Statistics (Lognormal ROS Estimates)				--	--	--	-5.7	0.524	-0.0919			
147													
148	Normal GOF Test Results												
149													
150					No NDs	NDs = DL	NDs = DL/2	Normal ROS					

	A	B	C	D	E	F	G	H	I	J	K	L
151	Correlation Coefficient R				0.928	0.922	0.942	0.953				
152												
153					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
154	Shapiro-Wilk (Detects Only)				0.867	0.892	Data Not Normal					
155	Shapiro-Wilk (NDs = DL)				0.856	0.897	Data Not Normal					
156	Shapiro-Wilk (NDs = DL/2)				0.896	0.897	Data Not Normal					
157	Shapiro-Wilk (Normal ROS Estimates)				0.923	0.897	Data Appear Normal					
158	Lilliefors (Detects Only)				0.195	0.207	Data Appear Normal					
159	Lilliefors (NDs = DL)				0.207	0.202	Data Not Normal					
160	Lilliefors (NDs = DL/2)				0.193	0.202	Data Appear Normal					
161	Lilliefors (Normal ROS Estimates)				0.18	0.202	Data Appear Normal					
162												
163	Gamma GOF Test Results											
164												
165					No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
166	Correlation Coefficient R				0.98	0.978	0.987	0.973				
167												
168					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
169	Anderson-Darling (Detects Only)				0.383	0.742						
170	Kolmogorov-Smirnov (Detects Only)				0.195	0.21	Detected Data Appear Gamma Distributed					
171	Anderson-Darling (NDs = DL)				0.457	0.743						
172	Kolmogorov-Smirnov (NDs = DL)				0.2	0.204	Data Appear Gamma Distributed					
173	Anderson-Darling (NDs = DL/2)				0.242	0.744						
174	Kolmogorov-Smirnov (NDs = DL/2)				0.165	0.205	Data Appear Gamma Distributed					
175	Anderson-Darling (Gamma ROS Estimates)				0.483	0.743						
176	Kolmogorov-Smirnov (Gamma ROS Est.)				0.188	0.205	Data Appear Gamma Distributed					
177												
178	Lognormal GOF Test Results											
179												
180					No NDs	NDs = DL	NDs = DL/2	Log ROS				
181	Correlation Coefficient R				0.984	0.979	0.989	0.991				
182												
183					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
184	Shapiro-Wilk (Detects Only)				0.962	0.892	Data Appear Lognormal					
185	Shapiro-Wilk (NDs = DL)				0.951	0.897	Data Appear Lognormal					
186	Shapiro-Wilk (NDs = DL/2)				0.984	0.897	Data Appear Lognormal					
187	Shapiro-Wilk (Lognormal ROS Estimates)				0.978	0.897	Data Appear Lognormal					
188	Lilliefors (Detects Only)				0.179	0.207	Data Appear Lognormal					
189	Lilliefors (NDs = DL)				0.181	0.202	Data Appear Lognormal					
190	Lilliefors (NDs = DL/2)				0.134	0.202	Data Appear Lognormal					
191	Lilliefors (Lognormal ROS Estimates)				0.159	0.202	Data Appear Lognormal					
192												
193	Note: Substitution methods such as DL or DL/2 are not recommended.											
194												
195	Arsenic (m-58a)											
196												
197					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
198	Raw Statistics				20	2	18	15	3	16.67%		
199												
200					Number	Minimum	Maximum	Mean	Median	SD		

	A	B	C	D	E	F	G	H	I	J	K	L
201	Statistics (Non-Detects Only)				3	0.0038	0.01	0.0059	0.0039	0.00355		
202	Statistics (Non-Detects Only)				15	0.0025	0.0057	0.004	0.004	9.0159E-4		
203	Statistics (All: NDs treated as DL value)				18	0.0025	0.01	0.00432	0.00395	0.00164		
204	Statistics (All: NDs treated as DL/2 value)				18	0.0019	0.0057	0.00383	0.00395	0.0011		
205	Statistics (Normal ROS Imputed Data)				18	0.0025	0.0057	0.0039	0.0039	8.6097E-4		
206	Statistics (Gamma ROS Imputed Data)				18	0.0025	0.01	0.005	0.00425	0.00244		
207	Statistics (Lognormal ROS Imputed Data)				18	0.0025	0.0057	0.00389	0.00385	8.6406E-4		
208												
209					K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
210	Statistics (Non-Detects Only)				20.14	16.15	1.9863E-4	-5.546	0.236	-0.0425		
211	Statistics (NDs = DL)				10.08	8.44	4.2807E-4	-5.496	0.308	-0.0561		
212	Statistics (NDs = DL/2)				11.27	9.433	3.3925E-4	-5.611	0.322	-0.0574		
213	Statistics (Gamma ROS Estimates)				5.638	4.736	8.8677E-4	-5.39	0.42	-0.0778		
214	Statistics (Lognormal ROS Estimates)				--	--	--	-5.572	0.225	-0.0403		
215												
216	Normal GOF Test Results											
217												
218					No NDs	NDs = DL	NDs = DL/2	Normal ROS				
219	Correlation Coefficient R				0.995	0.845	0.989	0.992				
220												
221					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
222	Shapiro-Wilk (Detects Only)				0.984	0.881	Data Appear Normal					
223	Shapiro-Wilk (NDs = DL)				0.741	0.897	Data Not Normal					
224	Shapiro-Wilk (NDs = DL/2)				0.968	0.897	Data Appear Normal					
225	Shapiro-Wilk (Normal ROS Estimates)				0.98	0.897	Data Appear Normal					
226	Lilliefors (Detects Only)				0.103	0.22	Data Appear Normal					
227	Lilliefors (NDs = DL)				0.217	0.202	Data Not Normal					
228	Lilliefors (NDs = DL/2)				0.121	0.202	Data Appear Normal					
229	Lilliefors (Normal ROS Estimates)				0.126	0.202	Data Appear Normal					
230												
231	Gamma GOF Test Results											
232												
233					No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
234	Correlation Coefficient R				0.991	0.894	0.97	0.92				
235												
236					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
237	Anderson-Darling (Detects Only)				0.193	0.735						
238	Kolmogorov-Smirnov (Detects Only)				0.127	0.221	Detected Data Appear Gamma Distributed					
239	Anderson-Darling (NDs = DL)				0.72	0.739						
240	Kolmogorov-Smirnov (NDs = DL)				0.161	0.203	Data Appear Gamma Distributed					
241	Anderson-Darling (NDs = DL/2)				0.415	0.739						
242	Kolmogorov-Smirnov (NDs = DL/2)				0.162	0.203	Data Appear Gamma Distributed					
243	Anderson-Darling (Gamma ROS Estimates)				1.1	0.743						
244	Kolmogorov-Smirnov (Gamma ROS Est.)				0.204	0.204	Data Not Gamma Distributed					
245												
246	Lognormal GOF Test Results											
247												
248					No NDs	NDs = DL	NDs = DL/2	Log ROS				
249	Correlation Coefficient R				0.987	0.945	0.965	0.994				
250												

	A	B	C	D	E	F	G	H	I	J	K	L		
251					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)							
252	Shapiro-Wilk (Detects Only)				0.968	0.881	Data Appear Lognormal							
253	Shapiro-Wilk (NDs = DL)				0.911	0.897	Data Appear Lognormal							
254	Shapiro-Wilk (NDs = DL/2)				0.922	0.897	Data Appear Lognormal							
255	Shapiro-Wilk (Lognormal ROS Estimates)				0.982	0.897	Data Appear Lognormal							
256	Lilliefors (Detects Only)				0.144	0.22	Data Appear Lognormal							
257	Lilliefors (NDs = DL)				0.146	0.202	Data Appear Lognormal							
258	Lilliefors (NDs = DL/2)				0.181	0.202	Data Appear Lognormal							
259	Lilliefors (Lognormal ROS Estimates)				0.118	0.202	Data Appear Lognormal							
260														
261	Note: Substitution methods such as DL or DL/2 are not recommended.													
262														
263	Arsenic (m-62a)													
264														
265					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs				
266	Raw Statistics				20	2	18	15	3	16.67%				
267														
268					Number	Minimum	Maximum	Mean	Median	SD				
269	Statistics (Non-Detects Only)				3	0.0031	0.01	0.00547	0.0033	0.00393				
270	Statistics (Non-Detects Only)				15	0.0016	0.0031	0.00253	0.0028	5.3541E-4				
271	Statistics (All: NDs treated as DL value)				18	0.0016	0.01	0.00302	0.0029	0.00182				
272	Statistics (All: NDs treated as DL/2 value)				18	0.00155	0.005	0.00257	0.0027	8.3402E-4				
273	Statistics (Normal ROS Imputed Data)				18	0.0016	0.0031	0.00253	0.00256	4.8647E-4				
274	Statistics (Gamma ROS Imputed Data)				18	0.0016	0.01	0.00378	0.0029	0.0029				
275	Statistics (Lognormal ROS Imputed Data)				18	0.0016	0.0031	0.00252	0.00253	4.8782E-4				
276														
277					K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV				
278	Statistics (Non-Detects Only)				21.55	17.28	1.1755E-4	-6.002	0.23	-0.0384				
279	Statistics (NDs = DL)				5.494	4.616	5.5008E-4	-5.896	0.393	-0.0666				
280	Statistics (NDs = DL/2)				11.06	9.252	2.3211E-4	-6.011	0.309	-0.0513				
281	Statistics (Gamma ROS Estimates)				2.784	2.357	0.00136	-5.769	0.575	-0.0997				
282	Statistics (Lognormal ROS Estimates)				--	--	--	-6.005	0.209	-0.0349				
283														
284	Normal GOF Test Results													
285														
286					No NDs	NDs = DL	NDs = DL/2	Normal ROS						
287	Correlation Coefficient R				0.941	0.699	0.92	0.962						
288														
289					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)							
290	Shapiro-Wilk (Detects Only)				0.865	0.881	Data Not Normal							
291	Shapiro-Wilk (NDs = DL)				0.522	0.897	Data Not Normal							
292	Shapiro-Wilk (NDs = DL/2)				0.858	0.897	Data Not Normal							
293	Shapiro-Wilk (Normal ROS Estimates)				0.91	0.897	Data Appear Normal							
294	Lilliefors (Detects Only)				0.224	0.22	Data Not Normal							
295	Lilliefors (NDs = DL)				0.384	0.202	Data Not Normal							
296	Lilliefors (NDs = DL/2)				0.206	0.202	Data Not Normal							
297	Lilliefors (Normal ROS Estimates)				0.168	0.202	Data Appear Normal							
298														
299	Gamma GOF Test Results													
300														

	A	B	C	D	E	F	G	H	I	J	K	L
301					No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
302	Correlation Coefficient R				0.914	0.776	0.941	0.865				
303												
304					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
305	Anderson-Darling (Detects Only)				0.949	0.735						
306	Kolmogorov-Smirnov (Detects Only)				0.24	0.221	Data Not Gamma Distributed					
307	Anderson-Darling (NDs = DL)				1.787	0.743						
308	Kolmogorov-Smirnov (NDs = DL)				0.309	0.204	Data Not Gamma Distributed					
309	Anderson-Darling (NDs = DL/2)				0.653	0.739						
310	Kolmogorov-Smirnov (NDs = DL/2)				0.172	0.203	Data Appear Gamma Distributed					
311	Anderson-Darling (Gamma ROS Estimates)				2.321	0.747						
312	Kolmogorov-Smirnov (Gamma ROS Est.)				0.379	0.205	Data Not Gamma Distributed					
313												
314	Lognormal GOF Test Results											
315												
316					No NDs	NDs = DL	NDs = DL/2	Log ROS				
317	Correlation Coefficient R				0.931	0.865	0.957	0.952				
318												
319					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
320	Shapiro-Wilk (Detects Only)				0.849	0.881	Data Not Lognormal					
321	Shapiro-Wilk (NDs = DL)				0.776	0.897	Data Not Lognormal					
322	Shapiro-Wilk (NDs = DL/2)				0.916	0.897	Data Appear Lognormal					
323	Shapiro-Wilk (Lognormal ROS Estimates)				0.894	0.897	Data Not Lognormal					
324	Lilliefors (Detects Only)				0.237	0.22	Data Not Lognormal					
325	Lilliefors (NDs = DL)				0.27	0.202	Data Not Lognormal					
326	Lilliefors (NDs = DL/2)				0.168	0.202	Data Appear Lognormal					
327	Lilliefors (Lognormal ROS Estimates)				0.172	0.202	Data Appear Lognormal					
328												
329	Note: Substitution methods such as DL or DL/2 are not recommended.											
330												
331	Barium (m-56a)											
332												
333					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
334	Raw Statistics				20	2	18	16	2	11.11%		
335												
336					Number	Minimum	Maximum	Mean	Median	SD		
337	Statistics (Non-Detects Only)				2	0.055	0.078	0.0665	0.0665	0.0163		
338	Statistics (Non-Detects Only)				16	0.061	0.086	0.0723	0.0705	0.00775		
339	Statistics (All: NDs treated as DL value)				18	0.055	0.086	0.0717	0.0705	0.00849		
340	Statistics (All: NDs treated as DL/2 value)				18	0.0275	0.086	0.068	0.07	0.0147		
341	Statistics (Normal ROS Imputed Data)				18	0.0538	0.086	0.0711	0.07	0.00851		
342	Statistics (Gamma ROS Imputed Data)				18	0.055	0.086	0.0711	0.07	0.00837		
343	Statistics (Lognormal ROS Imputed Data)				18	0.0558	0.086	0.0712	0.07	0.00828		
344												
345					K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
346	Statistics (Non-Detects Only)				94.26	76.63	7.6712E-4	-2.632	0.106	-0.0403		
347	Statistics (NDs = DL)				74.25	61.91	9.6523E-4	-2.642	0.12	-0.0455		
348	Statistics (NDs = DL/2)				16.38	13.69	0.00415	-2.719	0.28	-0.103		
349	Statistics (Gamma ROS Estimates)				76.15	63.49	9.3411E-4	-2.65	0.118	-0.0447		
350	Statistics (Lognormal ROS Estimates)				--	--	--	-2.649	0.117	-0.044		

	A	B	C	D	E	F	G	H	I	J	K	L
351												
352	Normal GOF Test Results											
353												
354					No NDs	NDs = DL	NDs = DL/2	Normal ROS				
355	Correlation Coefficient R				0.982	0.994	0.916	0.989				
356												
357					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
358	Shapiro-Wilk (Detects Only)				0.951	0.887	Data Appear Normal					
359	Shapiro-Wilk (NDs = DL)				0.983	0.897	Data Appear Normal					
360	Shapiro-Wilk (NDs = DL/2)				0.849	0.897	Data Not Normal					
361	Shapiro-Wilk (Normal ROS Estimates)				0.975	0.897	Data Appear Normal					
362	Lilliefors (Detects Only)				0.13	0.213	Data Appear Normal					
363	Lilliefors (NDs = DL)				0.0868	0.202	Data Appear Normal					
364	Lilliefors (NDs = DL/2)				0.207	0.202	Data Not Normal					
365	Lilliefors (Normal ROS Estimates)				0.114	0.202	Data Appear Normal					
366												
367	Gamma GOF Test Results											
368												
369					No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
370	Correlation Coefficient R				0.984	0.992	0.881	0.989				
371												
372					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
373	Anderson-Darling (Detects Only)				0.279	0.736						
374	Kolmogorov-Smirnov (Detects Only)				0.126	0.214	Detected Data Appear Gamma Distributed					
375	Anderson-Darling (NDs = DL)				0.14	0.738						
376	Kolmogorov-Smirnov (NDs = DL)				0.0898	0.203	Data Appear Gamma Distributed					
377	Anderson-Darling (NDs = DL/2)				1.472	0.739						
378	Kolmogorov-Smirnov (NDs = DL/2)				0.253	0.203	Data Not Gamma Distributed					
379	Anderson-Darling (Gamma ROS Estimates)				0.205	0.738						
380	Kolmogorov-Smirnov (Gamma ROS Est.)				0.107	0.203	Data Appear Gamma Distributed					
381												
382	Lognormal GOF Test Results											
383												
384					No NDs	NDs = DL	NDs = DL/2	Log ROS				
385	Correlation Coefficient R				0.987	0.992	0.845	0.991				
386												
387					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
388	Shapiro-Wilk (Detects Only)				0.96	0.887	Data Appear Lognormal					
389	Shapiro-Wilk (NDs = DL)				0.98	0.897	Data Appear Lognormal					
390	Shapiro-Wilk (NDs = DL/2)				0.73	0.897	Data Not Lognormal					
391	Shapiro-Wilk (Lognormal ROS Estimates)				0.978	0.897	Data Appear Lognormal					
392	Lilliefors (Detects Only)				0.118	0.213	Data Appear Lognormal					
393	Lilliefors (NDs = DL)				0.081	0.202	Data Appear Lognormal					
394	Lilliefors (NDs = DL/2)				0.28	0.202	Data Not Lognormal					
395	Lilliefors (Lognormal ROS Estimates)				0.1	0.202	Data Appear Lognormal					
396												
397	Note: Substitution methods such as DL or DL/2 are not recommended.											
398												
399	Barium (m-57a)											
400												

	A	B	C	D	E	F	G	H	I	J	K	L
401					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
402	Raw Statistics				20	2	18	17	1	5.56%		
403												
404					Number	Minimum	Maximum	Mean	Median	SD		
405	Statistics (Non-Detects Only)				1	0.039	0.039	0.039	0.039	N/A		
406	Statistics (Non-Detects Only)				17	0.038	0.072	0.0468	0.043	0.00892		
407	Statistics (All: NDs treated as DL value)				18	0.038	0.072	0.0463	0.043	0.00885		
408	Statistics (All: NDs treated as DL/2 value)				18	0.0195	0.072	0.0453	0.043	0.0108		
409	Statistics (Normal ROS Imputed Data)				18	0.0316	0.072	0.0459	0.043	0.00936		
410	Statistics (Gamma ROS Imputed Data)				18	0.0323	0.072	0.046	0.043	0.00931		
411	Statistics (Lognormal ROS Imputed Data)				18	0.0342	0.072	0.0461	0.043	0.00915		
412												
413					K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
414	Statistics (Non-Detects Only)				34.6	28.53	0.00135	-3.077	0.169	-0.0548		
415	Statistics (NDs = DL)				34.57	28.84	0.00134	-3.086	0.168	-0.0546		
416	Statistics (NDs = DL/2)				17.18	14.35	0.00263	-3.125	0.261	-0.0834		
417	Statistics (Gamma ROS Estimates)				29.64	24.74	0.00155	-3.097	0.184	-0.0594		
418	Statistics (Lognormal ROS Estimates)				--	--	--	-3.094	0.178	-0.0576		
419												
420	Normal GOF Test Results											
421												
422					No NDs	NDs = DL	NDs = DL/2	Normal ROS				
423	Correlation Coefficient R				0.862	0.862	0.907	0.9				
424												
425					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
426	Shapiro-Wilk (Detects Only)				0.754	0.892	Data Not Normal					
427	Shapiro-Wilk (NDs = DL)				0.755	0.897	Data Not Normal					
428	Shapiro-Wilk (NDs = DL/2)				0.853	0.897	Data Not Normal					
429	Shapiro-Wilk (Normal ROS Estimates)				0.828	0.897	Data Not Normal					
430	Lilliefors (Detects Only)				0.284	0.207	Data Not Normal					
431	Lilliefors (NDs = DL)				0.282	0.202	Data Not Normal					
432	Lilliefors (NDs = DL/2)				0.236	0.202	Data Not Normal					
433	Lilliefors (Normal ROS Estimates)				0.261	0.202	Data Not Normal					
434												
435	Gamma GOF Test Results											
436												
437					No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
438	Correlation Coefficient R				0.895	0.896	0.922	0.925				
439												
440					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
441	Anderson-Darling (Detects Only)				1.493	0.737						
442	Kolmogorov-Smirnov (Detects Only)				0.273	0.209	Data Not Gamma Distributed					
443	Anderson-Darling (NDs = DL)				1.507	0.739						
444	Kolmogorov-Smirnov (NDs = DL)				0.268	0.203	Data Not Gamma Distributed					
445	Anderson-Darling (NDs = DL/2)				1.344	0.739						
446	Kolmogorov-Smirnov (NDs = DL/2)				0.263	0.203	Data Not Gamma Distributed					
447	Anderson-Darling (Gamma ROS Estimates)				1.141	0.739						
448	Kolmogorov-Smirnov (Gamma ROS Est.)				0.243	0.203	Data Not Gamma Distributed					
449												
450	Lognormal GOF Test Results											

	A	B	C	D	E	F	G	H	I	J	K	L
451												
452					No NDs	NDs = DL	NDs = DL/2	Log ROS				
453	Correlation Coefficient R				0.894	0.897	0.873	0.926				
454												
455					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
456	Shapiro-Wilk (Detects Only)				0.808	0.892	Data Not Lognormal					
457	Shapiro-Wilk (NDs = DL)				0.812	0.897	Data Not Lognormal					
458	Shapiro-Wilk (NDs = DL/2)				0.798	0.897	Data Not Lognormal					
459	Shapiro-Wilk (Lognormal ROS Estimates)				0.87	0.897	Data Not Lognormal					
460	Lilliefors (Detects Only)				0.262	0.207	Data Not Lognormal					
461	Lilliefors (NDs = DL)				0.257	0.202	Data Not Lognormal					
462	Lilliefors (NDs = DL/2)				0.284	0.202	Data Not Lognormal					
463	Lilliefors (Lognormal ROS Estimates)				0.239	0.202	Data Not Lognormal					
464												
465	Note: Substitution methods such as DL or DL/2 are not recommended.											
466												
467	Barium (m-58a)											
468												
469					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
470	Raw Statistics				20	2	18	16	2	11.11%		
471												
472					Number	Minimum	Maximum	Mean	Median	SD		
473	Statistics (Non-Detects Only)				2	0.059	0.066	0.0625	0.0625	0.00495		
474	Statistics (Non-Detects Only)				16	0.043	0.11	0.0706	0.0675	0.0196		
475	Statistics (All: NDs treated as DL value)				18	0.043	0.11	0.0697	0.065	0.0186		
476	Statistics (All: NDs treated as DL/2 value)				18	0.0295	0.11	0.0663	0.0635	0.0224		
477	Statistics (Normal ROS Imputed Data)				18	0.043	0.11	0.0686	0.0635	0.0193		
478	Statistics (Gamma ROS Imputed Data)				18	0.043	0.11	0.0686	0.0635	0.0193		
479	Statistics (Lognormal ROS Imputed Data)				18	0.043	0.11	0.0687	0.0635	0.0193		
480												
481					K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
482	Statistics (Non-Detects Only)				14.29	11.65	0.00494	-2.686	0.275	-0.102		
483	Statistics (NDs = DL)				15.62	13.05	0.00446	-2.696	0.26	-0.0965		
484	Statistics (NDs = DL/2)				8.742	7.322	0.00758	-2.773	0.362	-0.13		
485	Statistics (Gamma ROS Estimates)				14.18	11.85	0.00484	-2.715	0.272	-0.1		
486	Statistics (Lognormal ROS Estimates)				--	--	--	-2.714	0.271	-0.0999		
487												
488	Normal GOF Test Results											
489												
490					No NDs	NDs = DL	NDs = DL/2	Normal ROS				
491	Correlation Coefficient R				0.979	0.975	0.991	0.969				
492												
493					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
494	Shapiro-Wilk (Detects Only)				0.951	0.887	Data Appear Normal					
495	Shapiro-Wilk (NDs = DL)				0.946	0.897	Data Appear Normal					
496	Shapiro-Wilk (NDs = DL/2)				0.976	0.897	Data Appear Normal					
497	Shapiro-Wilk (Normal ROS Estimates)				0.931	0.897	Data Appear Normal					
498	Lilliefors (Detects Only)				0.133	0.213	Data Appear Normal					
499	Lilliefors (NDs = DL)				0.135	0.202	Data Appear Normal					
500	Lilliefors (NDs = DL/2)				0.0956	0.202	Data Appear Normal					

	A	B	C	D	E	F	G	H	I	J	K	L
501	Lilliefors (Normal ROS Estimates)				0.151	0.202	Data Appear Normal					
502												
503	Gamma GOF Test Results											
504												
505					No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
506	Correlation Coefficient R				0.989	0.989	0.99	0.985				
507												
508					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
509	Anderson-Darling (Detects Only)				0.22	0.738						
510	Kolmogorov-Smirnov (Detects Only)				0.109	0.215	Detected Data Appear Gamma Distributed					
511	Anderson-Darling (NDs = DL)				0.224	0.739						
512	Kolmogorov-Smirnov (NDs = DL)				0.107	0.203	Data Appear Gamma Distributed					
513	Anderson-Darling (NDs = DL/2)				0.169	0.74						
514	Kolmogorov-Smirnov (NDs = DL/2)				0.0976	0.204	Data Appear Gamma Distributed					
515	Anderson-Darling (Gamma ROS Estimates)				0.336	0.739						
516	Kolmogorov-Smirnov (Gamma ROS Est.)				0.146	0.203	Data Appear Gamma Distributed					
517												
518	Lognormal GOF Test Results											
519												
520					No NDs	NDs = DL	NDs = DL/2	Log ROS				
521	Correlation Coefficient R				0.991	0.992	0.986	0.987				
522												
523					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
524	Shapiro-Wilk (Detects Only)				0.973	0.887	Data Appear Lognormal					
525	Shapiro-Wilk (NDs = DL)				0.978	0.897	Data Appear Lognormal					
526	Shapiro-Wilk (NDs = DL/2)				0.967	0.897	Data Appear Lognormal					
527	Shapiro-Wilk (Lognormal ROS Estimates)				0.964	0.897	Data Appear Lognormal					
528	Lilliefors (Detects Only)				0.0953	0.213	Data Appear Lognormal					
529	Lilliefors (NDs = DL)				0.09	0.202	Data Appear Lognormal					
530	Lilliefors (NDs = DL/2)				0.12	0.202	Data Appear Lognormal					
531	Lilliefors (Lognormal ROS Estimates)				0.136	0.202	Data Appear Lognormal					
532												
533	Note: Substitution methods such as DL or DL/2 are not recommended.											
534												
535	Barium (m-62a)											
536												
537					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
538	Raw Statistics				20	2	18	16	2	11.11%		
539												
540					Number	Minimum	Maximum	Mean	Median	SD		
541	Statistics (Non-Detects Only)				2	0.067	0.068	0.0675	0.0675	7.0711E-4		
542	Statistics (Non-Detects Only)				16	0.064	0.16	0.0808	0.0755	0.0217		
543	Statistics (All: NDs treated as DL value)				18	0.064	0.16	0.0793	0.075	0.0209		
544	Statistics (All: NDs treated as DL/2 value)				18	0.0335	0.16	0.0756	0.075	0.0255		
545	Statistics (Normal ROS Imputed Data)				18	0.0521	0.16	0.0776	0.075	0.0224		
546	Statistics (Gamma ROS Imputed Data)				18	0.0533	0.16	0.0778	0.075	0.0223		
547	Statistics (Lognormal ROS Imputed Data)				18	0.0588	0.16	0.0784	0.075	0.0216		
548												
549					K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
550	Statistics (Non-Detects Only)				22	17.92	0.00367	-2.539	0.201	-0.0791		

	A	B	C	D	E	F	G	H	I	J	K	L
551	Statistics (NDs = DL)				23.01	19.21	0.00345	-2.556	0.195	-0.0764		
552	Statistics (NDs = DL/2)				10.07	8.428	0.00751	-2.633	0.333	-0.127		
553	Statistics (Gamma ROS Estimates)				18	15.04	0.00432	-2.582	0.227	-0.0881		
554	Statistics (Lognormal ROS Estimates)				--	--	--	-2.571	0.211	-0.0822		
555												
556	Normal GOF Test Results											
557												
558					No NDs	NDs = DL	NDs = DL/2	Normal ROS				
559	Correlation Coefficient R				0.683	0.687	0.814	0.765				
560												
561					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
562	Shapiro-Wilk (Detects Only)				0.501	0.887	Data Not Normal					
563	Shapiro-Wilk (NDs = DL)				0.505	0.897	Data Not Normal					
564	Shapiro-Wilk (NDs = DL/2)				0.699	0.897	Data Not Normal					
565	Shapiro-Wilk (Normal ROS Estimates)				0.62	0.897	Data Not Normal					
566	Lilliefors (Detects Only)				0.379	0.213	Data Not Normal					
567	Lilliefors (NDs = DL)				0.356	0.202	Data Not Normal					
568	Lilliefors (NDs = DL/2)				0.315	0.202	Data Not Normal					
569	Lilliefors (Normal ROS Estimates)				0.332	0.202	Data Not Normal					
570												
571	Gamma GOF Test Results											
572												
573					No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
574	Correlation Coefficient R				0.732	0.735	0.837	0.799				
575												
576					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
577	Anderson-Darling (Detects Only)				2.487	0.736						
578	Kolmogorov-Smirnov (Detects Only)				0.337	0.215	Data Not Gamma Distributed					
579	Anderson-Darling (NDs = DL)				2.473	0.739						
580	Kolmogorov-Smirnov (NDs = DL)				0.309	0.203	Data Not Gamma Distributed					
581	Anderson-Darling (NDs = DL/2)				2.09	0.739						
582	Kolmogorov-Smirnov (NDs = DL/2)				0.272	0.203	Data Not Gamma Distributed					
583	Anderson-Darling (Gamma ROS Estimates)				1.793	0.739						
584	Kolmogorov-Smirnov (Gamma ROS Est.)				0.285	0.203	Data Not Gamma Distributed					
585												
586	Lognormal GOF Test Results											
587												
588					No NDs	NDs = DL	NDs = DL/2	Log ROS				
589	Correlation Coefficient R				0.76	0.771	0.848	0.827				
590												
591					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
592	Shapiro-Wilk (Detects Only)				0.613	0.887	Data Not Lognormal					
593	Shapiro-Wilk (NDs = DL)				0.626	0.897	Data Not Lognormal					
594	Shapiro-Wilk (NDs = DL/2)				0.749	0.897	Data Not Lognormal					
595	Shapiro-Wilk (Lognormal ROS Estimates)				0.715	0.897	Data Not Lognormal					
596	Lilliefors (Detects Only)				0.317	0.213	Data Not Lognormal					
597	Lilliefors (NDs = DL)				0.287	0.202	Data Not Lognormal					
598	Lilliefors (NDs = DL/2)				0.28	0.202	Data Not Lognormal					
599	Lilliefors (Lognormal ROS Estimates)				0.272	0.202	Data Not Lognormal					
600												

	A	B	C	D	E	F	G	H	I	J	K	L	
601	Note: Substitution methods such as DL or DL/2 are not recommended.												
602													
603	Beryllium (m-56a)												
604													
605				Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs				
606			Raw Statistics	20	5	15	0	15	100.00%				
607													
608	Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!												
609	Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!												
610	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).												
611													
612	The data set for variable Beryllium (m-56a) was not processed!												
613													
614													
615													
616	Beryllium (m-57a)												
617													
618				Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs				
619			Raw Statistics	20	5	15	0	15	100.00%				
620													
621	Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!												
622	Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!												
623	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).												
624													
625	The data set for variable Beryllium (m-57a) was not processed!												
626													
627													
628													
629	Beryllium (m-58a)												
630													
631				Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs				
632			Raw Statistics	20	5	15	0	15	100.00%				
633													
634	Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!												
635	Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!												
636	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).												
637													
638	The data set for variable Beryllium (m-58a) was not processed!												
639													
640													
641													
642	Beryllium (m-62a)												
643													
644				Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs				
645			Raw Statistics	20	5	15	0	15	100.00%				
646													
647	Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!												
648	Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!												
649	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).												
650													

	A	B	C	D	E	F	G	H	I	J	K	L
651	The data set for variable Beryllium (m-62a) was not processed!											
652												
653												
654												
655	Cadmium (m-56a)											
656												
657				Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs			
658	Raw Statistics			20	5	15	0	15	100.00%			
659												
660	Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!											
661	Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!											
662	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).											
663												
664	The data set for variable Cadmium (m-56a) was not processed!											
665												
666												
667												
668	Cadmium (m-57a)											
669												
670				Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs			
671	Raw Statistics			20	5	15	0	15	100.00%			
672												
673	Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!											
674	Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!											
675	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).											
676												
677	The data set for variable Cadmium (m-57a) was not processed!											
678												
679												
680												
681	Cadmium (m-58a)											
682												
683				Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs			
684	Raw Statistics			20	5	15	0	15	100.00%			
685												
686	Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!											
687	Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!											
688	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).											
689												
690	The data set for variable Cadmium (m-58a) was not processed!											
691												
692												
693												
694	Cadmium (m-62a)											
695												
696				Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs			
697	Raw Statistics			20	5	15	0	15	100.00%			
698												
699	Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!											
700	Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!											

	A	B	C	D	E	F	G	H	I	J	K	L
701	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).											
702												
703	The data set for variable Cadmium (m-62a) was not processed!											
704												
705												
706												
707	Chromium (m-56a)											
708												
709					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
710	Raw Statistics				20	2	18	12	6	33.33%		
711												
712					Number	Minimum	Maximum	Mean	Median	SD		
713	Statistics (Non-Detects Only)				6	5.0000E-4	0.076	0.019	0.007	0.0292		
714	Statistics (Non-Detects Only)				12	5.1000E-4	0.02	0.00611	0.0049	0.00516		
715	Statistics (All: NDs treated as DL value)				18	5.0000E-4	0.076	0.0104	0.0049	0.0175		
716	Statistics (All: NDs treated as DL/2 value)				18	2.5000E-4	0.038	0.00724	0.0048	0.00908		
717	Statistics (Normal ROS Imputed Data)				18	-0.0061	0.02	0.00415	0.00409	0.00558		
718	Statistics (Gamma ROS Imputed Data)				18	5.1000E-4	0.02	0.00741	0.0079	0.00456		
719	Statistics (Lognormal ROS Imputed Data)				18	4.4672E-4	0.02	0.00469	0.00318	0.00468		
720												
721					K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
722	Statistics (Non-Detects Only)				1.585	1.245	0.00385	-5.445	0.968	-0.178		
723	Statistics (NDs = DL)				0.729	0.644	0.0143	-5.39	1.357	-0.252		
724	Statistics (NDs = DL/2)				0.85	0.745	0.00852	-5.621	1.378	-0.245		
725	Statistics (Gamma ROS Estimates)				2.076	1.767	0.00357	-5.165	0.879	-0.17		
726	Statistics (Lognormal ROS Estimates)				--	--	--	-5.809	1.042	-0.179		
727												
728	Normal GOF Test Results											
729												
730					No NDs	NDs = DL	NDs = DL/2	Normal ROS				
731	Correlation Coefficient R				0.899	0.716	0.821	0.941				
732												
733					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
734	Shapiro-Wilk (Detects Only)				0.828	0.859	Data Not Normal					
735	Shapiro-Wilk (NDs = DL)				0.539	0.897	Data Not Normal					
736	Shapiro-Wilk (NDs = DL/2)				0.694	0.897	Data Not Normal					
737	Shapiro-Wilk (Normal ROS Estimates)				0.91	0.897	Data Appear Normal					
738	Lilliefors (Detects Only)				0.204	0.243	Data Appear Normal					
739	Lilliefors (NDs = DL)				0.343	0.202	Data Not Normal					
740	Lilliefors (NDs = DL/2)				0.246	0.202	Data Not Normal					
741	Lilliefors (Normal ROS Estimates)				0.157	0.202	Data Appear Normal					
742												
743	Gamma GOF Test Results											
744												
745					No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
746	Correlation Coefficient R				0.972	0.919	0.97	0.932				
747												
748					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
749	Anderson-Darling (Detects Only)				0.222	0.745						
750	Kolmogorov-Smirnov (Detects Only)				0.121	0.249	Detected Data Appear Gamma Distributed					

	A	B	C	D	E	F	G	H	I	J	K	L	
751	Anderson-Darling (NDs = DL)				0.627	0.78							
752	Kolmogorov-Smirnov (NDs = DL)				0.192	0.212	Data Appear Gamma Distributed						
753	Anderson-Darling (NDs = DL/2)				0.282	0.773							
754	Kolmogorov-Smirnov (NDs = DL/2)				0.107	0.211	Data Appear Gamma Distributed						
755	Anderson-Darling (Gamma ROS Estimates)				0.779	0.752							
756	Kolmogorov-Smirnov (Gamma ROS Est.)				0.204	0.206	Detected Data appear Approximate Gamma Distri						
757													
758	Lognormal GOF Test Results												
759													
760					No NDs	NDs = DL	NDs = DL/2	Log ROS					
761	Correlation Coefficient R				0.963	0.974	0.969	0.981					
762													
763					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)						
764	Shapiro-Wilk (Detects Only)				0.941	0.859	Data Appear Lognormal						
765	Shapiro-Wilk (NDs = DL)				0.946	0.897	Data Appear Lognormal						
766	Shapiro-Wilk (NDs = DL/2)				0.936	0.897	Data Appear Lognormal						
767	Shapiro-Wilk (Lognormal ROS Estimates)				0.957	0.897	Data Appear Lognormal						
768	Lilliefors (Detects Only)				0.161	0.243	Data Appear Lognormal						
769	Lilliefors (NDs = DL)				0.137	0.202	Data Appear Lognormal						
770	Lilliefors (NDs = DL/2)				0.154	0.202	Data Appear Lognormal						
771	Lilliefors (Lognormal ROS Estimates)				0.183	0.202	Data Appear Lognormal						
772													
773	Note: Substitution methods such as DL or DL/2 are not recommended.												
774													
775	Chromium (m-57a)												
776													
777					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs			
778	Raw Statistics				20	2	18	15	3	16.67%			
779													
780					Number	Minimum	Maximum	Mean	Median	SD			
781	Statistics (Non-Detects Only)				3	5.0000E-4	0.038	0.0162	0.01	0.0195			
782	Statistics (Non-Detects Only)				15	6.6000E-4	0.045	0.019	0.016	0.0147			
783	Statistics (All: NDs treated as DL value)				18	5.0000E-4	0.045	0.0185	0.0155	0.015			
784	Statistics (All: NDs treated as DL/2 value)				18	2.5000E-4	0.045	0.0172	0.0155	0.0144			
785	Statistics (Normal ROS Imputed Data)				18	-0.0155	0.045	0.0158	0.0141	0.016			
786	Statistics (Gamma ROS Imputed Data)				18	6.6000E-4	0.045	0.0176	0.0135	0.0137			
787	Statistics (Lognormal ROS Imputed Data)				18	5.7531E-4	0.045	0.0164	0.0135	0.0147			
788													
789					K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV			
790	Statistics (Non-Detects Only)				1.052	0.886	0.018	-4.51	1.37	-0.304			
791	Statistics (NDs = DL)				0.927	0.809	0.02	-4.618	1.478	-0.32			
792	Statistics (NDs = DL/2)				0.877	0.768	0.0196	-4.733	1.546	-0.327			
793	Statistics (Gamma ROS Estimates)				1.188	1.027	0.0148	-4.519	1.243	-0.275			
794	Statistics (Lognormal ROS Estimates)				--	--	--	-4.783	1.457	-0.305			
795													
796	Normal GOF Test Results												
797													
798					No NDs	NDs = DL	NDs = DL/2	Normal ROS					
799	Correlation Coefficient R				0.978	0.971	0.97	0.986					
800													

	A	B	C	D	E	F	G	H	I	J	K	L
801					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
802	Shapiro-Wilk (Detects Only)				0.938	0.881	Data Appear Normal					
803	Shapiro-Wilk (NDs = DL)				0.922	0.897	Data Appear Normal					
804	Shapiro-Wilk (NDs = DL/2)				0.924	0.897	Data Appear Normal					
805	Shapiro-Wilk (Normal ROS Estimates)				0.971	0.897	Data Appear Normal					
806	Lilliefors (Detects Only)				0.118	0.22	Data Appear Normal					
807	Lilliefors (NDs = DL)				0.122	0.202	Data Appear Normal					
808	Lilliefors (NDs = DL/2)				0.141	0.202	Data Appear Normal					
809	Lilliefors (Normal ROS Estimates)				0.117	0.202	Data Appear Normal					
810												
811	Gamma GOF Test Results											
812												
813					No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
814	Correlation Coefficient R				0.944	0.929	0.947	0.968				
815												
816					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
817	Anderson-Darling (Detects Only)				0.435	0.762						
818	Kolmogorov-Smirnov (Detects Only)				0.14	0.228	Detected Data Appear Gamma Distributed					
819	Anderson-Darling (NDs = DL)				0.553	0.77						
820	Kolmogorov-Smirnov (NDs = DL)				0.119	0.21	Data Appear Gamma Distributed					
821	Anderson-Darling (NDs = DL/2)				0.448	0.772						
822	Kolmogorov-Smirnov (NDs = DL/2)				0.15	0.21	Data Appear Gamma Distributed					
823	Anderson-Darling (Gamma ROS Estimates)				0.343	0.763						
824	Kolmogorov-Smirnov (Gamma ROS Est.)				0.127	0.209	Data Appear Gamma Distributed					
825												
826	Lognormal GOF Test Results											
827												
828					No NDs	NDs = DL	NDs = DL/2	Log ROS				
829	Correlation Coefficient R				0.928	0.927	0.934	0.951				
830												
831					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
832	Shapiro-Wilk (Detects Only)				0.851	0.881	Data Not Lognormal					
833	Shapiro-Wilk (NDs = DL)				0.846	0.897	Data Not Lognormal					
834	Shapiro-Wilk (NDs = DL/2)				0.866	0.897	Data Not Lognormal					
835	Shapiro-Wilk (Lognormal ROS Estimates)				0.887	0.897	Data Not Lognormal					
836	Lilliefors (Detects Only)				0.192	0.22	Data Appear Lognormal					
837	Lilliefors (NDs = DL)				0.174	0.202	Data Appear Lognormal					
838	Lilliefors (NDs = DL/2)				0.191	0.202	Data Appear Lognormal					
839	Lilliefors (Lognormal ROS Estimates)				0.161	0.202	Data Appear Lognormal					
840												
841	Note: Substitution methods such as DL or DL/2 are not recommended.											
842												
843	Chromium (m-58a)											
844												
845					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
846	Raw Statistics				20	2	18	8	10	55.56%		
847												
848					Number	Minimum	Maximum	Mean	Median	SD		
849	Statistics (Non-Detects Only)				10	5.0000E-4	0.01	0.00215	0.001	0.00295		
850	Statistics (Non-Detects Only)				8	5.2000E-4	0.0033	0.00151	9.8500E-4	0.00109		

	A	B	C	D	E	F	G	H	I	J	K	L
851	Statistics (All: NDs treated as DL value)				18	5.0000E-4	0.01	0.00186	0.001	0.00228		
852	Statistics (All: NDs treated as DL/2 value)				18	2.5000E-4	0.005	0.00127	7.3000E-4	0.0013		
853	Statistics (Normal ROS Imputed Data)				18	-0.00154	0.0033	5.8261E-4	5.5021E-4	0.00125		
854	Statistics (Gamma ROS Imputed Data)				18	5.2000E-4	0.01	0.00623	0.01	0.0044		
855	Statistics (Lognormal ROS Imputed Data)				18	1.5905E-4	0.0033	9.1966E-4	5.9763E-4	8.9759E-4		
856												
857					K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
858	Statistics (Non-Detects Only)				2.409	1.589	6.2517E-4	-6.72	0.706	-0.105		
859	Statistics (NDs = DL)				1.358	1.169	0.00137	-6.696	0.844	-0.126		
860	Statistics (NDs = DL/2)				1.362	1.172	9.2995E-4	-7.081	0.907	-0.128		
861	Statistics (Gamma ROS Estimates)				1.213	1.048	0.00513	-5.545	1.172	-0.211		
862	Statistics (Lognormal ROS Estimates)				--	--	--	-7.334	0.824	-0.112		
863												
864	Normal GOF Test Results											
865												
866					No NDs	NDs = DL	NDs = DL/2	Normal ROS				
867	Correlation Coefficient R				0.915	0.765	0.864	0.965				
868												
869					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
870	Shapiro-Wilk (Detects Only)				0.821	0.818	Data Appear Normal					
871	Shapiro-Wilk (NDs = DL)				0.607	0.897	Data Not Normal					
872	Shapiro-Wilk (NDs = DL/2)				0.753	0.897	Data Not Normal					
873	Shapiro-Wilk (Normal ROS Estimates)				0.934	0.897	Data Appear Normal					
874	Lilliefors (Detects Only)				0.304	0.283	Data Not Normal					
875	Lilliefors (NDs = DL)				0.314	0.202	Data Not Normal					
876	Lilliefors (NDs = DL/2)				0.303	0.202	Data Not Normal					
877	Lilliefors (Normal ROS Estimates)				0.203	0.202	Data Not Normal					
878												
879	Gamma GOF Test Results											
880												
881					No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
882	Correlation Coefficient R				0.958	0.924	0.979	0.712				
883												
884					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
885	Anderson-Darling (Detects Only)				0.492	0.723						
886	Kolmogorov-Smirnov (Detects Only)				0.27	0.297	Detected Data Appear Gamma Distributed					
887	Anderson-Darling (NDs = DL)				1.261	0.759						
888	Kolmogorov-Smirnov (NDs = DL)				0.306	0.208	Data Not Gamma Distributed					
889	Anderson-Darling (NDs = DL/2)				0.827	0.759						
890	Kolmogorov-Smirnov (NDs = DL/2)				0.211	0.208	Data Not Gamma Distributed					
891	Anderson-Darling (Gamma ROS Estimates)				2.175	0.762						
892	Kolmogorov-Smirnov (Gamma ROS Est.)				0.361	0.208	Data Not Gamma Distributed					
893												
894	Lognormal GOF Test Results											
895												
896					No NDs	NDs = DL	NDs = DL/2	Log ROS				
897	Correlation Coefficient R				0.962	0.94	0.969	0.981				
898												
899					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
900	Shapiro-Wilk (Detects Only)				0.903	0.818	Data Appear Lognormal					

	A	B	C	D	E	F	G	H	I	J	K	L	
901	Shapiro-Wilk (NDs = DL)				0.881	0.897	Data Not Lognormal						
902	Shapiro-Wilk (NDs = DL/2)				0.927	0.897	Data Appear Lognormal						
903	Shapiro-Wilk (Lognormal ROS Estimates)				0.959	0.897	Data Appear Lognormal						
904	Lilliefors (Detects Only)				0.23	0.283	Data Appear Lognormal						
905	Lilliefors (NDs = DL)				0.266	0.202	Data Not Lognormal						
906	Lilliefors (NDs = DL/2)				0.18	0.202	Data Appear Lognormal						
907	Lilliefors (Lognormal ROS Estimates)				0.136	0.202	Data Appear Lognormal						
908													
909	Note: Substitution methods such as DL or DL/2 are not recommended.												
910													
911	Chromium (m-62a)												
912													
913					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs			
914	Raw Statistics				20	2	18	9	9	50.00%			
915													
916					Number	Minimum	Maximum	Mean	Median	SD			
917	Statistics (Non-Detects Only)				9	5.0000E-4	0.01	0.00269	0.001	0.00302			
918	Statistics (Non-Detects Only)				9	6.3000E-4	0.002	0.00123	0.0011	4.5076E-4			
919	Statistics (All: NDs treated as DL value)				18	5.0000E-4	0.01	0.00196	0.00105	0.00222			
920	Statistics (All: NDs treated as DL/2 value)				18	2.5000E-4	0.005	0.00129	9.9500E-4	0.00108			
921	Statistics (Normal ROS Imputed Data)				18	1.6553E-4	0.002	0.001	9.9029E-4	4.4353E-4			
922	Statistics (Gamma ROS Imputed Data)				18	6.3000E-4	0.01	0.00561	0.006	0.00452			
923	Statistics (Lognormal ROS Imputed Data)				18	4.7559E-4	0.002	0.00102	9.4695E-4	3.9740E-4			
924													
925					K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV			
926	Statistics (Non-Detects Only)				8.266	5.585	1.4866E-4	-6.763	0.377	-0.0558			
927	Statistics (NDs = DL)				1.698	1.452	0.00115	-6.558	0.728	-0.111			
928	Statistics (NDs = DL/2)				2.162	1.838	5.9525E-4	-6.905	0.712	-0.103			
929	Statistics (Gamma ROS Estimates)				1.134	0.982	0.00495	-5.684	1.14	-0.201			
930	Statistics (Lognormal ROS Estimates)				--	--	--	-6.954	0.371	-0.0533			
931													
932	Normal GOF Test Results												
933													
934					No NDs	NDs = DL	NDs = DL/2	Normal ROS					
935	Correlation Coefficient R				0.985	0.747	0.843	0.969					
936													
937					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)						
938	Shapiro-Wilk (Detects Only)				0.962	0.829	Data Appear Normal						
939	Shapiro-Wilk (NDs = DL)				0.583	0.897	Data Not Normal						
940	Shapiro-Wilk (NDs = DL/2)				0.733	0.897	Data Not Normal						
941	Shapiro-Wilk (Normal ROS Estimates)				0.949	0.897	Data Appear Normal						
942	Lilliefors (Detects Only)				0.168	0.274	Data Appear Normal						
943	Lilliefors (NDs = DL)				0.326	0.202	Data Not Normal						
944	Lilliefors (NDs = DL/2)				0.199	0.202	Data Appear Normal						
945	Lilliefors (Normal ROS Estimates)				0.21	0.202	Data Not Normal						
946													
947	Gamma GOF Test Results												
948													
949					No NDs	NDs = DL	NDs = DL/2	Gamma ROS					
950	Correlation Coefficient R				0.992	0.898	0.936	0.742					

	A	B	C	D	E	F	G	H	I	J	K	L	
951													
952					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)						
953	Anderson-Darling (Detects Only)				0.184	0.722							
954	Kolmogorov-Smirnov (Detects Only)				0.135	0.28	Detected Data Appear Gamma Distributed						
955	Anderson-Darling (NDs = DL)				1.377	0.755							
956	Kolmogorov-Smirnov (NDs = DL)				0.221	0.207	Data Not Gamma Distributed						
957	Anderson-Darling (NDs = DL/2)				0.422	0.752							
958	Kolmogorov-Smirnov (NDs = DL/2)				0.123	0.206	Data Appear Gamma Distributed						
959	Anderson-Darling (Gamma ROS Estimates)				2.279	0.764							
960	Kolmogorov-Smirnov (Gamma ROS Est.)				0.337	0.209	Data Not Gamma Distributed						
961													
962	Lognormal GOF Test Results												
963													
964					No NDs	NDs = DL	NDs = DL/2	Log ROS					
965	Correlation Coefficient R				0.992	0.94	0.979	0.981					
966													
967					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)						
968	Shapiro-Wilk (Detects Only)				0.976	0.829	Data Appear Lognormal						
969	Shapiro-Wilk (NDs = DL)				0.893	0.897	Data Not Lognormal						
970	Shapiro-Wilk (NDs = DL/2)				0.968	0.897	Data Appear Lognormal						
971	Shapiro-Wilk (Lognormal ROS Estimates)				0.964	0.897	Data Appear Lognormal						
972	Lilliefors (Detects Only)				0.139	0.274	Data Appear Lognormal						
973	Lilliefors (NDs = DL)				0.192	0.202	Data Appear Lognormal						
974	Lilliefors (NDs = DL/2)				0.114	0.202	Data Appear Lognormal						
975	Lilliefors (Lognormal ROS Estimates)				0.183	0.202	Data Appear Lognormal						
976													
977	Note: Substitution methods such as DL or DL/2 are not recommended.												
978													
979	Cobalt (m-56a)												
980													
981					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs			
982	Raw Statistics				20	2	18	10	8	44.44%			
983													
984					Number	Minimum	Maximum	Mean	Median	SD			
985	Statistics (Non-Detects Only)				8	5.0000E-4	0.002	9.3750E-4	7.5000E-4	5.4756E-4			
986	Statistics (Non-Detects Only)				10	6.1000E-4	0.002	0.00105	9.8500E-4	4.3422E-4			
987	Statistics (All: NDs treated as DL value)				18	5.0000E-4	0.002	0.001	8.8500E-4	4.7607E-4			
988	Statistics (All: NDs treated as DL/2 value)				18	2.5000E-4	0.002	7.9222E-4	6.9000E-4	4.6831E-4			
989	Statistics (Normal ROS Imputed Data)				18	-2.059E-4	0.002	7.22E-04	6.5700E-4	5.29E-04			
990	Statistics (Gamma ROS Imputed Data)				18	6.1000E-4	0.01	0.00503	0.00165	0.00459			
991	Statistics (Lognormal ROS Imputed Data)				18	3.1473E-4	0.002	8.1378E-4	6.7029E-4	4.2564E-4			
992													
993					K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV			
994	Statistics (Non-Detects Only)				7.268	5.154	1.4462E-4	-6.928	0.389	-0.0561			
995	Statistics (NDs = DL)				5.023	4.223	1.9920E-4	-7.01	0.465	-0.0664			
996	Statistics (NDs = DL/2)				2.974	2.516	2.6637E-4	-7.318	0.639	-0.0874			
997	Statistics (Gamma ROS Estimates)				0.961	0.838	0.00523	-5.896	1.221	-0.207			
998	Statistics (Lognormal ROS Estimates)				--	--	--	-7.226	0.476	-0.0659			
999													
1000	Normal GOF Test Results												

	A	B	C	D	E	F	G	H	I	J	K	L
1001												
1002					No NDs	NDs = DL	NDs = DL/2	Normal ROS				
1003	Correlation Coefficient R				0.924	0.938	0.951	0.974				
1004												
1005					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
1006	Shapiro-Wilk (Detects Only)				0.857	0.842	Data Appear Normal					
1007	Shapiro-Wilk (NDs = DL)				0.867	0.897	Data Not Normal					
1008	Shapiro-Wilk (NDs = DL/2)				0.904	0.897	Data Appear Normal					
1009	Shapiro-Wilk (Normal ROS Estimates)				0.958	0.897	Data Appear Normal					
1010	Lilliefors (Detects Only)				0.241	0.262	Data Appear Normal					
1011	Lilliefors (NDs = DL)				0.186	0.202	Data Appear Normal					
1012	Lilliefors (NDs = DL/2)				0.186	0.202	Data Appear Normal					
1013	Lilliefors (Normal ROS Estimates)				0.186	0.202	Data Appear Normal					
1014												
1015	Gamma GOF Test Results											
1016												
1017					No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
1018	Correlation Coefficient R				0.957	0.965	0.981	0.764				
1019												
1020					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
1021	Anderson-Darling (Detects Only)				0.559	0.727						
1022	Kolmogorov-Smirnov (Detects Only)				0.249	0.267	Detected Data Appear Gamma Distributed					
1023	Anderson-Darling (NDs = DL)				0.639	0.743						
1024	Kolmogorov-Smirnov (NDs = DL)				0.159	0.204	Data Appear Gamma Distributed					
1025	Anderson-Darling (NDs = DL/2)				0.476	0.746						
1026	Kolmogorov-Smirnov (NDs = DL/2)				0.15	0.205	Data Appear Gamma Distributed					
1027	Anderson-Darling (Gamma ROS Estimates)				2.224	0.768						
1028	Kolmogorov-Smirnov (Gamma ROS Est.)				0.306	0.21	Data Not Gamma Distributed					
1029												
1030	Lognormal GOF Test Results											
1031												
1032					No NDs	NDs = DL	NDs = DL/2	Log ROS				
1033	Correlation Coefficient R				0.954	0.963	0.962	0.979				
1034												
1035					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
1036	Shapiro-Wilk (Detects Only)				0.903	0.842	Data Appear Lognormal					
1037	Shapiro-Wilk (NDs = DL)				0.908	0.897	Data Appear Lognormal					
1038	Shapiro-Wilk (NDs = DL/2)				0.914	0.897	Data Appear Lognormal					
1039	Shapiro-Wilk (Lognormal ROS Estimates)				0.96	0.897	Data Appear Lognormal					
1040	Lilliefors (Detects Only)				0.232	0.262	Data Appear Lognormal					
1041	Lilliefors (NDs = DL)				0.174	0.202	Data Appear Lognormal					
1042	Lilliefors (NDs = DL/2)				0.16	0.202	Data Appear Lognormal					
1043	Lilliefors (Lognormal ROS Estimates)				0.175	0.202	Data Appear Lognormal					
1044												
1045	Note: Substitution methods such as DL or DL/2 are not recommended.											
1046												
1047	Cobalt (m-57a)											
1048												
1049					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
1050	Raw Statistics				20	2	18	17	1	5.56%		

	A	B	C	D	E	F	G	H	I	J	K	L	
1051													
1052					Number	Minimum	Maximum	Mean	Median	SD			
1053	Statistics (Non-Detects Only)				1	0.004	0.004	0.004	0.004	N/A			
1054	Statistics (Non-Detects Only)				17	0.0049	0.0088	0.00728	0.0077	0.00128			
1055	Statistics (All: NDs treated as DL value)				18	0.004	0.0088	0.00709	0.00765	0.00146			
1056	Statistics (All: NDs treated as DL/2 value)				18	0.002	0.0088	0.00698	0.00765	0.00176			
1057	Statistics (Normal ROS Imputed Data)				18	0.00425	0.0088	0.00711	0.00765	0.00143			
1058	Statistics (Gamma ROS Imputed Data)				18	0.0049	0.01	0.00743	0.0077	0.00139			
1059	Statistics (Lognormal ROS Imputed Data)				18	0.00461	0.0088	0.00713	0.00765	0.00139			
1060													
1061					K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV			
1062	Statistics (Non-Detects Only)				31.18	25.71	2.3340E-4	-4.939	0.19	-0.0385			
1063	Statistics (NDs = DL)				21.78	18.18	3.2577E-4	-4.972	0.23	-0.0463			
1064	Statistics (NDs = DL/2)				11.07	9.26	6.3099E-4	-5.01	0.353	-0.0704			
1065	Statistics (Gamma ROS Estimates)				27.72	23.14	2.6795E-4	-4.921	0.201	-0.0408			
1066	Statistics (Lognormal ROS Estimates)				--	--	--	-4.964	0.212	-0.0427			
1067													
1068	Normal GOF Test Results												
1069													
1070					No NDs	NDs = DL	NDs = DL/2	Normal ROS					
1071	Correlation Coefficient R				0.955	0.955	0.922	0.956					
1072													
1073					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)						
1074	Shapiro-Wilk (Detects Only)				0.896	0.892	Data Appear Normal						
1075	Shapiro-Wilk (NDs = DL)				0.902	0.897	Data Appear Normal						
1076	Shapiro-Wilk (NDs = DL/2)				0.855	0.897	Data Not Normal						
1077	Shapiro-Wilk (Normal ROS Estimates)				0.901	0.897	Data Appear Normal						
1078	Lilliefors (Detects Only)				0.217	0.207	Data Not Normal						
1079	Lilliefors (NDs = DL)				0.221	0.202	Data Not Normal						
1080	Lilliefors (NDs = DL/2)				0.227	0.202	Data Not Normal						
1081	Lilliefors (Normal ROS Estimates)				0.219	0.202	Data Not Normal						
1082													
1083	Gamma GOF Test Results												
1084													
1085					No NDs	NDs = DL	NDs = DL/2	Gamma ROS					
1086	Correlation Coefficient R				0.934	0.928	0.87	0.964					
1087													
1088					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)						
1089	Anderson-Darling (Detects Only)				0.849	0.737							
1090	Kolmogorov-Smirnov (Detects Only)				0.238	0.209	Data Not Gamma Distributed						
1091	Anderson-Darling (NDs = DL)				0.88	0.739							
1092	Kolmogorov-Smirnov (NDs = DL)				0.242	0.203	Data Not Gamma Distributed						
1093	Anderson-Darling (NDs = DL/2)				1.329	0.739							
1094	Kolmogorov-Smirnov (NDs = DL/2)				0.244	0.203	Data Not Gamma Distributed						
1095	Anderson-Darling (Gamma ROS Estimates)				0.626	0.739							
1096	Kolmogorov-Smirnov (Gamma ROS Est.)				0.212	0.203	Detected Data appear Approximate Gamma Distr						
1097													
1098	Lognormal GOF Test Results												
1099													
1100					No NDs	NDs = DL	NDs = DL/2	Log ROS					

	A	B	C	D	E	F	G	H	I	J	K	L
1101	Correlation Coefficient R				0.939	0.935	0.829	0.94				
1102												
1103					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
1104	Shapiro-Wilk (Detects Only)				0.868	0.892	Data Not Lognormal					
1105	Shapiro-Wilk (NDs = DL)				0.868	0.897	Data Not Lognormal					
1106	Shapiro-Wilk (NDs = DL/2)				0.706	0.897	Data Not Lognormal					
1107	Shapiro-Wilk (Lognormal ROS Estimates)				0.87	0.897	Data Not Lognormal					
1108	Lilliefors (Detects Only)				0.243	0.207	Data Not Lognormal					
1109	Lilliefors (NDs = DL)				0.245	0.202	Data Not Lognormal					
1110	Lilliefors (NDs = DL/2)				0.241	0.202	Data Not Lognormal					
1111	Lilliefors (Lognormal ROS Estimates)				0.242	0.202	Data Not Lognormal					
1112												
1113	Note: Substitution methods such as DL or DL/2 are not recommended.											
1114												
1115	Cobalt (m-58a)											
1116												
1117					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
1118	Raw Statistics				20	2	18	6	12	66.67%		
1119												
1120					Number	Minimum	Maximum	Mean	Median	SD		
1121	Statistics (Non-Detects Only)				12	5.0000E-4	0.01	0.00146	5.0000E-4	0.00273		
1122	Statistics (Non-Detects Only)				6	5.1000E-4	0.0011	8.2333E-4	8.8000E-4	2.4196E-4		
1123	Statistics (All: NDs treated as DL value)				18	5.0000E-4	0.01	0.00125	5.0500E-4	0.00222		
1124	Statistics (All: NDs treated as DL/2 value)				18	2.5000E-4	0.005	7.6056E-4	3.7500E-4	0.00111		
1125	Statistics (Normal ROS Imputed Data)				18	-2.718E-4	0.0011	4.1201E-4	3.9695E-4	3.7567E-4		
1126	Statistics (Gamma ROS Imputed Data)				18	5.1000E-4	0.01	0.00694	0.01	0.00445		
1127	Statistics (Lognormal ROS Imputed Data)				18	1.9600E-4	0.0011	5.2363E-4	4.5953E-4	2.6626E-4		
1128												
1129					K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
1130	Statistics (Non-Detects Only)				12.67	6.444	6.5004E-5	-7.142	0.318	-0.0445		
1131	Statistics (NDs = DL)				1.183	1.023	0.00105	-7.166	0.757	-0.106		
1132	Statistics (NDs = DL/2)				1.26	1.087	6.0363E-4	-7.628	0.835	-0.11		
1133	Statistics (Gamma ROS Estimates)				1.179	1.02	0.00589	-5.451	1.243	-0.228		
1134	Statistics (Lognormal ROS Estimates)				--	--	--	-7.666	0.48	-0.0627		
1135												
1136	Normal GOF Test Results											
1137												
1138					No NDs	NDs = DL	NDs = DL/2	Normal ROS				
1139	Correlation Coefficient R				0.965	0.582	0.674	0.985				
1140												
1141					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
1142	Shapiro-Wilk (Detects Only)				0.909	0.788	Data Appear Normal					
1143	Shapiro-Wilk (NDs = DL)				0.368	0.897	Data Not Normal					
1144	Shapiro-Wilk (NDs = DL/2)				0.482	0.897	Data Not Normal					
1145	Shapiro-Wilk (Normal ROS Estimates)				0.967	0.897	Data Appear Normal					
1146	Lilliefors (Detects Only)				0.228	0.325	Data Appear Normal					
1147	Lilliefors (NDs = DL)				0.415	0.202	Data Not Normal					
1148	Lilliefors (NDs = DL/2)				0.324	0.202	Data Not Normal					
1149	Lilliefors (Normal ROS Estimates)				0.121	0.202	Data Appear Normal					
1150												

	A	B	C	D	E	F	G	H	I	J	K	L
1151	Gamma GOF Test Results											
1152												
1153					No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
1154	Correlation Coefficient R				0.944	0.79	0.852	0.614				
1155												
1156					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
1157	Anderson-Darling (Detects Only)				0.407	0.698						
1158	Kolmogorov-Smirnov (Detects Only)				0.256	0.332	Detected Data Appear Gamma Distributed					
1159	Anderson-Darling (NDs = DL)				3.259	0.763						
1160	Kolmogorov-Smirnov (NDs = DL)				0.318	0.209	Data Not Gamma Distributed					
1161	Anderson-Darling (NDs = DL/2)				1.808	0.761						
1162	Kolmogorov-Smirnov (NDs = DL/2)				0.269	0.208	Data Not Gamma Distributed					
1163	Anderson-Darling (Gamma ROS Estimates)				3.428	0.763						
1164	Kolmogorov-Smirnov (Gamma ROS Est.)				0.432	0.209	Data Not Gamma Distributed					
1165												
1166	Lognormal GOF Test Results											
1167												
1168					No NDs	NDs = DL	NDs = DL/2	Log ROS				
1169	Correlation Coefficient R				0.954	0.787	0.884	0.982				
1170												
1171					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
1172	Shapiro-Wilk (Detects Only)				0.888	0.788	Data Appear Lognormal					
1173	Shapiro-Wilk (NDs = DL)				0.637	0.897	Data Not Lognormal					
1174	Shapiro-Wilk (NDs = DL/2)				0.784	0.897	Data Not Lognormal					
1175	Shapiro-Wilk (Lognormal ROS Estimates)				0.958	0.897	Data Appear Lognormal					
1176	Lilliefors (Detects Only)				0.239	0.325	Data Appear Lognormal					
1177	Lilliefors (NDs = DL)				0.283	0.202	Data Not Lognormal					
1178	Lilliefors (NDs = DL/2)				0.287	0.202	Data Not Lognormal					
1179	Lilliefors (Lognormal ROS Estimates)				0.152	0.202	Data Appear Lognormal					
1180												
1181	Note: Substitution methods such as DL or DL/2 are not recommended.											
1182												
1183	Cobalt (m-62a)											
1184												
1185					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
1186	Raw Statistics				20	2	18	4	14	77.78%		
1187												
1188					Number	Minimum	Maximum	Mean	Median	SD		
1189	Statistics (Non-Detects Only)				14	5.0000E-4	0.002	6.7857E-4	5.0000E-4	4.2095E-4		
1190	Statistics (Non-Detects Only)				4	4.6000E-4	0.0022	0.0011	8.7000E-4	8.0482E-4		
1191	Statistics (All: NDs treated as DL value)				18	4.6000E-4	0.0022	7.7222E-4	5.0000E-4	5.3133E-4		
1192	Statistics (All: NDs treated as DL/2 value)				18	2.5000E-4	0.0022	5.0833E-4	2.5000E-4	5.0407E-4		
1193	Statistics (Normal ROS Imputed Data)				18	-7.255E-4	0.0022	3.7809E-4	3.7604E-4	6.5134E-4		
1194	Statistics (Gamma ROS Imputed Data)				18	4.6000E-4	0.01	0.00802	0.01	0.00382		
1195	Statistics (Lognormal ROS Imputed Data)				18	1.5694E-4	0.0022	5.5618E-4	4.4212E-4	4.7206E-4		
1196												
1197					K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
1198	Statistics (Non-Detects Only)				2.645	0.828	4.1589E-4	-7.013	0.729	-0.104		
1199	Statistics (NDs = DL)				3.49	2.946	2.2125E-4	-7.316	0.509	-0.0695		
1200	Statistics (NDs = DL/2)				1.995	1.7	2.5474E-4	-7.855	0.667	-0.085		

	A	B	C	D	E	F	G	H	I	J	K	L	
1201	Statistics (Gamma ROS Estimates)				1.737	1.484	0.00462	-5.14	1.075	-0.209			
1202	Statistics (Lognormal ROS Estimates)				--	--	--	-7.704	0.614	-0.0797			
1203													
1204	Normal GOF Test Results												
1205													
1206					No NDs	NDs = DL	NDs = DL/2	Normal ROS					
1207	Correlation Coefficient R				0.941	0.773	0.758	0.955					
1208													
1209					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)						
1210	Shapiro-Wilk (Detects Only)				0.878	0.748	Data Appear Normal						
1211	Shapiro-Wilk (NDs = DL)				0.604	0.897	Data Not Normal						
1212	Shapiro-Wilk (NDs = DL/2)				0.592	0.897	Data Not Normal						
1213	Shapiro-Wilk (Normal ROS Estimates)				0.93	0.897	Data Appear Normal						
1214	Lilliefors (Detects Only)				0.257	0.375	Data Appear Normal						
1215	Lilliefors (NDs = DL)				0.391	0.202	Data Not Normal						
1216	Lilliefors (NDs = DL/2)				0.308	0.202	Data Not Normal						
1217	Lilliefors (Normal ROS Estimates)				0.165	0.202	Data Appear Normal						
1218													
1219	Gamma GOF Test Results												
1220													
1221					No NDs	NDs = DL	NDs = DL/2	Gamma ROS					
1222	Correlation Coefficient R				0.993	0.882	0.908	0.549					
1223													
1224					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)						
1225	Anderson-Darling (Detects Only)				0.346	0.66							
1226	Kolmogorov-Smirnov (Detects Only)				0.293	0.397	Detected Data Appear Gamma Distributed						
1227	Anderson-Darling (NDs = DL)				3.101	0.744							
1228	Kolmogorov-Smirnov (NDs = DL)				0.395	0.205	Data Not Gamma Distributed						
1229	Anderson-Darling (NDs = DL/2)				2.446	0.753							
1230	Kolmogorov-Smirnov (NDs = DL/2)				0.352	0.206	Data Not Gamma Distributed						
1231	Anderson-Darling (Gamma ROS Estimates)				4.279	0.755							
1232	Kolmogorov-Smirnov (Gamma ROS Est.)				0.487	0.207	Data Not Gamma Distributed						
1233													
1234	Lognormal GOF Test Results												
1235													
1236					No NDs	NDs = DL	NDs = DL/2	Log ROS					
1237	Correlation Coefficient R				0.966	0.811	0.846	0.966					
1238													
1239					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)						
1240	Shapiro-Wilk (Detects Only)				0.918	0.748	Data Appear Lognormal						
1241	Shapiro-Wilk (NDs = DL)				0.656	0.897	Data Not Lognormal						
1242	Shapiro-Wilk (NDs = DL/2)				0.715	0.897	Data Not Lognormal						
1243	Shapiro-Wilk (Lognormal ROS Estimates)				0.946	0.897	Data Appear Lognormal						
1244	Lilliefors (Detects Only)				0.258	0.375	Data Appear Lognormal						
1245	Lilliefors (NDs = DL)				0.381	0.202	Data Not Lognormal						
1246	Lilliefors (NDs = DL/2)				0.356	0.202	Data Not Lognormal						
1247	Lilliefors (Lognormal ROS Estimates)				0.163	0.202	Data Appear Lognormal						
1248													
1249	Note: Substitution methods such as DL or DL/2 are not recommended.												
1250													

	A	B	C	D	E	F	G	H	I	J	K	L
1251	Fluoride (m-56a)											
1252												
1253					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
1254	Raw Statistics				20	1	19	8	11	57.89%		
1255												
1256					Number	Minimum	Maximum	Mean	Median	SD		
1257	Statistics (Non-Detects Only)				11	0.4	0.8	0.473	0.4	0.162		
1258	Statistics (Non-Detects Only)				8	0.4	0.49	0.435	0.425	0.0342		
1259	Statistics (All: NDs treated as DL value)				19	0.4	0.8	0.457	0.4	0.124		
1260	Statistics (All: NDs treated as DL/2 value)				19	0.2	0.49	0.32	0.4	0.119		
1261	Statistics (Normal ROS Imputed Data)				19	0.266	0.49	0.379	0.375	0.0612		
1262	Statistics (Gamma ROS Imputed Data)				19	0.276	0.49	0.381	0.376	0.0587		
1263	Statistics (Lognormal ROS Imputed Data)				19	0.295	0.49	0.386	0.379	0.0536		
1264												
1265					K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
1266	Statistics (Non-Detects Only)				188.2	117.7	0.00231	-0.835	0.0776	-0.0929		
1267	Statistics (NDs = DL)				19.61	16.55	0.0233	-0.809	0.216	-0.267		
1268	Statistics (NDs = DL/2)				7.206	6.103	0.0444	-1.21	0.393	-0.324		
1269	Statistics (Gamma ROS Estimates)				44	37.09	0.00867	-0.976	0.156	-0.16		
1270	Statistics (Lognormal ROS Estimates)				--	--	--	-0.962	0.139	-0.144		
1271												
1272	Normal GOF Test Results											
1273												
1274					No NDs	NDs = DL	NDs = DL/2	Normal ROS				
1275	Correlation Coefficient R				0.96	0.707	0.883	0.996				
1276												
1277					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
1278	Shapiro-Wilk (Detects Only)				0.9	0.818	Data Appear Normal					
1279	Shapiro-Wilk (NDs = DL)				0.509	0.901	Data Not Normal					
1280	Shapiro-Wilk (NDs = DL/2)				0.756	0.901	Data Not Normal					
1281	Shapiro-Wilk (Normal ROS Estimates)				0.985	0.901	Data Appear Normal					
1282	Lilliefors (Detects Only)				0.183	0.283	Data Appear Normal					
1283	Lilliefors (NDs = DL)				0.323	0.197	Data Not Normal					
1284	Lilliefors (NDs = DL/2)				0.316	0.197	Data Not Normal					
1285	Lilliefors (Normal ROS Estimates)				0.107	0.197	Data Appear Normal					
1286												
1287	Gamma GOF Test Results											
1288												
1289					No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
1290	Correlation Coefficient R				0.963	0.763	0.881	0.994				
1291												
1292					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
1293	Anderson-Darling (Detects Only)				0.405	0.715						
1294	Kolmogorov-Smirnov (Detects Only)				0.178	0.294	Detected Data Appear Gamma Distributed					
1295	Anderson-Darling (NDs = DL)				3.806	0.74						
1296	Kolmogorov-Smirnov (NDs = DL)				0.312	0.198	Data Not Gamma Distributed					
1297	Anderson-Darling (NDs = DL/2)				2.468	0.742						
1298	Kolmogorov-Smirnov (NDs = DL/2)				0.325	0.199	Data Not Gamma Distributed					
1299	Anderson-Darling (Gamma ROS Estimates)				0.139	0.74						
1300	Kolmogorov-Smirnov (Gamma ROS Est.)				0.118	0.198	Data Appear Gamma Distributed					

	A	B	C	D	E	F	G	H	I	J	K	L
1301												
1302	Lognormal GOF Test Results											
1303												
1304					No NDs	NDs = DL	NDs = DL/2	Log ROS				
1305	Correlation Coefficient R				0.962	0.74	0.866	0.996				
1306												
1307					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
1308	Shapiro-Wilk (Detects Only)				0.904	0.818	Data Appear Lognormal					
1309	Shapiro-Wilk (NDs = DL)				0.553	0.901	Data Not Lognormal					
1310	Shapiro-Wilk (NDs = DL/2)				0.725	0.901	Data Not Lognormal					
1311	Shapiro-Wilk (Lognormal ROS Estimates)				0.985	0.901	Data Appear Lognormal					
1312	Lilliefors (Detects Only)				0.171	0.283	Data Appear Lognormal					
1313	Lilliefors (NDs = DL)				0.31	0.197	Data Not Lognormal					
1314	Lilliefors (NDs = DL/2)				0.319	0.197	Data Not Lognormal					
1315	Lilliefors (Lognormal ROS Estimates)				0.102	0.197	Data Appear Lognormal					
1316												
1317	Note: Substitution methods such as DL or DL/2 are not recommended.											
1318												
1319	Fluoride (m-57a)											
1320												
1321					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
1322	Raw Statistics				20	1	19	2	17	89.47%		
1323												
1324					Number	Minimum	Maximum	Mean	Median	SD		
1325	Statistics (Non-Detects Only)				17	0.4	0.8	0.424	0.4	0.097		
1326	Statistics (Non-Detects Only)				2	0.42	0.53	0.475	0.475	0.0778		
1327	Statistics (All: NDs treated as DL value)				19	0.4	0.8	0.429	0.4	0.0947		
1328	Statistics (All: NDs treated as DL/2 value)				19	0.2	0.53	0.239	0.2	0.0965		
1329	Statistics (Normal ROS Imputed Data)				19	-0.573	0.53	-0.0441	-0.0478	0.288		
1330	Statistics (Gamma ROS Imputed Data)				19	N/A	N/A	N/A	N/A	N/A		
1331	Statistics (Lognormal ROS Imputed Data)				19	0.0515	0.53	0.188	0.156	0.123		
1332												
1333					K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
1334	Statistics (Non-Detects Only)				N/A	N/A	N/A	N/A	N/A	N/A		
1335	Statistics (NDs = DL)				31.4	26.48	0.0137	-0.862	0.168	-0.195		
1336	Statistics (NDs = DL/2)				9.544	8.072	0.0251	-1.483	0.305	-0.206		
1337	Statistics (Gamma ROS Estimates)				N/A	N/A	N/A	N/A	N/A	N/A		
1338	Statistics (Lognormal ROS Estimates)				--	--	--	-1.849	0.61	-0.33		
1339												
1340	Normal GOF Test Results											
1341												
1342					No NDs	NDs = DL	NDs = DL/2	Normal ROS				
1343	Correlation Coefficient R				1	0.573	0.677	0.998				
1344												
1345					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
1346	Shapiro-Wilk (NDs = DL)				0.355	0.901	Data Not Normal					
1347	Shapiro-Wilk (NDs = DL/2)				0.471	0.901	Data Not Normal					
1348	Shapiro-Wilk (Normal ROS Estimates)				0.993	0.901	Data Appear Normal					
1349	Lilliefors (Detects Only)				N/A	N/A						
1350	Lilliefors (NDs = DL)				0.462	0.197	Data Not Normal					

	A	B	C	D	E	F	G	H	I	J	K	L
1351	Lilliefors (NDs = DL/2)				0.501	0.197	Data Not Normal					
1352	Lilliefors (Normal ROS Estimates)				0.0583	0.197	Data Appear Normal					
1353												
1354	Gamma GOF Test Results											
1355												
1356					No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
1357	Correlation Coefficient R				N/A	0.627	0.758	0.984				
1358												
1359					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
1360	Anderson-Darling (Detects Only)				N/A	N/A						
1361	Kolmogorov-Smirnov (Detects Only)				N/A	N/A						
1362	Anderson-Darling (NDs = DL)				5.493	0.74						
1363	Kolmogorov-Smirnov (NDs = DL)				0.47	0.198	Data Not Gamma Distributed					
1364	Anderson-Darling (NDs = DL/2)				5.251	0.741						
1365	Kolmogorov-Smirnov (NDs = DL/2)				0.509	0.199	Data Not Gamma Distributed					
1366	Anderson-Darling (Gamma ROS Estimates)				N/A	0.738						
1367	Kolmogorov-Smirnov (Gamma ROS Est.)				N/A	0.198						
1368												
1369	Lognormal GOF Test Results											
1370												
1371					No NDs	NDs = DL	NDs = DL/2	Log ROS				
1372	Correlation Coefficient R				1	0.592	0.678	N/A				
1373												
1374					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
1375	Shapiro-Wilk (NDs = DL)				0.376	0.901	Data Not Lognormal					
1376	Shapiro-Wilk (NDs = DL/2)				0.468	0.901	Data Not Lognormal					
1377	Shapiro-Wilk (Lognormal ROS Estimates)				0.993	0.901	Data Appear Lognormal					
1378	Lilliefors (Detects Only)				N/A	N/A						
1379	Lilliefors (NDs = DL)				0.468	0.197	Data Not Lognormal					
1380	Lilliefors (NDs = DL/2)				0.503	0.197	Data Not Lognormal					
1381	Lilliefors (Lognormal ROS Estimates)				0.0583	0.197	Data Appear Lognormal					
1382												
1383	Note: Substitution methods such as DL or DL/2 are not recommended.											
1384												
1385	Fluoride (m-58a)											
1386												
1387					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
1388	Raw Statistics				20	1	19	1	18	94.74%		
1389												
1390	Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!											
1391	It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).											
1392												
1393	The data set for variable Fluoride (m-58a) was not processed!											
1394												
1395												
1396												
1397	Fluoride (m-62a)											
1398												
1399					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
1400	Raw Statistics				20	1	19	0	19	100.00%		

	A	B	C	D	E	F	G	H	I	J	K	L
1401												
1402	Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!											
1403	Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!											
1404	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).											
1405												
1406	The data set for variable Fluoride (m-62a) was not processed!											
1407												
1408												
1409												
1410	Lead (m-56a)											
1411												
1412					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
1413	Raw Statistics				20	5	15	0	15	100.00%		
1414												
1415	Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!											
1416	Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!											
1417	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).											
1418												
1419	The data set for variable Lead (m-56a) was not processed!											
1420												
1421												
1422												
1423	Lead (m-57a)											
1424												
1425					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
1426	Raw Statistics				20	5	15	2	13	86.67%		
1427												
1428					Number	Minimum	Maximum	Mean	Median	SD		
1429	Statistics (Non-Detects Only)				13	5.0000E-4	0.01	0.00142	5.0000E-4	0.00261		
1430	Statistics (Non-Detects Only)				2	2.1000E-4	8.6000E-4	5.3500E-4	5.3500E-4	4.5962E-4		
1431	Statistics (All: NDs treated as DL value)				15	2.1000E-4	0.01	0.0013	5.0000E-4	0.00244		
1432	Statistics (All: NDs treated as DL/2 value)				15	2.1000E-4	0.005	6.8800E-4	2.5000E-4	0.00122		
1433	Statistics (Normal ROS Imputed Data)				15	-2.297E-4	8.6000E-4	2.5692E-4	2.5112E-4	2.6661E-4		
1434	Statistics (Gamma ROS Imputed Data)				15	N/A	N/A	N/A	N/A	N/A		
1435	Statistics (Lognormal ROS Imputed Data)				15	8.0909E-5	8.6000E-4	2.7493E-4	2.2959E-4	1.9037E-4		
1436												
1437					K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
1438	Statistics (Non-Detects Only)				N/A	N/A	N/A	N/A	N/A	N/A		
1439	Statistics (NDs = DL)				0.971	0.822	0.00134	-7.238	0.884	-0.122		
1440	Statistics (NDs = DL/2)				1.032	0.87	6.6641E-4	-7.839	0.858	-0.109		
1441	Statistics (Gamma ROS Estimates)				N/A	N/A	N/A	N/A	N/A	N/A		
1442	Statistics (Lognormal ROS Estimates)				--	--	--	-8.367	0.578	-0.0691		
1443												
1444	Normal GOF Test Results											
1445												
1446					No NDs	NDs = DL	NDs = DL/2	Normal ROS				
1447	Correlation Coefficient R				1	0.61	0.624	0.984				
1448												
1449					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
1450	Shapiro-Wilk (NDs = DL)				0.404	0.881	Data Not Normal					

	A	B	C	D	E	F	G	H	I	J	K	L		
1451	Shapiro-Wilk (NDs = DL/2)				0.419	0.881	Data Not Normal							
1452	Shapiro-Wilk (Normal ROS Estimates)				0.98	0.881	Data Appear Normal							
1453	Lilliefors (Detects Only)				N/A	N/A								
1454	Lilliefors (NDs = DL)				0.416	0.22	Data Not Normal							
1455	Lilliefors (NDs = DL/2)				0.361	0.22	Data Not Normal							
1456	Lilliefors (Normal ROS Estimates)				0.114	0.22	Data Appear Normal							
1457														
1458	Gamma GOF Test Results													
1459														
1460					No NDs	NDs = DL	NDs = DL/2	Gamma ROS						
1461	Correlation Coefficient R				N/A	0.828	0.839	0.444						
1462														
1463					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)							
1464	Anderson-Darling (Detects Only)				N/A	N/A								
1465	Kolmogorov-Smirnov (Detects Only)				N/A	N/A								
1466	Anderson-Darling (NDs = DL)				2.603	0.764								
1467	Kolmogorov-Smirnov (NDs = DL)				0.342	0.228	Data Not Gamma Distributed							
1468	Anderson-Darling (NDs = DL/2)				2.66	0.762								
1469	Kolmogorov-Smirnov (NDs = DL/2)				0.369	0.228	Data Not Gamma Distributed							
1470	Anderson-Darling (Gamma ROS Estimates)				N/A	0.734								
1471	Kolmogorov-Smirnov (Gamma ROS Est.)				N/A	0.221								
1472														
1473	Lognormal GOF Test Results													
1474														
1475					No NDs	NDs = DL	NDs = DL/2	Log ROS						
1476	Correlation Coefficient R				1	0.836	0.807	N/A						
1477														
1478					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)							
1479	Shapiro-Wilk (NDs = DL)				0.73	0.881	Data Not Lognormal							
1480	Shapiro-Wilk (NDs = DL/2)				0.668	0.881	Data Not Lognormal							
1481	Shapiro-Wilk (Lognormal ROS Estimates)				0.98	0.881	Data Appear Lognormal							
1482	Lilliefors (Detects Only)				N/A	N/A								
1483	Lilliefors (NDs = DL)				0.326	0.22	Data Not Lognormal							
1484	Lilliefors (NDs = DL/2)				0.369	0.22	Data Not Lognormal							
1485	Lilliefors (Lognormal ROS Estimates)				0.114	0.22	Data Appear Lognormal							
1486														
1487	Note: Substitution methods such as DL or DL/2 are not recommended.													
1488														
1489	Lead (m-58a)													
1490														
1491					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs				
1492	Raw Statistics				20	5	15	4	11	73.33%				
1493														
1494					Number	Minimum	Maximum	Mean	Median	SD				
1495	Statistics (Non-Detects Only)				11	1.0000E-4	0.01	0.00151	5.0000E-4	0.00286				
1496	Statistics (Non-Detects Only)				4	5.6000E-4	0.0011	7.5750E-4	6.8500E-4	2.4824E-4				
1497	Statistics (All: NDs treated as DL value)				15	1.0000E-4	0.01	0.00131	5.0000E-4	0.00244				
1498	Statistics (All: NDs treated as DL/2 value)				15	5.0000E-5	0.005	7.5533E-4	2.5000E-4	0.00121				
1499	Statistics (Normal ROS Imputed Data)				15	-4.574E-4	0.0011	2.3731E-4	2.2485E-4	3.9925E-4				
1500	Statistics (Gamma ROS Imputed Data)				15	5.6000E-4	0.01	0.00754	0.01	0.00423				

	A	B	C	D	E	F	G	H	I	J	K	L
1501	Statistics (Lognormal ROS Imputed Data)				15	1.6156E-4	0.0011	4.3214E-4	3.7674E-4	2.4345E-4		
1502												
1503					K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
1504	Statistics (Non-Detects Only)				13.53	3.548	5.6000E-5	-7.223	0.31	-0.0429		
1505	Statistics (NDs = DL)				0.924	0.784	0.00142	-7.269	0.97	-0.133		
1506	Statistics (NDs = DL/2)				0.982	0.83	7.6913E-4	-7.777	1.03	-0.132		
1507	Statistics (Gamma ROS Estimates)				1.347	1.122	0.00559	-5.303	1.207	-0.228		
1508	Statistics (Lognormal ROS Estimates)				--	--	--	-7.869	0.496	-0.063		
1509												
1510	Normal GOF Test Results											
1511												
1512					No NDs	NDs = DL	NDs = DL/2	Normal ROS				
1513	Correlation Coefficient R				0.94	0.618	0.683	0.983				
1514												
1515					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
1516	Shapiro-Wilk (Detects Only)				0.878	0.748	Data Appear Normal					
1517	Shapiro-Wilk (NDs = DL)				0.415	0.881	Data Not Normal					
1518	Shapiro-Wilk (NDs = DL/2)				0.497	0.881	Data Not Normal					
1519	Shapiro-Wilk (Normal ROS Estimates)				0.973	0.881	Data Appear Normal					
1520	Lilliefors (Detects Only)				0.25	0.375	Data Appear Normal					
1521	Lilliefors (NDs = DL)				0.401	0.22	Data Not Normal					
1522	Lilliefors (NDs = DL/2)				0.322	0.22	Data Not Normal					
1523	Lilliefors (Normal ROS Estimates)				0.175	0.22	Data Appear Normal					
1524												
1525	Gamma GOF Test Results											
1526												
1527					No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
1528	Correlation Coefficient R				0.975	0.836	0.876	0.568				
1529												
1530					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
1531	Anderson-Darling (Detects Only)				0.366	0.657						
1532	Kolmogorov-Smirnov (Detects Only)				0.285	0.395	Detected Data Appear Gamma Distributed					
1533	Anderson-Darling (NDs = DL)				2.236	0.767						
1534	Kolmogorov-Smirnov (NDs = DL)				0.29	0.229	Data Not Gamma Distributed					
1535	Anderson-Darling (NDs = DL/2)				1.273	0.764						
1536	Kolmogorov-Smirnov (NDs = DL/2)				0.248	0.228	Data Not Gamma Distributed					
1537	Anderson-Darling (Gamma ROS Estimates)				3.379	0.757						
1538	Kolmogorov-Smirnov (Gamma ROS Est.)				0.469	0.226	Data Not Gamma Distributed					
1539												
1540	Lognormal GOF Test Results											
1541												
1542					No NDs	NDs = DL	NDs = DL/2	Log ROS				
1543	Correlation Coefficient R				0.956	0.87	0.93	0.983				
1544												
1545					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
1546	Shapiro-Wilk (Detects Only)				0.905	0.748	Data Appear Lognormal					
1547	Shapiro-Wilk (NDs = DL)				0.795	0.881	Data Not Lognormal					
1548	Shapiro-Wilk (NDs = DL/2)				0.892	0.881	Data Appear Lognormal					
1549	Shapiro-Wilk (Lognormal ROS Estimates)				0.973	0.881	Data Appear Lognormal					
1550	Lilliefors (Detects Only)				0.254	0.375	Data Appear Lognormal					

	A	B	C	D	E	F	G	H	I	J	K	L
1551	Lilliefors (NDs = DL)				0.299	0.22	Data Not Lognormal					
1552	Lilliefors (NDs = DL/2)				0.241	0.22	Data Not Lognormal					
1553	Lilliefors (Lognormal ROS Estimates)				0.175	0.22	Data Appear Lognormal					
1554												
1555	Note: Substitution methods such as DL or DL/2 are not recommended.											
1556												
1557	Lead (m-62a)											
1558												
1559					Num Obs	Num Miss	Num Valid	Detects		NDs	% NDs	
1560	Raw Statistics				20	5	15	0		15	100.00%	
1561												
1562	Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!											
1563	Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!											
1564	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).											
1565												
1566	The data set for variable Lead (m-62a) was not processed!											
1567												
1568												
1569												
1570	Lithium (m-56a)											
1571												
1572					Num Obs	Num Miss	Num Valid	Detects		NDs	% NDs	
1573	Raw Statistics				20	4	16	0		16	100.00%	
1574												
1575	Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!											
1576	Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!											
1577	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).											
1578												
1579	The data set for variable Lithium (m-56a) was not processed!											
1580												
1581												
1582												
1583	Lithium (m-57a)											
1584												
1585					Num Obs	Num Miss	Num Valid	Detects		NDs	% NDs	
1586	Raw Statistics				20	4	16	0		16	100.00%	
1587												
1588	Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!											
1589	Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!											
1590	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).											
1591												
1592	The data set for variable Lithium (m-57a) was not processed!											
1593												
1594												
1595												
1596	Lithium (m-58a)											
1597												
1598					Num Obs	Num Miss	Num Valid	Detects		NDs	% NDs	
1599	Raw Statistics				20	4	16	0		16	100.00%	
1600												

	A	B	C	D	E	F	G	H	I	J	K	L
1601	Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!											
1602	Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!											
1603	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).											
1604												
1605	The data set for variable Lithium (m-58a) was not processed!											
1606												
1607												
1608												
1609	Lithium (m-62a)											
1610												
1611					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
1612	Raw Statistics				20	4	16	0	16	100.00%		
1613												
1614	Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!											
1615	Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!											
1616	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).											
1617												
1618	The data set for variable Lithium (m-62a) was not processed!											
1619												
1620												
1621												
1622	Mercury (m-56a)											
1623												
1624					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
1625	Raw Statistics				20	5	15	0	15	100.00%		
1626												
1627	Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!											
1628	Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!											
1629	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).											
1630												
1631	The data set for variable Mercury (m-56a) was not processed!											
1632												
1633												
1634												
1635	Mercury (m-57a)											
1636												
1637					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
1638	Raw Statistics				20	5	15	0	15	100.00%		
1639												
1640	Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!											
1641	Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!											
1642	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).											
1643												
1644	The data set for variable Mercury (m-57a) was not processed!											
1645												
1646												
1647												
1648	Mercury (m-58a)											
1649												
1650					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		

	A	B	C	D	E	F	G	H	I	J	K	L
1651	Raw Statistics				20	5	15	0	15	100.00%		
1652												
1653	Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!											
1654	Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!											
1655	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).											
1656												
1657	The data set for variable Mercury (m-58a) was not processed!											
1658												
1659												
1660												
1661	Mercury (m-62a)											
1662												
1663					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
1664	Raw Statistics				20	5	15	0	15	100.00%		
1665												
1666	Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!											
1667	Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!											
1668	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).											
1669												
1670	The data set for variable Mercury (m-62a) was not processed!											
1671												
1672												
1673												
1674	Molybdenum (m-56a)											
1675												
1676					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
1677	Raw Statistics				20	1	19	17	2	10.53%		
1678												
1679					Number	Minimum	Maximum	Mean	Median	SD		
1680	Statistics (Non-Detects Only)				2	0.011	0.014	0.0125	0.0125	0.00212		
1681	Statistics (Non-Detects Only)				17	0.0057	0.029	0.0126	0.0098	0.00626		
1682	Statistics (All: NDs treated as DL value)				19	0.0057	0.029	0.0126	0.011	0.00592		
1683	Statistics (All: NDs treated as DL/2 value)				19	0.0055	0.029	0.0119	0.0096	0.00624		
1684	Statistics (Normal ROS Imputed Data)				19	0.0057	0.029	0.0123	0.0098	0.00598		
1685	Statistics (Gamma ROS Imputed Data)				19	0.0057	0.029	0.0123	0.01	0.00596		
1686	Statistics (Lognormal ROS Imputed Data)				19	0.0057	0.029	0.0122	0.0098	0.006		
1687												
1688					K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
1689	Statistics (Non-Detects Only)				5.445	4.524	0.00231	-4.47	0.429	-0.096		
1690	Statistics (NDs = DL)				6.015	5.1	0.00209	-4.462	0.407	-0.0913		
1691	Statistics (NDs = DL/2)				4.938	4.194	0.00241	-4.535	0.45	-0.0993		
1692	Statistics (Gamma ROS Estimates)				5.909	5.011	0.00208	-4.484	0.407	-0.0907		
1693	Statistics (Lognormal ROS Estimates)				--	--	--	-4.493	0.411	-0.0915		
1694												
1695	Normal GOF Test Results											
1696												
1697					No NDs	NDs = DL	NDs = DL/2	Normal ROS				
1698	Correlation Coefficient R				0.901	0.905	0.902	0.885				
1699												
1700					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					

	A	B	C	D	E	F	G	H	I	J	K	L		
1701	Shapiro-Wilk (Detects Only)				0.818	0.892	Data Not Normal							
1702	Shapiro-Wilk (NDs = DL)				0.826	0.901	Data Not Normal							
1703	Shapiro-Wilk (NDs = DL/2)				0.818	0.901	Data Not Normal							
1704	Shapiro-Wilk (Normal ROS Estimates)				0.793	0.901	Data Not Normal							
1705	Lilliefors (Detects Only)				0.247	0.207	Data Not Normal							
1706	Lilliefors (NDs = DL)				0.236	0.197	Data Not Normal							
1707	Lilliefors (NDs = DL/2)				0.243	0.197	Data Not Normal							
1708	Lilliefors (Normal ROS Estimates)				0.268	0.197	Data Not Normal							
1709														
1710	Gamma GOF Test Results													
1711														
1712					No NDs	NDs = DL	NDs = DL/2	Gamma ROS						
1713	Correlation Coefficient R				0.959	0.96	0.962	0.945						
1714														
1715					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)							
1716	Anderson-Darling (Detects Only)				0.805	0.741								
1717	Kolmogorov-Smirnov (Detects Only)				0.211	0.21	Data Not Gamma Distributed							
1718	Anderson-Darling (NDs = DL)				0.741	0.742								
1719	Kolmogorov-Smirnov (NDs = DL)				0.204	0.199	Detected Data appear Approximate Gamma Distributed							
1720	Anderson-Darling (NDs = DL/2)				0.726	0.743								
1721	Kolmogorov-Smirnov (NDs = DL/2)				0.194	0.199	Data Appear Gamma Distributed							
1722	Anderson-Darling (Gamma ROS Estimates)				1.085	0.742								
1723	Kolmogorov-Smirnov (Gamma ROS Est.)				0.236	0.199	Data Not Gamma Distributed							
1724														
1725	Lognormal GOF Test Results													
1726														
1727					No NDs	NDs = DL	NDs = DL/2	Log ROS						
1728	Correlation Coefficient R				0.965	0.97	0.972	0.952						
1729														
1730					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)							
1731	Shapiro-Wilk (Detects Only)				0.932	0.892	Data Appear Lognormal							
1732	Shapiro-Wilk (NDs = DL)				0.945	0.901	Data Appear Lognormal							
1733	Shapiro-Wilk (NDs = DL/2)				0.942	0.901	Data Appear Lognormal							
1734	Shapiro-Wilk (Lognormal ROS Estimates)				0.912	0.901	Data Appear Lognormal							
1735	Lilliefors (Detects Only)				0.184	0.207	Data Appear Lognormal							
1736	Lilliefors (NDs = DL)				0.179	0.197	Data Appear Lognormal							
1737	Lilliefors (NDs = DL/2)				0.162	0.197	Data Appear Lognormal							
1738	Lilliefors (Lognormal ROS Estimates)				0.201	0.197	Data Not Lognormal							
1739														
1740	Note: Substitution methods such as DL or DL/2 are not recommended.													
1741														
1742	Molybdenum (m-57a)													
1743														
1744					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs				
1745	Raw Statistics				20	2	18	17	1	5.56%				
1746														
1747					Number	Minimum	Maximum	Mean	Median	SD				
1748	Statistics (Non-Detects Only)				1	0.0068	0.0068	0.0068	0.0068	N/A				
1749	Statistics (Non-Detects Only)				17	0.0011	0.022	0.00544	0.0042	0.00463				
1750	Statistics (All: NDs treated as DL value)				18	0.0011	0.022	0.00552	0.0044	0.0045				

	A	B	C	D	E	F	G	H	I	J	K	L
1751	Statistics (All: NDs treated as DL/2 value)				18	0.0011	0.022	0.00533	0.00415	0.00452		
1752	Statistics (Normal ROS Imputed Data)				18	0.0011	0.022	0.00539	0.00436	0.0045		
1753	Statistics (Gamma ROS Imputed Data)				18	0.0011	0.022	0.00569	0.0044	0.00462		
1754	Statistics (Lognormal ROS Imputed Data)				18	0.0011	0.022	0.00535	0.00415	0.00451		
1755												
1756					K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
1757	Statistics (Non-Detects Only)				2.574	2.159	0.00211	-5.42	0.624	-0.115		
1758	Statistics (NDs = DL)				2.699	2.286	0.00204	-5.397	0.614	-0.114		
1759	Statistics (NDs = DL/2)				2.652	2.247	0.00201	-5.435	0.609	-0.112		
1760	Statistics (Gamma ROS Estimates)				2.572	2.18	0.00221	-5.375	0.635	-0.118		
1761	Statistics (Lognormal ROS Estimates)				--	--	--	-5.429	0.607	-0.112		
1762												
1763	Normal GOF Test Results											
1764												
1765					No NDs	NDs = DL	NDs = DL/2	Normal ROS				
1766	Correlation Coefficient R				0.773	0.782	0.766	0.765				
1767												
1768					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
1769	Shapiro-Wilk (Detects Only)				0.629	0.892	Data Not Normal					
1770	Shapiro-Wilk (NDs = DL)				0.643	0.897	Data Not Normal					
1771	Shapiro-Wilk (NDs = DL/2)				0.617	0.897	Data Not Normal					
1772	Shapiro-Wilk (Normal ROS Estimates)				0.618	0.897	Data Not Normal					
1773	Lilliefors (Detects Only)				0.261	0.207	Data Not Normal					
1774	Lilliefors (NDs = DL)				0.235	0.202	Data Not Normal					
1775	Lilliefors (NDs = DL/2)				0.269	0.202	Data Not Normal					
1776	Lilliefors (Normal ROS Estimates)				0.274	0.202	Data Not Normal					
1777												
1778	Gamma GOF Test Results											
1779												
1780					No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
1781	Correlation Coefficient R				0.88	0.883	0.874	0.915				
1782												
1783					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
1784	Anderson-Darling (Detects Only)				0.832	0.747						
1785	Kolmogorov-Smirnov (Detects Only)				0.2	0.211	Detected Data appear Approximate Gamma Distr					
1786	Anderson-Darling (NDs = DL)				0.745	0.748						
1787	Kolmogorov-Smirnov (NDs = DL)				0.173	0.205	Data Appear Gamma Distributed					
1788	Anderson-Darling (NDs = DL/2)				0.915	0.748						
1789	Kolmogorov-Smirnov (NDs = DL/2)				0.206	0.205	Data Not Gamma Distributed					
1790	Anderson-Darling (Gamma ROS Estimates)				0.661	0.749						
1791	Kolmogorov-Smirnov (Gamma ROS Est.)				0.188	0.206	Data Appear Gamma Distributed					
1792												
1793	Lognormal GOF Test Results											
1794												
1795					No NDs	NDs = DL	NDs = DL/2	Log ROS				
1796	Correlation Coefficient R				0.949	0.954	0.946	0.944				
1797												
1798					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
1799	Shapiro-Wilk (Detects Only)				0.929	0.892	Data Appear Lognormal					
1800	Shapiro-Wilk (NDs = DL)				0.937	0.897	Data Appear Lognormal					

	A	B	C	D	E	F	G	H	I	J	K	L		
1801	Shapiro-Wilk (NDs = DL/2)				0.924	0.897	Data Appear Lognormal							
1802	Shapiro-Wilk (Lognormal ROS Estimates)				0.921	0.897	Data Appear Lognormal							
1803	Lilliefors (Detects Only)				0.154	0.207	Data Appear Lognormal							
1804	Lilliefors (NDs = DL)				0.129	0.202	Data Appear Lognormal							
1805	Lilliefors (NDs = DL/2)				0.16	0.202	Data Appear Lognormal							
1806	Lilliefors (Lognormal ROS Estimates)				0.163	0.202	Data Appear Lognormal							
1807														
1808	Note: Substitution methods such as DL or DL/2 are not recommended.													
1809														
1810	Molybdenum (m-58a)													
1811														
1812					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs				
1813	Raw Statistics				20	2	18	14	4	22.22%				
1814														
1815					Number	Minimum	Maximum	Mean	Median	SD				
1816	Statistics (Non-Detects Only)				4	0.0018	0.01	0.00385	0.0018	0.0041				
1817	Statistics (Non-Detects Only)				14	0.0014	0.02	0.00336	0.0018	0.00486				
1818	Statistics (All: NDs treated as DL value)				18	0.0014	0.02	0.00347	0.0018	0.00459				
1819	Statistics (All: NDs treated as DL/2 value)				18	9.0000E-4	0.02	0.00304	0.0018	0.00438				
1820	Statistics (Normal ROS Imputed Data)				18	-0.00129	0.02	0.00277	0.0018	0.00445				
1821	Statistics (Gamma ROS Imputed Data)				18	0.0014	0.02	0.00483	0.00215	0.00511				
1822	Statistics (Lognormal ROS Imputed Data)				18	0.00103	0.02	0.00295	0.0018	0.00433				
1823														
1824					K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV				
1825	Statistics (Non-Detects Only)				1.507	1.232	0.00223	-6.064	0.687	-0.113				
1826	Statistics (NDs = DL)				1.531	1.313	0.00226	-6.025	0.704	-0.117				
1827	Statistics (NDs = DL/2)				1.449	1.244	0.0021	-6.18	0.735	-0.119				
1828	Statistics (Gamma ROS Estimates)				1.37	1.179	0.00353	-5.74	0.866	-0.151				
1829	Statistics (Lognormal ROS Estimates)				--	--	--	-6.167	0.644	-0.104				
1830														
1831	Normal GOF Test Results													
1832														
1833					No NDs	NDs = DL	NDs = DL/2	Normal ROS						
1834	Correlation Coefficient R				0.616	0.666	0.646	0.657						
1835														
1836					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)							
1837	Shapiro-Wilk (Detects Only)				0.41	0.874	Data Not Normal							
1838	Shapiro-Wilk (NDs = DL)				0.469	0.897	Data Not Normal							
1839	Shapiro-Wilk (NDs = DL/2)				0.448	0.897	Data Not Normal							
1840	Shapiro-Wilk (Normal ROS Estimates)				0.469	0.897	Data Not Normal							
1841	Lilliefors (Detects Only)				0.427	0.226	Data Not Normal							
1842	Lilliefors (NDs = DL)				0.417	0.202	Data Not Normal							
1843	Lilliefors (NDs = DL/2)				0.382	0.202	Data Not Normal							
1844	Lilliefors (Normal ROS Estimates)				0.413	0.202	Data Not Normal							
1845														
1846	Gamma GOF Test Results													
1847														
1848					No NDs	NDs = DL	NDs = DL/2	Gamma ROS						
1849	Correlation Coefficient R				0.801	0.852	0.823	0.944						
1850														

	A	B	C	D	E	F	G	H	I	J	K	L	
1851					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)						
1852	Anderson-Darling (Detects Only)				2.705	0.751							
1853	Kolmogorov-Smirnov (Detects Only)				0.383	0.233	Data Not Gamma Distributed						
1854	Anderson-Darling (NDs = DL)				3.325	0.756							
1855	Kolmogorov-Smirnov (NDs = DL)				0.375	0.207	Data Not Gamma Distributed						
1856	Anderson-Darling (NDs = DL/2)				2.077	0.757							
1857	Kolmogorov-Smirnov (NDs = DL/2)				0.311	0.207	Data Not Gamma Distributed						
1858	Anderson-Darling (Gamma ROS Estimates)				2.023	0.759							
1859	Kolmogorov-Smirnov (Gamma ROS Est.)				0.32	0.208	Data Not Gamma Distributed						
1860													
1861	Lognormal GOF Test Results												
1862													
1863					No NDs	NDs = DL	NDs = DL/2	Log ROS					
1864	Correlation Coefficient R				0.782	0.8	0.892	0.802					
1865													
1866					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)						
1867	Shapiro-Wilk (Detects Only)				0.636	0.874	Data Not Lognormal						
1868	Shapiro-Wilk (NDs = DL)				0.654	0.897	Data Not Lognormal						
1869	Shapiro-Wilk (NDs = DL/2)				0.813	0.897	Data Not Lognormal						
1870	Shapiro-Wilk (Lognormal ROS Estimates)				0.673	0.897	Data Not Lognormal						
1871	Lilliefors (Detects Only)				0.318	0.226	Data Not Lognormal						
1872	Lilliefors (NDs = DL)				0.331	0.202	Data Not Lognormal						
1873	Lilliefors (NDs = DL/2)				0.245	0.202	Data Not Lognormal						
1874	Lilliefors (Lognormal ROS Estimates)				0.304	0.202	Data Not Lognormal						
1875													
1876	Note: Substitution methods such as DL or DL/2 are not recommended.												
1877													
1878	Molybdenum (m-62a)												
1879													
1880					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs			
1881	Raw Statistics				20	2	18	16	2	11.11%			
1882													
1883					Number	Minimum	Maximum	Mean	Median	SD			
1884	Statistics (Non-Detects Only)				2	0.0026	0.0028	0.0027	0.0027	1.4142E-4			
1885	Statistics (Non-Detects Only)				16	0.0019	0.011	0.00297	0.0023	0.00222			
1886	Statistics (All: NDs treated as DL value)				18	0.0019	0.011	0.00294	0.0023	0.00209			
1887	Statistics (All: NDs treated as DL/2 value)				18	0.0013	0.011	0.00279	0.00225	0.00215			
1888	Statistics (Normal ROS Imputed Data)				18	0.0019	0.011	0.00292	0.0023	0.00209			
1889	Statistics (Gamma ROS Imputed Data)				18	0.0019	0.011	0.00375	0.0023	0.00308			
1890	Statistics (Lognormal ROS Imputed Data)				18	0.0019	0.011	0.0029	0.0023	0.00209			
1891													
1892					K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV			
1893	Statistics (Non-Detects Only)				4.167	3.427	7.1244E-4	-5.944	0.429	-0.0721			
1894	Statistics (NDs = DL)				4.648	3.91	6.3228E-4	-5.941	0.403	-0.0679			
1895	Statistics (NDs = DL/2)				3.834	3.232	7.2738E-4	-6.018	0.457	-0.0759			
1896	Statistics (Gamma ROS Estimates)				2.54	2.154	0.00148	-5.796	0.591	-0.102			
1897	Statistics (Lognormal ROS Estimates)				--	--	--	-5.956	0.404	-0.0679			
1898													
1899	Normal GOF Test Results												
1900													

	A	B	C	D	E	F	G	H	I	J	K	L
1901					No NDs	NDs = DL	NDs = DL/2	Normal ROS				
1902	Correlation Coefficient R				0.646	0.641	0.677	0.632				
1903												
1904					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
1905	Shapiro-Wilk (Detects Only)				0.448	0.887	Data Not Normal					
1906	Shapiro-Wilk (NDs = DL)				0.441	0.897	Data Not Normal					
1907	Shapiro-Wilk (NDs = DL/2)				0.49	0.897	Data Not Normal					
1908	Shapiro-Wilk (Normal ROS Estimates)				0.43	0.897	Data Not Normal					
1909	Lilliefors (Detects Only)				0.378	0.213	Data Not Normal					
1910	Lilliefors (NDs = DL)				0.377	0.202	Data Not Normal					
1911	Lilliefors (NDs = DL/2)				0.368	0.202	Data Not Normal					
1912	Lilliefors (Normal ROS Estimates)				0.394	0.202	Data Not Normal					
1913												
1914	Gamma GOF Test Results											
1915												
1916					No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
1917	Correlation Coefficient R				0.766	0.754	0.787	0.872				
1918												
1919					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
1920	Anderson-Darling (Detects Only)				2.946	0.742						
1921	Kolmogorov-Smirnov (Detects Only)				0.352	0.216	Data Not Gamma Distributed					
1922	Anderson-Darling (NDs = DL)				3.048	0.743						
1923	Kolmogorov-Smirnov (NDs = DL)				0.318	0.204	Data Not Gamma Distributed					
1924	Anderson-Darling (NDs = DL/2)				2.395	0.743						
1925	Kolmogorov-Smirnov (NDs = DL/2)				0.323	0.205	Data Not Gamma Distributed					
1926	Anderson-Darling (Gamma ROS Estimates)				3.12	0.749						
1927	Kolmogorov-Smirnov (Gamma ROS Est.)				0.353	0.206	Data Not Gamma Distributed					
1928												
1929	Lognormal GOF Test Results											
1930												
1931					No NDs	NDs = DL	NDs = DL/2	Log ROS				
1932	Correlation Coefficient R				0.762	0.771	0.845	0.744				
1933												
1934					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
1935	Shapiro-Wilk (Detects Only)				0.606	0.887	Data Not Lognormal					
1936	Shapiro-Wilk (NDs = DL)				0.621	0.897	Data Not Lognormal					
1937	Shapiro-Wilk (NDs = DL/2)				0.744	0.897	Data Not Lognormal					
1938	Shapiro-Wilk (Lognormal ROS Estimates)				0.581	0.897	Data Not Lognormal					
1939	Lilliefors (Detects Only)				0.331	0.213	Data Not Lognormal					
1940	Lilliefors (NDs = DL)				0.289	0.202	Data Not Lognormal					
1941	Lilliefors (NDs = DL/2)				0.29	0.202	Data Not Lognormal					
1942	Lilliefors (Lognormal ROS Estimates)				0.352	0.202	Data Not Lognormal					
1943												
1944	Note: Substitution methods such as DL or DL/2 are not recommended.											
1945												
1946	Radium (m-56a)											
1947												
1948					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
1949	Raw Statistics				20	3	17	11	6	35.29%		
1950												

	A	B	C	D	E	F	G	H	I	J	K	L
1951					Number	Minimum	Maximum	Mean	Median	SD		
1952	Statistics (Non-Detects Only)				6	0.4	1.2	0.75	0.7	0.274		
1953	Statistics (Non-Detects Only)				11	0.5	1.9	1.209	1.4	0.556		
1954	Statistics (All: NDs treated as DL value)				17	0.4	1.9	1.047	0.9	0.517		
1955	Statistics (All: NDs treated as DL/2 value)				17	0.2	1.9	0.915	0.6	0.606		
1956	Statistics (Normal ROS Imputed Data)				17	-0.194	1.9	0.903	0.6	0.636		
1957	Statistics (Gamma ROS Imputed Data)				17	0.148	1.9	0.945	0.6	0.583		
1958	Statistics (Lognormal ROS Imputed Data)				17	0.275	1.9	0.951	0.6	0.573		
1959												
1960					K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
1961	Statistics (Non-Detects Only)				4.258	3.157	0.284	0.0679	0.548	8.074		
1962	Statistics (NDs = DL)				4.21	3.506	0.249	-0.0775	0.521	-6.732		
1963	Statistics (NDs = DL/2)				2.299	1.933	0.398	-0.322	0.726	-2.254		
1964	Statistics (Gamma ROS Estimates)				2.549	2.138	0.371	-0.265	0.706	-2.66		
1965	Statistics (Lognormal ROS Estimates)				--	--	--	-0.229	0.622	-2.719		
1966												
1967	Normal GOF Test Results											
1968												
1969					No NDs	NDs = DL	NDs = DL/2	Normal ROS				
1970	Correlation Coefficient R				0.941	0.955	0.933	0.959				
1971												
1972					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
1973	Shapiro-Wilk (Detects Only)				0.857	0.85	Data Appear Normal					
1974	Shapiro-Wilk (NDs = DL)				0.892	0.892	Data Not Normal					
1975	Shapiro-Wilk (NDs = DL/2)				0.851	0.892	Data Not Normal					
1976	Shapiro-Wilk (Normal ROS Estimates)				0.908	0.892	Data Appear Normal					
1977	Lilliefors (Detects Only)				0.227	0.251	Data Appear Normal					
1978	Lilliefors (NDs = DL)				0.219	0.207	Data Not Normal					
1979	Lilliefors (NDs = DL/2)				0.286	0.207	Data Not Normal					
1980	Lilliefors (Normal ROS Estimates)				0.218	0.207	Data Not Normal					
1981												
1982	Gamma GOF Test Results											
1983												
1984					No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
1985	Correlation Coefficient R				0.906	0.957	0.935	0.939				
1986												
1987					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
1988	Anderson-Darling (Detects Only)				0.89	0.732						
1989	Kolmogorov-Smirnov (Detects Only)				0.233	0.256	Detected Data appear Approximate Gamma Distrib					
1990	Anderson-Darling (NDs = DL)				0.685	0.743						
1991	Kolmogorov-Smirnov (NDs = DL)				0.198	0.21	Data Appear Gamma Distributed					
1992	Anderson-Darling (NDs = DL/2)				0.828	0.748						
1993	Kolmogorov-Smirnov (NDs = DL/2)				0.232	0.211	Data Not Gamma Distributed					
1994	Anderson-Darling (Gamma ROS Estimates)				0.779	0.747						
1995	Kolmogorov-Smirnov (Gamma ROS Est.)				0.206	0.211	Detected Data appear Approximate Gamma Distrib					
1996												
1997	Lognormal GOF Test Results											
1998												
1999					No NDs	NDs = DL	NDs = DL/2	Log ROS				
2000	Correlation Coefficient R				0.917	0.965	0.962	0.948				

	A	B	C	D	E	F	G	H	I	J	K	L	
2001													
2002					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)						
2003	Shapiro-Wilk (Detects Only)				0.814	0.85	Data Not Lognormal						
2004	Shapiro-Wilk (NDs = DL)				0.911	0.892	Data Appear Lognormal						
2005	Shapiro-Wilk (NDs = DL/2)				0.91	0.892	Data Appear Lognormal						
2006	Shapiro-Wilk (Lognormal ROS Estimates)				0.885	0.892	Data Not Lognormal						
2007	Lilliefors (Detects Only)				0.233	0.251	Data Appear Lognormal						
2008	Lilliefors (NDs = DL)				0.174	0.207	Data Appear Lognormal						
2009	Lilliefors (NDs = DL/2)				0.191	0.207	Data Appear Lognormal						
2010	Lilliefors (Lognormal ROS Estimates)				0.217	0.207	Data Not Lognormal						
2011													
2012	Note: Substitution methods such as DL or DL/2 are not recommended.												
2013													
2014	Radium (m-57a)												
2015													
2016					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs			
2017	Raw Statistics				20	3	17	5	12	70.59%			
2018													
2019					Number	Minimum	Maximum	Mean	Median	SD			
2020	Statistics (Non-Detects Only)				12	0.4	0.9	0.658	0.7	0.116			
2021	Statistics (Non-Detects Only)				5	0.5	1.5	0.88	0.7	0.415			
2022	Statistics (All: NDs treated as DL value)				17	0.4	1.5	0.724	0.7	0.251			
2023	Statistics (All: NDs treated as DL/2 value)				17	0.2	1.5	0.491	0.35	0.335			
2024	Statistics (Normal ROS Imputed Data)				17	-0.391	1.5	0.32	0.254	0.5			
2025	Statistics (Gamma ROS Imputed Data)				17	0.01	1.5	0.402	0.282	0.412			
2026	Statistics (Lognormal ROS Imputed Data)				17	0.191	1.5	0.504	0.397	0.34			
2027													
2028					K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV			
2029	Statistics (Non-Detects Only)				6.104	2.575	0.144	-0.212	0.452	-2.133			
2030	Statistics (NDs = DL)				11.3	9.343	0.064	-0.369	0.295	-0.8			
2031	Statistics (NDs = DL/2)				3.563	2.973	0.138	-0.858	0.511	-0.595			
2032	Statistics (Gamma ROS Estimates)				0.695	0.611	0.578	-1.783	1.74	-0.976			
2033	Statistics (Lognormal ROS Estimates)				--	--	--	-0.849	0.565	-0.666			
2034													
2035	Normal GOF Test Results												
2036													
2037					No NDs	NDs = DL	NDs = DL/2	Normal ROS					
2038	Correlation Coefficient R				0.951	0.853	0.819	0.978					
2039													
2040					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)						
2041	Shapiro-Wilk (Detects Only)				0.896	0.762	Data Appear Normal						
2042	Shapiro-Wilk (NDs = DL)				0.753	0.892	Data Not Normal						
2043	Shapiro-Wilk (NDs = DL/2)				0.687	0.892	Data Not Normal						
2044	Shapiro-Wilk (Normal ROS Estimates)				0.957	0.892	Data Appear Normal						
2045	Lilliefors (Detects Only)				0.268	0.343	Data Appear Normal						
2046	Lilliefors (NDs = DL)				0.361	0.207	Data Not Normal						
2047	Lilliefors (NDs = DL/2)				0.31	0.207	Data Not Normal						
2048	Lilliefors (Normal ROS Estimates)				0.106	0.207	Data Appear Normal						
2049													
2050	Gamma GOF Test Results												

	A	B	C	D	E	F	G	H	I	J	K	L
2051												
2052					No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
2053	Correlation Coefficient R				0.985	0.9	0.918	0.986				
2054												
2055					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
2056	Anderson-Darling (Detects Only)				0.317	0.68						
2057	Kolmogorov-Smirnov (Detects Only)				0.258	0.358	Detected Data Appear Gamma Distributed					
2058	Anderson-Darling (NDs = DL)				1.285	0.739						
2059	Kolmogorov-Smirnov (NDs = DL)				0.328	0.209	Data Not Gamma Distributed					
2060	Anderson-Darling (NDs = DL/2)				1.513	0.744						
2061	Kolmogorov-Smirnov (NDs = DL/2)				0.311	0.21	Data Not Gamma Distributed					
2062	Anderson-Darling (Gamma ROS Estimates)				0.534	0.781						
2063	Kolmogorov-Smirnov (Gamma ROS Est.)				0.161	0.218	Data Appear Gamma Distributed					
2064												
2065	Lognormal GOF Test Results											
2066												
2067					No NDs	NDs = DL	NDs = DL/2	Log ROS				
2068	Correlation Coefficient R				0.976	0.92	0.917	0.981				
2069												
2070					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
2071	Shapiro-Wilk (Detects Only)				0.94	0.762	Data Appear Lognormal					
2072	Shapiro-Wilk (NDs = DL)				0.87	0.892	Data Not Lognormal					
2073	Shapiro-Wilk (NDs = DL/2)				0.852	0.892	Data Not Lognormal					
2074	Shapiro-Wilk (Lognormal ROS Estimates)				0.96	0.892	Data Appear Lognormal					
2075	Lilliefors (Detects Only)				0.226	0.343	Data Appear Lognormal					
2076	Lilliefors (NDs = DL)				0.308	0.207	Data Not Lognormal					
2077	Lilliefors (NDs = DL/2)				0.294	0.207	Data Not Lognormal					
2078	Lilliefors (Lognormal ROS Estimates)				0.0985	0.207	Data Appear Lognormal					
2079												
2080	Note: Substitution methods such as DL or DL/2 are not recommended.											
2081												
2082	Radium (m-58a)											
2083												
2084					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
2085	Raw Statistics				20	3	17	8	9	52.94%		
2086												
2087					Number	Minimum	Maximum	Mean	Median	SD		
2088	Statistics (Non-Detects Only)				9	0.6	0.9	0.689	0.7	0.0928		
2089	Statistics (Non-Detects Only)				8	0.7	2.6	1.4	1.05	0.729		
2090	Statistics (All: NDs treated as DL value)				17	0.6	2.6	1.024	0.7	0.609		
2091	Statistics (All: NDs treated as DL/2 value)				17	0.3	2.6	0.841	0.45	0.727		
2092	Statistics (Normal ROS Imputed Data)				17	-1.592	2.6	0.323	0.0561	1.217		
2093	Statistics (Gamma ROS Imputed Data)				17	0.01	2.6	0.681	0.21	0.85		
2094	Statistics (Lognormal ROS Imputed Data)				17	0.155	2.6	0.829	0.489	0.74		
2095												
2096					K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
2097	Statistics (Non-Detects Only)				4.536	2.918	0.309	0.222	0.505	2.272		
2098	Statistics (NDs = DL)				4.328	3.604	0.236	-0.0967	0.464	-4.803		
2099	Statistics (NDs = DL/2)				1.869	1.579	0.45	-0.464	0.751	-1.62		
2100	Statistics (Gamma ROS Estimates)				0.402	0.37	1.694	-2.019	2.36	-1.169		

	A	B	C	D	E	F	G	H	I	J	K	L	
2101	Statistics (Lognormal ROS Estimates)				--	--	--	-0.529	0.848	-1.603			
2102													
2103	Normal GOF Test Results												
2104													
2105					No NDs	NDs = DL	NDs = DL/2	Normal ROS					
2106	Correlation Coefficient R				0.934	0.827	0.872	0.988					
2107													
2108					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)						
2109	Shapiro-Wilk (Detects Only)				0.856	0.818	Data Appear Normal						
2110	Shapiro-Wilk (NDs = DL)				0.686	0.892	Data Not Normal						
2111	Shapiro-Wilk (NDs = DL/2)				0.757	0.892	Data Not Normal						
2112	Shapiro-Wilk (Normal ROS Estimates)				0.966	0.892	Data Appear Normal						
2113	Lilliefors (Detects Only)				0.254	0.283	Data Appear Normal						
2114	Lilliefors (NDs = DL)				0.345	0.207	Data Not Normal						
2115	Lilliefors (NDs = DL/2)				0.234	0.207	Data Not Normal						
2116	Lilliefors (Normal ROS Estimates)				0.116	0.207	Data Appear Normal						
2117													
2118	Gamma GOF Test Results												
2119													
2120					No NDs	NDs = DL	NDs = DL/2	Gamma ROS					
2121	Correlation Coefficient R				0.965	0.912	0.966	0.943					
2122													
2123					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)						
2124	Anderson-Darling (Detects Only)				0.531	0.719							
2125	Kolmogorov-Smirnov (Detects Only)				0.262	0.295	Detected Data Appear Gamma Distributed						
2126	Anderson-Darling (NDs = DL)				1.877	0.742							
2127	Kolmogorov-Smirnov (NDs = DL)				0.304	0.21	Data Not Gamma Distributed						
2128	Anderson-Darling (NDs = DL/2)				1.189	0.751							
2129	Kolmogorov-Smirnov (NDs = DL/2)				0.255	0.212	Data Not Gamma Distributed						
2130	Anderson-Darling (Gamma ROS Estimates)				1.193	0.819							
2131	Kolmogorov-Smirnov (Gamma ROS Est.)				0.269	0.224	Data Not Gamma Distributed						
2132													
2133	Lognormal GOF Test Results												
2134													
2135					No NDs	NDs = DL	NDs = DL/2	Log ROS					
2136	Correlation Coefficient R				0.955	0.888	0.933	0.987					
2137													
2138					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)						
2139	Shapiro-Wilk (Detects Only)				0.891	0.818	Data Appear Lognormal						
2140	Shapiro-Wilk (NDs = DL)				0.782	0.892	Data Not Lognormal						
2141	Shapiro-Wilk (NDs = DL/2)				0.852	0.892	Data Not Lognormal						
2142	Shapiro-Wilk (Lognormal ROS Estimates)				0.962	0.892	Data Appear Lognormal						
2143	Lilliefors (Detects Only)				0.242	0.283	Data Appear Lognormal						
2144	Lilliefors (NDs = DL)				0.272	0.207	Data Not Lognormal						
2145	Lilliefors (NDs = DL/2)				0.253	0.207	Data Not Lognormal						
2146	Lilliefors (Lognormal ROS Estimates)				0.116	0.207	Data Appear Lognormal						
2147													
2148	Note: Substitution methods such as DL or DL/2 are not recommended.												
2149													
2150	Radium (m-62a)												

	A	B	C	D	E	F	G	H	I	J	K	L
2151												
2152					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
2153	Raw Statistics				20	4	16	13	3	18.75%		
2154												
2155					Number	Minimum	Maximum	Mean	Median	SD		
2156	Statistics (Non-Detects Only)				3	0.7	0.8	0.733	0.7	0.0577		
2157	Statistics (Non-Detects Only)				13	0.5	2	1.077	1	0.421		
2158	Statistics (All: NDs treated as DL value)				16	0.5	2	1.013	0.9	0.401		
2159	Statistics (All: NDs treated as DL/2 value)				16	0.35	2	0.944	0.9	0.473		
2160	Statistics (Normal ROS Imputed Data)				16	0.31	2	0.959	0.9	0.455		
2161	Statistics (Gamma ROS Imputed Data)				16	0.394	2	0.968	0.9	0.445		
2162	Statistics (Lognormal ROS Imputed Data)				16	0.468	2	0.976	0.9	0.435		
2163												
2164					K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
2165	Statistics (Non-Detects Only)				6.931	5.383	0.155	2.3393E-4	0.41	1752		
2166	Statistics (NDs = DL)				7.228	5.915	0.14	-0.0583	0.389	-6.66		
2167	Statistics (NDs = DL/2)				3.993	3.286	0.236	-0.188	0.547	-2.906		
2168	Statistics (Gamma ROS Estimates)				5.098	4.184	0.19	-0.134	0.472	-3.514		
2169	Statistics (Lognormal ROS Estimates)				--	--	--	-0.116	0.446	-3.837		
2170												
2171	Normal GOF Test Results											
2172												
2173					No NDs	NDs = DL	NDs = DL/2	Normal ROS				
2174	Correlation Coefficient R				0.976	0.963	0.974	0.974				
2175												
2176					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
2177	Shapiro-Wilk (Detects Only)				0.953	0.866	Data Appear Normal					
2178	Shapiro-Wilk (NDs = DL)				0.929	0.887	Data Appear Normal					
2179	Shapiro-Wilk (NDs = DL/2)				0.942	0.887	Data Appear Normal					
2180	Shapiro-Wilk (Normal ROS Estimates)				0.947	0.887	Data Appear Normal					
2181	Lilliefors (Detects Only)				0.125	0.234	Data Appear Normal					
2182	Lilliefors (NDs = DL)				0.173	0.213	Data Appear Normal					
2183	Lilliefors (NDs = DL/2)				0.138	0.213	Data Appear Normal					
2184	Lilliefors (Normal ROS Estimates)				0.139	0.213	Data Appear Normal					
2185												
2186	Gamma GOF Test Results											
2187												
2188					No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
2189	Correlation Coefficient R				0.988	0.989	0.985	0.989				
2190												
2191					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
2192	Anderson-Darling (Detects Only)				0.245	0.735						
2193	Kolmogorov-Smirnov (Detects Only)				0.14	0.237	Detected Data Appear Gamma Distributed					
2194	Anderson-Darling (NDs = DL)				0.245	0.74						
2195	Kolmogorov-Smirnov (NDs = DL)				0.136	0.215	Data Appear Gamma Distributed					
2196	Anderson-Darling (NDs = DL/2)				0.363	0.742						
2197	Kolmogorov-Smirnov (NDs = DL/2)				0.155	0.216	Data Appear Gamma Distributed					
2198	Anderson-Darling (Gamma ROS Estimates)				0.321	0.741						
2199	Kolmogorov-Smirnov (Gamma ROS Est.)				0.155	0.216	Data Appear Gamma Distributed					
2200												

	A	B	C	D	E	F	G	H	I	J	K	L
2201	Lognormal GOF Test Results											
2202												
2203					No NDs	NDs = DL	NDs = DL/2	Log ROS				
2204	Correlation Coefficient R				0.978	0.988	0.974	0.98				
2205												
2206					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
2207	Shapiro-Wilk (Detects Only)				0.952	0.866	Data Appear Lognormal					
2208	Shapiro-Wilk (NDs = DL)				0.97	0.887	Data Appear Lognormal					
2209	Shapiro-Wilk (NDs = DL/2)				0.934	0.887	Data Appear Lognormal					
2210	Shapiro-Wilk (Lognormal ROS Estimates)				0.946	0.887	Data Appear Lognormal					
2211	Lilliefors (Detects Only)				0.168	0.234	Data Appear Lognormal					
2212	Lilliefors (NDs = DL)				0.111	0.213	Data Appear Lognormal					
2213	Lilliefors (NDs = DL/2)				0.185	0.213	Data Appear Lognormal					
2214	Lilliefors (Lognormal ROS Estimates)				0.141	0.213	Data Appear Lognormal					
2215												
2216	Note: Substitution methods such as DL or DL/2 are not recommended.											
2217												
2218	Selenium (m-56a)											
2219												
2220					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
2221	Raw Statistics				20	5	15	3	12	80.00%		
2222												
2223					Number	Minimum	Maximum	Mean	Median	SD		
2224	Statistics (Non-Detects Only)				12	5.0000E-4	0.01	0.00148	5.0000E-4	0.00272		
2225	Statistics (Non-Detects Only)				3	3.3000E-4	5.7000E-4	4.8667E-4	5.6000E-4	1.3577E-4		
2226	Statistics (All: NDs treated as DL value)				15	3.3000E-4	0.01	0.00128	5.0000E-4	0.00245		
2227	Statistics (All: NDs treated as DL/2 value)				15	2.5000E-4	0.005	6.8800E-4	3.0000E-4	0.00121		
2228	Statistics (Normal ROS Imputed Data)				15	1.8665E-4	5.7000E-4	3.7487E-4	3.7260E-4	9.9856E-5		
2229	Statistics (Gamma ROS Imputed Data)				15	3.3000E-4	0.01	0.0081	0.01	0.00394		
2230	Statistics (Lognormal ROS Imputed Data)				15	2.3801E-4	5.7000E-4	3.7510E-4	3.6395E-4	9.0200E-5		
2231												
2232					K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
2233	Statistics (Non-Detects Only)				N/A	N/A	N/A	N/A	N/A	N/A		
2234	Statistics (NDs = DL)				0.987	0.834	0.0013	-7.247	0.836	-0.115		
2235	Statistics (NDs = DL/2)				1.098	0.923	6.2676E-4	-7.802	0.812	-0.104		
2236	Statistics (Gamma ROS Estimates)				1.395	1.16	0.00581	-5.216	1.269	-0.243		
2237	Statistics (Lognormal ROS Estimates)				--	--	--	-7.913	0.228	-0.0288		
2238												
2239	Normal GOF Test Results											
2240												
2241					No NDs	NDs = DL	NDs = DL/2	Normal ROS				
2242	Correlation Coefficient R				0.884	0.591	0.611	0.953				
2243												
2244					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
2245	Shapiro-Wilk (Detects Only)				0.781	0.767	Data Appear Normal					
2246	Shapiro-Wilk (NDs = DL)				0.381	0.881	Data Not Normal					
2247	Shapiro-Wilk (NDs = DL/2)				0.403	0.881	Data Not Normal					
2248	Shapiro-Wilk (Normal ROS Estimates)				0.916	0.881	Data Appear Normal					
2249	Lilliefors (Detects Only)				0.372	0.425	Data Appear Normal					
2250	Lilliefors (NDs = DL)				0.412	0.22	Data Not Normal					

	A	B	C	D	E	F	G	H	I	J	K	L
2251	Lilliefors (NDs = DL/2)				0.405	0.22	Data Not Normal					
2252	Lilliefors (Normal ROS Estimates)				0.242	0.22	Data Not Normal					
2253												
2254	Gamma GOF Test Results											
2255												
2256					No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
2257	Correlation Coefficient R				N/A	0.815	0.822	0.499				
2258												
2259					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
2260	Anderson-Darling (Detects Only)				N/A	N/A						
2261	Kolmogorov-Smirnov (Detects Only)				N/A	N/A						
2262	Anderson-Darling (NDs = DL)				3.209	0.764						
2263	Kolmogorov-Smirnov (NDs = DL)				0.413	0.228	Data Not Gamma Distributed					
2264	Anderson-Darling (NDs = DL/2)				2.602	0.761						
2265	Kolmogorov-Smirnov (NDs = DL/2)				0.313	0.227	Data Not Gamma Distributed					
2266	Anderson-Darling (Gamma ROS Estimates)				4.044	0.756						
2267	Kolmogorov-Smirnov (Gamma ROS Est.)				0.505	0.226	Data Not Gamma Distributed					
2268												
2269	Lognormal GOF Test Results											
2270												
2271					No NDs	NDs = DL	NDs = DL/2	Log ROS				
2272	Correlation Coefficient R				0.88	0.772	0.808	0.952				
2273												
2274					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
2275	Shapiro-Wilk (Detects Only)				0.774	0.767	Data Appear Lognormal					
2276	Shapiro-Wilk (NDs = DL)				0.623	0.881	Data Not Lognormal					
2277	Shapiro-Wilk (NDs = DL/2)				0.669	0.881	Data Not Lognormal					
2278	Shapiro-Wilk (Lognormal ROS Estimates)				0.915	0.881	Data Appear Lognormal					
2279	Lilliefors (Detects Only)				0.375	0.425	Data Appear Lognormal					
2280	Lilliefors (NDs = DL)				0.366	0.22	Data Not Lognormal					
2281	Lilliefors (NDs = DL/2)				0.272	0.22	Data Not Lognormal					
2282	Lilliefors (Lognormal ROS Estimates)				0.242	0.22	Data Not Lognormal					
2283												
2284	Note: Substitution methods such as DL or DL/2 are not recommended.											
2285												
2286	Selenium (m-57a)											
2287												
2288					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
2289	Raw Statistics				20	5	15	2	13	86.67%		
2290												
2291					Number	Minimum	Maximum	Mean	Median	SD		
2292	Statistics (Non-Detects Only)				13	5.0000E-4	0.01	0.00143	5.0000E-4	0.00261		
2293	Statistics (Non-Detects Only)				2	2.9000E-4	6.9000E-4	4.9000E-4	4.9000E-4	2.8284E-4		
2294	Statistics (All: NDs treated as DL value)				15	2.9000E-4	0.01	0.00131	5.0000E-4	0.00244		
2295	Statistics (All: NDs treated as DL/2 value)				15	2.5000E-4	0.005	6.8533E-4	2.5000E-4	0.00121		
2296	Statistics (Normal ROS Imputed Data)				15	3.2547E-5	6.9000E-4	3.1960E-4	3.1531E-4	1.5701E-4		
2297	Statistics (Gamma ROS Imputed Data)				15	N/A	N/A	N/A	N/A	N/A		
2298	Statistics (Lognormal ROS Imputed Data)				15	1.6600E-4	6.9000E-4	3.2745E-4	3.0635E-4	1.2546E-4		
2299												
2300					K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		

	A	B	C	D	E	F	G	H	I	J	K	L
2301	Statistics (Non-Detects Only)				N/A	N/A	N/A	N/A	N/A	N/A		
2302	Statistics (NDs = DL)				0.999	0.844	0.00131	-7.219	0.85	-0.118		
2303	Statistics (NDs = DL/2)				1.072	0.902	6.3930E-4	-7.82	0.827	-0.106		
2304	Statistics (Gamma ROS Estimates)				N/A	N/A	N/A	N/A	N/A	N/A		
2305	Statistics (Lognormal ROS Estimates)				--	--	--	-8.081	0.34	-0.0421		
2306												
2307	Normal GOF Test Results											
2308												
2309					No NDs	NDs = DL	NDs = DL/2	Normal ROS				
2310	Correlation Coefficient R				1	0.604	0.613	0.974				
2311												
2312					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
2313	Shapiro-Wilk (NDs = DL)				0.397	0.881	Data Not Normal					
2314	Shapiro-Wilk (NDs = DL/2)				0.406	0.881	Data Not Normal					
2315	Shapiro-Wilk (Normal ROS Estimates)				0.964	0.881	Data Appear Normal					
2316	Lilliefors (Detects Only)				N/A	N/A						
2317	Lilliefors (NDs = DL)				0.416	0.22	Data Not Normal					
2318	Lilliefors (NDs = DL/2)				0.365	0.22	Data Not Normal					
2319	Lilliefors (Normal ROS Estimates)				0.17	0.22	Data Appear Normal					
2320												
2321	Gamma GOF Test Results											
2322												
2323					No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
2324	Correlation Coefficient R				N/A	0.823	0.828	0.446				
2325												
2326					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
2327	Anderson-Darling (Detects Only)				N/A	N/A						
2328	Kolmogorov-Smirnov (Detects Only)				N/A	N/A						
2329	Anderson-Darling (NDs = DL)				2.763	0.763						
2330	Kolmogorov-Smirnov (NDs = DL)				0.331	0.228	Data Not Gamma Distributed					
2331	Anderson-Darling (NDs = DL/2)				2.69	0.762						
2332	Kolmogorov-Smirnov (NDs = DL/2)				0.326	0.228	Data Not Gamma Distributed					
2333	Anderson-Darling (Gamma ROS Estimates)				N/A	0.734						
2334	Kolmogorov-Smirnov (Gamma ROS Est.)				N/A	0.221						
2335												
2336	Lognormal GOF Test Results											
2337												
2338					No NDs	NDs = DL	NDs = DL/2	Log ROS				
2339	Correlation Coefficient R				1	0.815	0.799	N/A				
2340												
2341					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
2342	Shapiro-Wilk (NDs = DL)				0.692	0.881	Data Not Lognormal					
2343	Shapiro-Wilk (NDs = DL/2)				0.654	0.881	Data Not Lognormal					
2344	Shapiro-Wilk (Lognormal ROS Estimates)				0.964	0.881	Data Appear Lognormal					
2345	Lilliefors (Detects Only)				N/A	N/A						
2346	Lilliefors (NDs = DL)				0.273	0.22	Data Not Lognormal					
2347	Lilliefors (NDs = DL/2)				0.305	0.22	Data Not Lognormal					
2348	Lilliefors (Lognormal ROS Estimates)				0.17	0.22	Data Appear Lognormal					
2349												
2350	Note: Substitution methods such as DL or DL/2 are not recommended.											

	A	B	C	D	E	F	G	H	I	J	K	L		
2351														
2352	Selenium (m-58a)													
2353														
2354					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs				
2355	Raw Statistics				20	5	15	1	14	93.33%				
2356														
2357	Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!													
2358	It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).													
2359														
2360	The data set for variable Selenium (m-58a) was not processed!													
2361														
2362														
2363														
2364	Selenium (m-62a)													
2365														
2366					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs				
2367	Raw Statistics				20	5	15	2	13	86.67%				
2368														
2369					Number	Minimum	Maximum	Mean	Median	SD				
2370	Statistics (Non-Detects Only)				13	5.0000E-4	0.01	0.00142	5.0000E-4	0.00261				
2371	Statistics (Non-Detects Only)				2	7.1000E-4	7.8000E-4	7.4500E-4	7.4500E-4	4.9497E-5				
2372	Statistics (All: NDs treated as DL value)				15	5.0000E-4	0.01	0.00133	5.0000E-4	0.00243				
2373	Statistics (All: NDs treated as DL/2 value)				15	2.5000E-4	0.005	7.1600E-4	2.5000E-4	0.00121				
2374	Statistics (Normal ROS Imputed Data)				15	2.3901E-4	7.8000E-4	4.9718E-4	4.9510E-4	1.4204E-4				
2375	Statistics (Gamma ROS Imputed Data)				15	N/A	N/A	N/A	N/A	N/A				
2376	Statistics (Lognormal ROS Imputed Data)				15	3.7713E-4	7.8000E-4	5.4271E-4	5.3197E-4	1.0609E-4				
2377														
2378					K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV				
2379	Statistics (Non-Detects Only)				N/A	N/A	N/A	N/A	N/A	N/A				
2380	Statistics (NDs = DL)				1.057	0.89	0.00126	-7.163	0.815	-0.114				
2381	Statistics (NDs = DL/2)				1.094	0.92	6.5447E-4	-7.764	0.846	-0.109				
2382	Statistics (Gamma ROS Estimates)				N/A	N/A	N/A	N/A	N/A	N/A				
2383	Statistics (Lognormal ROS Estimates)				--	--	--	-7.536	0.191	-0.0253				
2384														
2385	Normal GOF Test Results													
2386														
2387					No NDs	NDs = DL	NDs = DL/2	Normal ROS						
2388	Correlation Coefficient R				1	0.598	0.633	0.991						
2389														
2390					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)							
2391	Shapiro-Wilk (NDs = DL)				0.388	0.881	Data Not Normal							
2392	Shapiro-Wilk (NDs = DL/2)				0.43	0.881	Data Not Normal							
2393	Shapiro-Wilk (Normal ROS Estimates)				0.985	0.881	Data Appear Normal							
2394	Lilliefors (Detects Only)				N/A	N/A								
2395	Lilliefors (NDs = DL)				0.421	0.22	Data Not Normal							
2396	Lilliefors (NDs = DL/2)				0.35	0.22	Data Not Normal							
2397	Lilliefors (Normal ROS Estimates)				0.106	0.22	Data Appear Normal							
2398														
2399	Gamma GOF Test Results													
2400														

	A	B	C	D	E	F	G	H	I	J	K	L
2401					No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
2402	Correlation Coefficient R				N/A	0.817	0.84	0.469				
2403												
2404					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
2405	Anderson-Darling (Detects Only)				N/A	N/A						
2406	Kolmogorov-Smirnov (Detects Only)				N/A	N/A						
2407	Anderson-Darling (NDs = DL)				2.982	0.762						
2408	Kolmogorov-Smirnov (NDs = DL)				0.346	0.228	Data Not Gamma Distributed					
2409	Anderson-Darling (NDs = DL/2)				2.339	0.761						
2410	Kolmogorov-Smirnov (NDs = DL/2)				0.324	0.227	Data Not Gamma Distributed					
2411	Anderson-Darling (Gamma ROS Estimates)				N/A	0.734						
2412	Kolmogorov-Smirnov (Gamma ROS Est.)				N/A	0.221						
2413												
2414	Lognormal GOF Test Results											
2415												
2416					No NDs	NDs = DL	NDs = DL/2	Log ROS				
2417	Correlation Coefficient R				1	0.774	0.826	N/A				
2418												
2419					Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
2420	Shapiro-Wilk (NDs = DL)				0.617	0.881	Data Not Lognormal					
2421	Shapiro-Wilk (NDs = DL/2)				0.693	0.881	Data Not Lognormal					
2422	Shapiro-Wilk (Lognormal ROS Estimates)				0.985	0.881	Data Appear Lognormal					
2423	Lilliefors (Detects Only)				N/A	N/A						
2424	Lilliefors (NDs = DL)				0.304	0.22	Data Not Lognormal					
2425	Lilliefors (NDs = DL/2)				0.334	0.22	Data Not Lognormal					
2426	Lilliefors (Lognormal ROS Estimates)				0.106	0.22	Data Appear Lognormal					
2427												
2428	Note: Substitution methods such as DL or DL/2 are not recommended.											
2429												
2430	Thallium (m-56a)											
2431												
2432					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
2433	Raw Statistics				20	1	19	1	18	94.74%		
2434												
2435	Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!											
2436	It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).											
2437												
2438	The data set for variable Thallium (m-56a) was not processed!											
2439												
2440												
2441												
2442	Thallium (m-57a)											
2443												
2444					Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
2445	Raw Statistics				20	1	19	0	19	100.00%		
2446												
2447	Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!											
2448	Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!											
2449	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).											
2450												

	A	B	C	D	E	F	G	H	I	J	K	L
2451	The data set for variable Thallium (m-57a) was not processed!											
2452												
2453												
2454												
2455	Thallium (m-58a)											
2456												
2457				Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs			
2458	Raw Statistics			20	1	19	0	19	100.00%			
2459												
2460	Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!											
2461	Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!											
2462	The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).											
2463												
2464	The data set for variable Thallium (m-58a) was not processed!											
2465												
2466												
2467												
2468	Thallium (m-62a)											
2469												
2470				Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs			
2471	Raw Statistics			20	2	18	1	17	94.44%			
2472												
2473	Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!											
2474	It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).											
2475												
2476	The data set for variable Thallium (m-62a) was not processed!											
2477												
2478												

	A	B	C	D	E	F	G	H	I	J	K	L
1					Outlier Tests for Selected Uncensored Variables							
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.14/11/2020 11:11:00 PM								
4				From File	SEDIPond_Cholla_AssessMonNov2019_NoDups.xls							
5				Full Precision	OFF							
6												
7												
8	Dixon's Outlier Test for Antimony (m-56a)											
9												
10	Number of Observations = 15											
11	10% critical value: 0.472											
12	5% critical value: 0.525											
13	1% critical value: 0.616											
14												
15	1. Observation Value 0.05 is a Potential Outlier (Upper Tail)											
16												
17	Test Statistic: 0.960											
18												
19	For 10% significance level, 0.05 is an outlier.											
20	For 5% significance level, 0.05 is an outlier.											
21	For 1% significance level, 0.05 is an outlier.											
22												
23	2. Observation Value 0.0001 is a Potential Outlier (Lower Ta											
24												
25	Test Statistic: 0.167											
26												
27	For 10% significance level, 0.0001 is not an outlier.											
28	For 5% significance level, 0.0001 is not an outlier.											
29	For 1% significance level, 0.0001 is not an outlier.											
30												
31												
32	Dixon's Outlier Test for Antimony (m-57a)											
33												
34	Number of Observations = 15											
35	10% critical value: 0.472											
36	5% critical value: 0.525											
37	1% critical value: 0.616											
38												
39	1. Observation Value 0.05 is a Potential Outlier (Upper Tail)											
40												
41	Test Statistic: 0.960											
42												
43	For 10% significance level, 0.05 is an outlier.											
44	For 5% significance level, 0.05 is an outlier.											
45	For 1% significance level, 0.05 is an outlier.											
46												
47	2. Observation Value 0.0001 is a Potential Outlier (Lower Ta											
48												
49	Test Statistic: 0.167											
50												

	A	B	C	D	E	F	G	H	I	J	K	L
51	For 10% significance level, 0.0001 is not an outlier.											
52	For 5% significance level, 0.0001 is not an outlier.											
53	For 1% significance level, 0.0001 is not an outlier.											
54												
55												
56	Dixon's Outlier Test for Antimony (m-58a)											
57												
58	Number of Observations = 15											
59	10% critical value: 0.472											
60	5% critical value: 0.525											
61	1% critical value: 0.616											
62												
63	1. Observation Value 0.05 is a Potential Outlier (Upper Tail)											
64												
65	Test Statistic: 0.960											
66												
67	For 10% significance level, 0.05 is an outlier.											
68	For 5% significance level, 0.05 is an outlier.											
69	For 1% significance level, 0.05 is an outlier.											
70												
71	2. Observation Value 0.0001 is a Potential Outlier (Lower Ta											
72												
73	Test Statistic: 0.167											
74												
75	For 10% significance level, 0.0001 is not an outlier.											
76	For 5% significance level, 0.0001 is not an outlier.											
77	For 1% significance level, 0.0001 is not an outlier.											
78												
79												
80	Dixon's Outlier Test for Antimony (m-62a)											
81												
82	Number of Observations = 15											
83	10% critical value: 0.472											
84	5% critical value: 0.525											
85	1% critical value: 0.616											
86												
87	1. Observation Value 0.05 is a Potential Outlier (Upper Tail)											
88												
89	Test Statistic: 0.960											
90												
91	For 10% significance level, 0.05 is an outlier.											
92	For 5% significance level, 0.05 is an outlier.											
93	For 1% significance level, 0.05 is an outlier.											
94												
95	2. Observation Value 0.0001 is a Potential Outlier (Lower Ta											
96												
97	Test Statistic: 0.167											
98												
99	For 10% significance level, 0.0001 is not an outlier.											
100	For 5% significance level, 0.0001 is not an outlier.											

	A	B	C	D	E	F	G	H	I	J	K	L
101	For 1% significance level, 0.0001 is not an outlier.											
102												
103												
104	Dixon's Outlier Test for Arsenic (m-56a)											
105												
106	Number of Observations = 18											
107	10% critical value: 0.424											
108	5% critical value: 0.475											
109	1% critical value: 0.561											
110												
111	1. Observation Value 0.01 is a Potential Outlier (Upper Tail)											
112												
113	Test Statistic: 0.193											
114												
115	For 10% significance level, 0.01 is not an outlier.											
116	For 5% significance level, 0.01 is not an outlier.											
117	For 1% significance level, 0.01 is not an outlier.											
118												
119	2. Observation Value 0.0006 is a Potential Outlier (Lower Tail)											
120												
121	Test Statistic: 0.011											
122												
123	For 10% significance level, 0.0006 is not an outlier.											
124	For 5% significance level, 0.0006 is not an outlier.											
125	For 1% significance level, 0.0006 is not an outlier.											
126												
127												
128	Dixon's Outlier Test for Arsenic (m-57a)											
129												
130	Number of Observations = 18											
131	10% critical value: 0.424											
132	5% critical value: 0.475											
133	1% critical value: 0.561											
134												
135	1. Observation Value 0.0098 is a Potential Outlier (Upper Tail)											
136												
137	Test Statistic: 0.430											
138												
139	For 10% significance level, 0.0098 is an outlier.											
140	For 5% significance level, 0.0098 is not an outlier.											
141	For 1% significance level, 0.0098 is not an outlier.											
142												
143	2. Observation Value 0.0017 is a Potential Outlier (Lower Tail)											
144												
145	Test Statistic: 0.043											
146												
147	For 10% significance level, 0.0017 is not an outlier.											
148	For 5% significance level, 0.0017 is not an outlier.											
149	For 1% significance level, 0.0017 is not an outlier.											
150												

	A	B	C	D	E	F	G	H	I	J	K	L
151												
152	Dixon's Outlier Test for Arsenic (m-58a)											
153												
154	Number of Observations = 18											
155	10% critical value: 0.424											
156	5% critical value: 0.475											
157	1% critical value: 0.561											
158												
159	1. Observation Value 0.01 is a Potential Outlier (Upper Tail)											
160												
161	Test Statistic: 0.700											
162												
163	For 10% significance level, 0.01 is an outlier.											
164	For 5% significance level, 0.01 is an outlier.											
165	For 1% significance level, 0.01 is an outlier.											
166												
167	2. Observation Value 0.0025 is a Potential Outlier (Lower Ta											
168												
169	Test Statistic: 0.192											
170												
171	For 10% significance level, 0.0025 is not an outlier.											
172	For 5% significance level, 0.0025 is not an outlier.											
173	For 1% significance level, 0.0025 is not an outlier.											
174												
175												
176	Dixon's Outlier Test for Arsenic (m-62a)											
177												
178	Number of Observations = 18											
179	10% critical value: 0.424											
180	5% critical value: 0.475											
181	1% critical value: 0.561											
182												
183	1. Observation Value 0.01 is a Potential Outlier (Upper Tail)											
184												
185	Test Statistic: 0.852											
186												
187	For 10% significance level, 0.01 is an outlier.											
188	For 5% significance level, 0.01 is an outlier.											
189	For 1% significance level, 0.01 is an outlier.											
190												
191	2. Observation Value 0.0016 is a Potential Outlier (Lower Ta											
192												
193	Test Statistic: 0.200											
194												
195	For 10% significance level, 0.0016 is not an outlier.											
196	For 5% significance level, 0.0016 is not an outlier.											
197	For 1% significance level, 0.0016 is not an outlier.											
198												
199												
200	Dixon's Outlier Test for Barium (m-56a)											

	A	B	C	D	E	F	G	H	I	J	K	L
201												
202	Number of Observations = 18											
203	10% critical value: 0.424											
204	5% critical value: 0.475											
205	1% critical value: 0.561											
206												
207	1. Observation Value 0.086 is a Potential Outlier (Upper Tail)											
208												
209	Test Statistic: 0.167											
210												
211	For 10% significance level, 0.086 is not an outlier.											
212	For 5% significance level, 0.086 is not an outlier.											
213	For 1% significance level, 0.086 is not an outlier.											
214												
215	2. Observation Value 0.055 is a Potential Outlier (Lower Tail)											
216												
217	Test Statistic: 0.259											
218												
219	For 10% significance level, 0.055 is not an outlier.											
220	For 5% significance level, 0.055 is not an outlier.											
221	For 1% significance level, 0.055 is not an outlier.											
222												
223												
224	Dixon's Outlier Test for Barium (m-57a)											
225												
226	Number of Observations = 18											
227	10% critical value: 0.424											
228	5% critical value: 0.475											
229	1% critical value: 0.561											
230												
231	1. Observation Value 0.072 is a Potential Outlier (Upper Tail)											
232												
233	Test Statistic: 0.548											
234												
235	For 10% significance level, 0.072 is an outlier.											
236	For 5% significance level, 0.072 is an outlier.											
237	For 1% significance level, 0.072 is not an outlier.											
238												
239	2. Observation Value 0.038 is a Potential Outlier (Lower Tail)											
240												
241	Test Statistic: 0.176											
242												
243	For 10% significance level, 0.038 is not an outlier.											
244	For 5% significance level, 0.038 is not an outlier.											
245	For 1% significance level, 0.038 is not an outlier.											
246												
247												
248	Dixon's Outlier Test for Barium (m-58a)											
249												
250	Number of Observations = 18											

	A	B	C	D	E	F	G	H	I	J	K	L
251	10% critical value: 0.424											
252	5% critical value: 0.475											
253	1% critical value: 0.561											
254												
255	1. Observation Value 0.11 is a Potential Outlier (Upper Tail)											
256												
257	Test Statistic: 0.213											
258												
259	For 10% significance level, 0.11 is not an outlier.											
260	For 5% significance level, 0.11 is not an outlier.											
261	For 1% significance level, 0.11 is not an outlier.											
262												
263	2. Observation Value 0.043 is a Potential Outlier (Lower Tail)											
264												
265	Test Statistic: 0.111											
266												
267	For 10% significance level, 0.043 is not an outlier.											
268	For 5% significance level, 0.043 is not an outlier.											
269	For 1% significance level, 0.043 is not an outlier.											
270												
271												
272	Dixon's Outlier Test for Barium (m-62a)											
273												
274	Number of Observations = 18											
275	10% critical value: 0.424											
276	5% critical value: 0.475											
277	1% critical value: 0.561											
278												
279	1. Observation Value 0.16 is a Potential Outlier (Upper Tail)											
280												
281	Test Statistic: 0.848											
282												
283	For 10% significance level, 0.16 is an outlier.											
284	For 5% significance level, 0.16 is an outlier.											
285	For 1% significance level, 0.16 is an outlier.											
286												
287	2. Observation Value 0.064 is a Potential Outlier (Lower Tail)											
288												
289	Test Statistic: 0.222											
290												
291	For 10% significance level, 0.064 is not an outlier.											
292	For 5% significance level, 0.064 is not an outlier.											
293	For 1% significance level, 0.064 is not an outlier.											
294												
295												
296	Dixon's Outlier Test for Beryllium (m-56a)											
297												
298	Number of Observations = 15											
299	10% critical value: 0.472											
300	5% critical value: 0.525											

	A	B	C	D	E	F	G	H	I	J	K	L
301	1% critical value: 0.616											
302												
303	1. Observation Value 0.001 is a Potential Outlier (Upper Tail)											
304												
305	Test Statistic: NaN											
306												
307	For 10% significance level, 0.001 is an outlier.											
308	For 5% significance level, 0.001 is an outlier.											
309	For 1% significance level, 0.001 is an outlier.											
310												
311	2. Observation Value 0.001 is a Potential Outlier (Lower Tail)											
312												
313	Test Statistic: NaN											
314												
315	For 10% significance level, 0.001 is an outlier.											
316	For 5% significance level, 0.001 is an outlier.											
317	For 1% significance level, 0.001 is an outlier.											
318												
319												
320	Dixon's Outlier Test for Beryllium (m-57a)											
321												
322	Number of Observations = 15											
323	10% critical value: 0.472											
324	5% critical value: 0.525											
325	1% critical value: 0.616											
326												
327	1. Observation Value 0.001 is a Potential Outlier (Upper Tail)											
328												
329	Test Statistic: NaN											
330												
331	For 10% significance level, 0.001 is an outlier.											
332	For 5% significance level, 0.001 is an outlier.											
333	For 1% significance level, 0.001 is an outlier.											
334												
335	2. Observation Value 0.001 is a Potential Outlier (Lower Tail)											
336												
337	Test Statistic: NaN											
338												
339	For 10% significance level, 0.001 is an outlier.											
340	For 5% significance level, 0.001 is an outlier.											
341	For 1% significance level, 0.001 is an outlier.											
342												
343												
344	Dixon's Outlier Test for Beryllium (m-58a)											
345												
346	Number of Observations = 15											
347	10% critical value: 0.472											
348	5% critical value: 0.525											
349	1% critical value: 0.616											
350												

	A	B	C	D	E	F	G	H	I	J	K	L
351	1. Observation Value 0.001 is a Potential Outlier (Upper Tail)											
352												
353	Test Statistic: NaN											
354												
355	For 10% significance level, 0.001 is an outlier.											
356	For 5% significance level, 0.001 is an outlier.											
357	For 1% significance level, 0.001 is an outlier.											
358												
359	2. Observation Value 0.001 is a Potential Outlier (Lower Tail)											
360												
361	Test Statistic: NaN											
362												
363	For 10% significance level, 0.001 is an outlier.											
364	For 5% significance level, 0.001 is an outlier.											
365	For 1% significance level, 0.001 is an outlier.											
366												
367												
368	Dixon's Outlier Test for Beryllium (m-62a)											
369												
370	Number of Observations = 15											
371	10% critical value: 0.472											
372	5% critical value: 0.525											
373	1% critical value: 0.616											
374												
375	1. Observation Value 0.001 is a Potential Outlier (Upper Tail)											
376												
377	Test Statistic: NaN											
378												
379	For 10% significance level, 0.001 is an outlier.											
380	For 5% significance level, 0.001 is an outlier.											
381	For 1% significance level, 0.001 is an outlier.											
382												
383	2. Observation Value 0.001 is a Potential Outlier (Lower Tail)											
384												
385	Test Statistic: NaN											
386												
387	For 10% significance level, 0.001 is an outlier.											
388	For 5% significance level, 0.001 is an outlier.											
389	For 1% significance level, 0.001 is an outlier.											
390												
391												
392	Dixon's Outlier Test for Cadmium (m-56a)											
393												
394	Number of Observations = 15											
395	10% critical value: 0.472											
396	5% critical value: 0.525											
397	1% critical value: 0.616											
398												
399	1. Observation Value 0.002 is a Potential Outlier (Upper Tail)											
400												

	A	B	C	D	E	F	G	H	I	J	K	L
401	Test Statistic: 0.947											
402												
403	For 10% significance level, 0.002 is an outlier.											
404	For 5% significance level, 0.002 is an outlier.											
405	For 1% significance level, 0.002 is an outlier.											
406												
407	2. Observation Value 0.0001 is a Potential Outlier (Lower Tail)											
408												
409	Test Statistic: 0.000											
410												
411	For 10% significance level, 0.0001 is not an outlier.											
412	For 5% significance level, 0.0001 is not an outlier.											
413	For 1% significance level, 0.0001 is not an outlier.											
414												
415												
416	Dixon's Outlier Test for Cadmium (m-57a)											
417												
418	Number of Observations = 15											
419	10% critical value: 0.472											
420	5% critical value: 0.525											
421	1% critical value: 0.616											
422												
423	1. Observation Value 0.002 is a Potential Outlier (Upper Tail)											
424												
425	Test Statistic: 0.947											
426												
427	For 10% significance level, 0.002 is an outlier.											
428	For 5% significance level, 0.002 is an outlier.											
429	For 1% significance level, 0.002 is an outlier.											
430												
431	2. Observation Value 0.0001 is a Potential Outlier (Lower Tail)											
432												
433	Test Statistic: 0.000											
434												
435	For 10% significance level, 0.0001 is not an outlier.											
436	For 5% significance level, 0.0001 is not an outlier.											
437	For 1% significance level, 0.0001 is not an outlier.											
438												
439												
440	Dixon's Outlier Test for Cadmium (m-58a)											
441												
442	Number of Observations = 15											
443	10% critical value: 0.472											
444	5% critical value: 0.525											
445	1% critical value: 0.616											
446												
447	1. Observation Value 0.002 is a Potential Outlier (Upper Tail)											
448												
449	Test Statistic: 0.947											
450												

	A	B	C	D	E	F	G	H	I	J	K	L
451	For 10% significance level, 0.002 is an outlier.											
452	For 5% significance level, 0.002 is an outlier.											
453	For 1% significance level, 0.002 is an outlier.											
454												
455	2. Observation Value 0.0001 is a Potential Outlier (Lower Tail)											
456												
457	Test Statistic: 0.000											
458												
459	For 10% significance level, 0.0001 is not an outlier.											
460	For 5% significance level, 0.0001 is not an outlier.											
461	For 1% significance level, 0.0001 is not an outlier.											
462												
463												
464	Dixon's Outlier Test for Cadmium (m-62a)											
465												
466	Number of Observations = 15											
467	10% critical value: 0.472											
468	5% critical value: 0.525											
469	1% critical value: 0.616											
470												
471	1. Observation Value 0.002 is a Potential Outlier (Upper Tail)											
472												
473	Test Statistic: 0.947											
474												
475	For 10% significance level, 0.002 is an outlier.											
476	For 5% significance level, 0.002 is an outlier.											
477	For 1% significance level, 0.002 is an outlier.											
478												
479	2. Observation Value 0.0001 is a Potential Outlier (Lower Tail)											
480												
481	Test Statistic: 0.000											
482												
483	For 10% significance level, 0.0001 is not an outlier.											
484	For 5% significance level, 0.0001 is not an outlier.											
485	For 1% significance level, 0.0001 is not an outlier.											
486												
487												
488	Dixon's Outlier Test for Chromium (m-56a)											
489												
490	Number of Observations = 18											
491	10% critical value: 0.424											
492	5% critical value: 0.475											
493	1% critical value: 0.561											
494												
495	1. Observation Value 0.076 is a Potential Outlier (Upper Tail)											
496												
497	Test Statistic: 0.742											
498												
499	For 10% significance level, 0.076 is an outlier.											
500	For 5% significance level, 0.076 is an outlier.											

	A	B	C	D	E	F	G	H	I	J	K	L
501	For 1% significance level, 0.076 is an outlier.											
502												
503	2. Observation Value 0.0005 is a Potential Outlier (Lower Ta											
504												
505	Test Statistic: 0.001											
506												
507	For 10% significance level, 0.0005 is not an outlier.											
508	For 5% significance level, 0.0005 is not an outlier.											
509	For 1% significance level, 0.0005 is not an outlier.											
510												
511												
512	Dixon's Outlier Test for Chromium (m-57a)											
513												
514	Number of Observations = 18											
515	10% critical value: 0.424											
516	5% critical value: 0.475											
517	1% critical value: 0.561											
518												
519	1. Observation Value 0.045 is a Potential Outlier (Upper Tai											
520												
521	Test Statistic: 0.158											
522												
523	For 10% significance level, 0.045 is not an outlier.											
524	For 5% significance level, 0.045 is not an outlier.											
525	For 1% significance level, 0.045 is not an outlier.											
526												
527	2. Observation Value 0.0005 is a Potential Outlier (Lower Ta											
528												
529	Test Statistic: 0.006											
530												
531	For 10% significance level, 0.0005 is not an outlier.											
532	For 5% significance level, 0.0005 is not an outlier.											
533	For 1% significance level, 0.0005 is not an outlier.											
534												
535												
536	Dixon's Outlier Test for Chromium (m-58a)											
537												
538	Number of Observations = 18											
539	10% critical value: 0.424											
540	5% critical value: 0.475											
541	1% critical value: 0.561											
542												
543	1. Observation Value 0.01 is a Potential Outlier (Upper Tail)											
544												
545	Test Statistic: 0.705											
546												
547	For 10% significance level, 0.01 is an outlier.											
548	For 5% significance level, 0.01 is an outlier.											
549	For 1% significance level, 0.01 is an outlier.											
550												

	A	B	C	D	E	F	G	H	I	J	K	L
551	2. Observation Value 0.0005 is a Potential Outlier (Lower Tail)											
552												
553	Test Statistic: 0.000											
554												
555	For 10% significance level, 0.0005 is not an outlier.											
556	For 5% significance level, 0.0005 is not an outlier.											
557	For 1% significance level, 0.0005 is not an outlier.											
558												
559												
560	Dixon's Outlier Test for Chromium (m-62a)											
561												
562	Number of Observations = 18											
563	10% critical value: 0.424											
564	5% critical value: 0.475											
565	1% critical value: 0.561											
566												
567	1. Observation Value 0.01 is a Potential Outlier (Upper Tail)											
568												
569	Test Statistic: 0.683											
570												
571	For 10% significance level, 0.01 is an outlier.											
572	For 5% significance level, 0.01 is an outlier.											
573	For 1% significance level, 0.01 is an outlier.											
574												
575	2. Observation Value 0.0005 is a Potential Outlier (Lower Tail)											
576												
577	Test Statistic: 0.088											
578												
579	For 10% significance level, 0.0005 is not an outlier.											
580	For 5% significance level, 0.0005 is not an outlier.											
581	For 1% significance level, 0.0005 is not an outlier.											
582												
583												
584	Dixon's Outlier Test for Cobalt (m-56a)											
585												
586	Number of Observations = 18											
587	10% critical value: 0.424											
588	5% critical value: 0.475											
589	1% critical value: 0.561											
590												
591	1. Observation Value 0.002 is a Potential Outlier (Upper Tail)											
592												
593	Test Statistic: 0.467											
594												
595	For 10% significance level, 0.002 is an outlier.											
596	For 5% significance level, 0.002 is not an outlier.											
597	For 1% significance level, 0.002 is not an outlier.											
598												
599	2. Observation Value 0.0005 is a Potential Outlier (Lower Tail)											
600												

	A	B	C	D	E	F	G	H	I	J	K	L
601	Test Statistic: 0.000											
602												
603	For 10% significance level, 0.0005 is not an outlier.											
604	For 5% significance level, 0.0005 is not an outlier.											
605	For 1% significance level, 0.0005 is not an outlier.											
606												
607												
608	Dixon's Outlier Test for Cobalt (m-57a)											
609												
610	Number of Observations = 18											
611	10% critical value: 0.424											
612	5% critical value: 0.475											
613	1% critical value: 0.561											
614												
615	1. Observation Value 0.0088 is a Potential Outlier (Upper Tail)											
616												
617	Test Statistic: 0.053											
618												
619	For 10% significance level, 0.0088 is not an outlier.											
620	For 5% significance level, 0.0088 is not an outlier.											
621	For 1% significance level, 0.0088 is not an outlier.											
622												
623	2. Observation Value 0.004 is a Potential Outlier (Lower Tail)											
624												
625	Test Statistic: 0.217											
626												
627	For 10% significance level, 0.004 is not an outlier.											
628	For 5% significance level, 0.004 is not an outlier.											
629	For 1% significance level, 0.004 is not an outlier.											
630												
631												
632	Dixon's Outlier Test for Cobalt (m-58a)											
633												
634	Number of Observations = 18											
635	10% critical value: 0.424											
636	5% critical value: 0.475											
637	1% critical value: 0.561											
638												
639	1. Observation Value 0.01 is a Potential Outlier (Upper Tail)											
640												
641	Test Statistic: 0.937											
642												
643	For 10% significance level, 0.01 is an outlier.											
644	For 5% significance level, 0.01 is an outlier.											
645	For 1% significance level, 0.01 is an outlier.											
646												
647	2. Observation Value 0.0005 is a Potential Outlier (Lower Tail)											
648												
649	Test Statistic: 0.000											
650												

	A	B	C	D	E	F	G	H	I	J	K	L
651	For 10% significance level, 0.0005 is not an outlier.											
652	For 5% significance level, 0.0005 is not an outlier.											
653	For 1% significance level, 0.0005 is not an outlier.											
654												
655												
656	Dixon's Outlier Test for Cobalt (m-62a)											
657												
658	Number of Observations = 18											
659	10% critical value: 0.424											
660	5% critical value: 0.475											
661	1% critical value: 0.561											
662												
663	1. Observation Value 0.0022 is a Potential Outlier (Upper Tail)?											
664												
665	Test Statistic: 0.588											
666												
667	For 10% significance level, 0.0022 is an outlier.											
668	For 5% significance level, 0.0022 is an outlier.											
669	For 1% significance level, 0.0022 is an outlier.											
670												
671	2. Observation Value 0.00046 is a Potential Outlier (Lower Tail)?											
672												
673	Test Statistic: 0.054											
674												
675	For 10% significance level, 0.00046 is not an outlier.											
676	For 5% significance level, 0.00046 is not an outlier.											
677	For 1% significance level, 0.00046 is not an outlier.											
678												
679												
680	Dixon's Outlier Test for Fluoride (m-56a)											
681												
682	Number of Observations = 19											
683	10% critical value: 0.412											
684	5% critical value: 0.462											
685	1% critical value: 0.547											
686												
687	1. Observation Value 0.8 is a Potential Outlier (Upper Tail)?											
688												
689	Test Statistic: 0.775											
690												
691	For 10% significance level, 0.8 is an outlier.											
692	For 5% significance level, 0.8 is an outlier.											
693	For 1% significance level, 0.8 is an outlier.											
694												
695	2. Observation Value 0.4 is a Potential Outlier (Lower Tail)?											
696												
697	Test Statistic: 0.000											
698												
699	For 10% significance level, 0.4 is not an outlier.											
700	For 5% significance level, 0.4 is not an outlier.											

	A	B	C	D	E	F	G	H	I	J	K	L
701	For 1% significance level, 0.4 is not an outlier.											
702												
703												
704	Dixon's Outlier Test for Fluoride (m-57a)											
705												
706	Number of Observations = 19											
707	10% critical value: 0.412											
708	5% critical value: 0.462											
709	1% critical value: 0.547											
710												
711	1. Observation Value 0.8 is a Potential Outlier (Upper Tail)?											
712												
713	Test Statistic: 0.950											
714												
715	For 10% significance level, 0.8 is an outlier.											
716	For 5% significance level, 0.8 is an outlier.											
717	For 1% significance level, 0.8 is an outlier.											
718												
719	2. Observation Value 0.4 is a Potential Outlier (Lower Tail)?											
720												
721	Test Statistic: 0.000											
722												
723	For 10% significance level, 0.4 is not an outlier.											
724	For 5% significance level, 0.4 is not an outlier.											
725	For 1% significance level, 0.4 is not an outlier.											
726												
727												
728	Dixon's Outlier Test for Fluoride (m-58a)											
729												
730	Number of Observations = 19											
731	10% critical value: 0.412											
732	5% critical value: 0.462											
733	1% critical value: 0.547											
734												
735	1. Observation Value 0.8 is a Potential Outlier (Upper Tail)?											
736												
737	Test Statistic: 0.925											
738												
739	For 10% significance level, 0.8 is an outlier.											
740	For 5% significance level, 0.8 is an outlier.											
741	For 1% significance level, 0.8 is an outlier.											
742												
743	2. Observation Value 0.4 is a Potential Outlier (Lower Tail)?											
744												
745	Test Statistic: 0.000											
746												
747	For 10% significance level, 0.4 is not an outlier.											
748	For 5% significance level, 0.4 is not an outlier.											
749	For 1% significance level, 0.4 is not an outlier.											
750												

	A	B	C	D	E	F	G	H	I	J	K	L
751												
752	Dixon's Outlier Test for Fluoride (m-62a)											
753												
754	Number of Observations = 19											
755	10% critical value: 0.412											
756	5% critical value: 0.462											
757	1% critical value: 0.547											
758												
759	1. Observation Value 0.8 is a Potential Outlier (Upper Tail)?											
760												
761	Test Statistic: 0.000											
762												
763	For 10% significance level, 0.8 is not an outlier.											
764	For 5% significance level, 0.8 is not an outlier.											
765	For 1% significance level, 0.8 is not an outlier.											
766												
767	2. Observation Value 0.4 is a Potential Outlier (Lower Tail)?											
768												
769	Test Statistic: 0.000											
770												
771	For 10% significance level, 0.4 is not an outlier.											
772	For 5% significance level, 0.4 is not an outlier.											
773	For 1% significance level, 0.4 is not an outlier.											
774												
775												
776	Dixon's Outlier Test for Lead (m-56a)											
777												
778	Number of Observations = 15											
779	10% critical value: 0.472											
780	5% critical value: 0.525											
781	1% critical value: 0.616											
782												
783	1. Observation Value 0.01 is a Potential Outlier (Upper Tail)											
784												
785	Test Statistic: 0.947											
786												
787	For 10% significance level, 0.01 is an outlier.											
788	For 5% significance level, 0.01 is an outlier.											
789	For 1% significance level, 0.01 is an outlier.											
790												
791	2. Observation Value 0.0001 is a Potential Outlier (Lower Tail)											
792												
793	Test Statistic: 0.444											
794												
795	For 10% significance level, 0.0001 is not an outlier.											
796	For 5% significance level, 0.0001 is not an outlier.											
797	For 1% significance level, 0.0001 is not an outlier.											
798												
799												
800	Dixon's Outlier Test for Lead (m-57a)											

	A	B	C	D	E	F	G	H	I	J	K	L
801												
802	Number of Observations = 15											
803	10% critical value: 0.472											
804	5% critical value: 0.525											
805	1% critical value: 0.616											
806												
807	1. Observation Value 0.01 is a Potential Outlier (Upper Tail)											
808												
809	Test Statistic: 0.947											
810												
811	For 10% significance level, 0.01 is an outlier.											
812	For 5% significance level, 0.01 is an outlier.											
813	For 1% significance level, 0.01 is an outlier.											
814												
815	2. Observation Value 0.00021 is a Potential Outlier (Lower T											
816												
817	Test Statistic: 0.367											
818												
819	For 10% significance level, 0.00021 is not an outlier.											
820	For 5% significance level, 0.00021 is not an outlier.											
821	For 1% significance level, 0.00021 is not an outlier.											
822												
823												
824	Dixon's Outlier Test for Lead (m-58a)											
825												
826	Number of Observations = 15											
827	10% critical value: 0.472											
828	5% critical value: 0.525											
829	1% critical value: 0.616											
830												
831	1. Observation Value 0.01 is a Potential Outlier (Upper Tail)											
832												
833	Test Statistic: 0.937											
834												
835	For 10% significance level, 0.01 is an outlier.											
836	For 5% significance level, 0.01 is an outlier.											
837	For 1% significance level, 0.01 is an outlier.											
838												
839	2. Observation Value 0.0001 is a Potential Outlier (Lower Ta											
840												
841	Test Statistic: 0.400											
842												
843	For 10% significance level, 0.0001 is not an outlier.											
844	For 5% significance level, 0.0001 is not an outlier.											
845	For 1% significance level, 0.0001 is not an outlier.											
846												
847												
848	Dixon's Outlier Test for Lead (m-62a)											
849												
850	Number of Observations = 15											

	A	B	C	D	E	F	G	H	I	J	K	L
851	10% critical value: 0.472											
852	5% critical value: 0.525											
853	1% critical value: 0.616											
854												
855	1. Observation Value 0.01 is a Potential Outlier (Upper Tail)											
856												
857	Test Statistic: 0.947											
858												
859	For 10% significance level, 0.01 is an outlier.											
860	For 5% significance level, 0.01 is an outlier.											
861	For 1% significance level, 0.01 is an outlier.											
862												
863	2. Observation Value 0.0001 is a Potential Outlier (Lower Ta											
864												
865	Test Statistic: 0.444											
866												
867	For 10% significance level, 0.0001 is not an outlier.											
868	For 5% significance level, 0.0001 is not an outlier.											
869	For 1% significance level, 0.0001 is not an outlier.											
870												
871												
872	Dixon's Outlier Test for Lithium (m-56a)											
873												
874	Number of Observations = 16											
875	10% critical value: 0.454											
876	5% critical value: 0.507											
877	1% critical value: 0.595											
878												
879	1. Observation Value 0.2 is a Potential Outlier (Upper Tail)?											
880												
881	Test Statistic: NaN											
882												
883	For 10% significance level, 0.2 is an outlier.											
884	For 5% significance level, 0.2 is an outlier.											
885	For 1% significance level, 0.2 is an outlier.											
886												
887	2. Observation Value 0.2 is a Potential Outlier (Lower Tail)?											
888												
889	Test Statistic: NaN											
890												
891	For 10% significance level, 0.2 is an outlier.											
892	For 5% significance level, 0.2 is an outlier.											
893	For 1% significance level, 0.2 is an outlier.											
894												
895												
896	Dixon's Outlier Test for Lithium (m-57a)											
897												
898	Number of Observations = 16											
899	10% critical value: 0.454											
900	5% critical value: 0.507											

	A	B	C	D	E	F	G	H	I	J	K	L
901	1% critical value: 0.595											
902												
903	1. Observation Value 0.2 is a Potential Outlier (Upper Tail)?											
904												
905	Test Statistic: NaN											
906												
907	For 10% significance level, 0.2 is an outlier.											
908	For 5% significance level, 0.2 is an outlier.											
909	For 1% significance level, 0.2 is an outlier.											
910												
911	2. Observation Value 0.2 is a Potential Outlier (Lower Tail)?											
912												
913	Test Statistic: NaN											
914												
915	For 10% significance level, 0.2 is an outlier.											
916	For 5% significance level, 0.2 is an outlier.											
917	For 1% significance level, 0.2 is an outlier.											
918												
919												
920	Dixon's Outlier Test for Lithium (m-58a)											
921												
922	Number of Observations = 16											
923	10% critical value: 0.454											
924	5% critical value: 0.507											
925	1% critical value: 0.595											
926												
927	1. Observation Value 0.2 is a Potential Outlier (Upper Tail)?											
928												
929	Test Statistic: NaN											
930												
931	For 10% significance level, 0.2 is an outlier.											
932	For 5% significance level, 0.2 is an outlier.											
933	For 1% significance level, 0.2 is an outlier.											
934												
935	2. Observation Value 0.2 is a Potential Outlier (Lower Tail)?											
936												
937	Test Statistic: NaN											
938												
939	For 10% significance level, 0.2 is an outlier.											
940	For 5% significance level, 0.2 is an outlier.											
941	For 1% significance level, 0.2 is an outlier.											
942												
943												
944	Dixon's Outlier Test for Lithium (m-62a)											
945												
946	Number of Observations = 16											
947	10% critical value: 0.454											
948	5% critical value: 0.507											
949	1% critical value: 0.595											
950												

	A	B	C	D	E	F	G	H	I	J	K	L
951	1. Observation Value 0.2 is a Potential Outlier (Upper Tail)?											
952												
953	Test Statistic: NaN											
954												
955	For 10% significance level, 0.2 is an outlier.											
956	For 5% significance level, 0.2 is an outlier.											
957	For 1% significance level, 0.2 is an outlier.											
958												
959	2. Observation Value 0.2 is a Potential Outlier (Lower Tail)?											
960												
961	Test Statistic: NaN											
962												
963	For 10% significance level, 0.2 is an outlier.											
964	For 5% significance level, 0.2 is an outlier.											
965	For 1% significance level, 0.2 is an outlier.											
966												
967												
968	Dixon's Outlier Test for Mercury (m-56a)											
969												
970	Number of Observations = 15											
971	10% critical value: 0.472											
972	5% critical value: 0.525											
973	1% critical value: 0.616											
974												
975	1. Observation Value 0.0002 is a Potential Outlier (Upper Tail)?											
976												
977	Test Statistic: NaN											
978												
979	For 10% significance level, 0.0002 is an outlier.											
980	For 5% significance level, 0.0002 is an outlier.											
981	For 1% significance level, 0.0002 is an outlier.											
982												
983	2. Observation Value 0.0002 is a Potential Outlier (Lower Tail)?											
984												
985	Test Statistic: NaN											
986												
987	For 10% significance level, 0.0002 is an outlier.											
988	For 5% significance level, 0.0002 is an outlier.											
989	For 1% significance level, 0.0002 is an outlier.											
990												
991												
992	Dixon's Outlier Test for Mercury (m-57a)											
993												
994	Number of Observations = 15											
995	10% critical value: 0.472											
996	5% critical value: 0.525											
997	1% critical value: 0.616											
998												
999	1. Observation Value 0.0002 is a Potential Outlier (Upper Tail)?											
1000												

	A	B	C	D	E	F	G	H	I	J	K	L
1001	Test Statistic: NaN											
1002												
1003	For 10% significance level, 0.0002 is an outlier.											
1004	For 5% significance level, 0.0002 is an outlier.											
1005	For 1% significance level, 0.0002 is an outlier.											
1006												
1007	2. Observation Value 0.0002 is a Potential Outlier (Lower Tail)											
1008												
1009	Test Statistic: NaN											
1010												
1011	For 10% significance level, 0.0002 is an outlier.											
1012	For 5% significance level, 0.0002 is an outlier.											
1013	For 1% significance level, 0.0002 is an outlier.											
1014												
1015												
1016	Dixon's Outlier Test for Mercury (m-58a)											
1017												
1018	Number of Observations = 15											
1019	10% critical value: 0.472											
1020	5% critical value: 0.525											
1021	1% critical value: 0.616											
1022												
1023	1. Observation Value 0.0002 is a Potential Outlier (Upper Tail)											
1024												
1025	Test Statistic: NaN											
1026												
1027	For 10% significance level, 0.0002 is an outlier.											
1028	For 5% significance level, 0.0002 is an outlier.											
1029	For 1% significance level, 0.0002 is an outlier.											
1030												
1031	2. Observation Value 0.0002 is a Potential Outlier (Lower Tail)											
1032												
1033	Test Statistic: NaN											
1034												
1035	For 10% significance level, 0.0002 is an outlier.											
1036	For 5% significance level, 0.0002 is an outlier.											
1037	For 1% significance level, 0.0002 is an outlier.											
1038												
1039												
1040	Dixon's Outlier Test for Mercury (m-62a)											
1041												
1042	Number of Observations = 15											
1043	10% critical value: 0.472											
1044	5% critical value: 0.525											
1045	1% critical value: 0.616											
1046												
1047	1. Observation Value 0.0002 is a Potential Outlier (Upper Tail)											
1048												
1049	Test Statistic: NaN											
1050												

	A	B	C	D	E	F	G	H	I	J	K	L
1051	For 10% significance level, 0.0002 is an outlier.											
1052	For 5% significance level, 0.0002 is an outlier.											
1053	For 1% significance level, 0.0002 is an outlier.											
1054												
1055	2. Observation Value 0.0002 is a Potential Outlier (Lower Tail)											
1056												
1057	Test Statistic: NaN											
1058												
1059	For 10% significance level, 0.0002 is an outlier.											
1060	For 5% significance level, 0.0002 is an outlier.											
1061	For 1% significance level, 0.0002 is an outlier.											
1062												
1063												
1064	Dixon's Outlier Test for Molybdenum (m-56a)											
1065												
1066	Number of Observations = 19											
1067	10% critical value: 0.412											
1068	5% critical value: 0.462											
1069	1% critical value: 0.547											
1070												
1071	1. Observation Value 0.029 is a Potential Outlier (Upper Tail)											
1072												
1073	Test Statistic: 0.379											
1074												
1075	For 10% significance level, 0.029 is not an outlier.											
1076	For 5% significance level, 0.029 is not an outlier.											
1077	For 1% significance level, 0.029 is not an outlier.											
1078												
1079	2. Observation Value 0.0057 is a Potential Outlier (Lower Tail)											
1080												
1081	Test Statistic: 0.144											
1082												
1083	For 10% significance level, 0.0057 is not an outlier.											
1084	For 5% significance level, 0.0057 is not an outlier.											
1085	For 1% significance level, 0.0057 is not an outlier.											
1086												
1087												
1088	Dixon's Outlier Test for Molybdenum (m-57a)											
1089												
1090	Number of Observations = 18											
1091	10% critical value: 0.424											
1092	5% critical value: 0.475											
1093	1% critical value: 0.561											
1094												
1095	1. Observation Value 0.022 is a Potential Outlier (Upper Tail)											
1096												
1097	Test Statistic: 0.743											
1098												
1099	For 10% significance level, 0.022 is an outlier.											
1100	For 5% significance level, 0.022 is an outlier.											

	A	B	C	D	E	F	G	H	I	J	K	L
1101	For 1% significance level, 0.022 is an outlier.											
1102												
1103	2. Observation Value 0.0011 is a Potential Outlier (Lower Ta											
1104												
1105	Test Statistic: 0.269											
1106												
1107	For 10% significance level, 0.0011 is not an outlier.											
1108	For 5% significance level, 0.0011 is not an outlier.											
1109	For 1% significance level, 0.0011 is not an outlier.											
1110												
1111												
1112	Dixon's Outlier Test for Molybdenum (m-58a)											
1113												
1114	Number of Observations = 18											
1115	10% critical value: 0.424											
1116	5% critical value: 0.475											
1117	1% critical value: 0.561											
1118												
1119	1. Observation Value 0.02 is a Potential Outlier (Upper Tail)											
1120												
1121	Test Statistic: 0.832											
1122												
1123	For 10% significance level, 0.02 is an outlier.											
1124	For 5% significance level, 0.02 is an outlier.											
1125	For 1% significance level, 0.02 is an outlier.											
1126												
1127	2. Observation Value 0.0014 is a Potential Outlier (Lower Ta											
1128												
1129	Test Statistic: 0.061											
1130												
1131	For 10% significance level, 0.0014 is not an outlier.											
1132	For 5% significance level, 0.0014 is not an outlier.											
1133	For 1% significance level, 0.0014 is not an outlier.											
1134												
1135												
1136	Dixon's Outlier Test for Molybdenum (m-62a)											
1137												
1138	Number of Observations = 18											
1139	10% critical value: 0.424											
1140	5% critical value: 0.475											
1141	1% critical value: 0.561											
1142												
1143	1. Observation Value 0.011 is a Potential Outlier (Upper Tai											
1144												
1145	Test Statistic: 0.899											
1146												
1147	For 10% significance level, 0.011 is an outlier.											
1148	For 5% significance level, 0.011 is an outlier.											
1149	For 1% significance level, 0.011 is an outlier.											
1150												

	A	B	C	D	E	F	G	H	I	J	K	L
1151	2. Observation Value 0.0019 is a Potential Outlier (Lower Ta											
1152												
1153	Test Statistic: 0.182											
1154												
1155	For 10% significance level, 0.0019 is not an outlier.											
1156	For 5% significance level, 0.0019 is not an outlier.											
1157	For 1% significance level, 0.0019 is not an outlier.											
1158												
1159												
1160	Dixon's Outlier Test for Radium (m-56a)											
1161												
1162	Number of Observations = 17											
1163	10% critical value: 0.438											
1164	5% critical value: 0.49											
1165	1% critical value: 0.577											
1166												
1167	1. Observation Value 1.9 is a Potential Outlier (Upper Tail)?											
1168												
1169	Test Statistic: 0.143											
1170												
1171	For 10% significance level, 1.9 is not an outlier.											
1172	For 5% significance level, 1.9 is not an outlier.											
1173	For 1% significance level, 1.9 is not an outlier.											
1174												
1175	2. Observation Value 0.4 is a Potential Outlier (Lower Tail)?											
1176												
1177	Test Statistic: 0.077											
1178												
1179	For 10% significance level, 0.4 is not an outlier.											
1180	For 5% significance level, 0.4 is not an outlier.											
1181	For 1% significance level, 0.4 is not an outlier.											
1182												
1183												
1184	Dixon's Outlier Test for Radium (m-57a)											
1185												
1186	Number of Observations = 17											
1187	10% critical value: 0.438											
1188	5% critical value: 0.49											
1189	1% critical value: 0.577											
1190												
1191	1. Observation Value 1.5 is a Potential Outlier (Upper Tail)?											
1192												
1193	Test Statistic: 0.667											
1194												
1195	For 10% significance level, 1.5 is an outlier.											
1196	For 5% significance level, 1.5 is an outlier.											
1197	For 1% significance level, 1.5 is an outlier.											
1198												
1199	2. Observation Value 0.4 is a Potential Outlier (Lower Tail)?											
1200												

	A	B	C	D	E	F	G	H	I	J	K	L
1201	Test Statistic: 0.400											
1202												
1203	For 10% significance level, 0.4 is not an outlier.											
1204	For 5% significance level, 0.4 is not an outlier.											
1205	For 1% significance level, 0.4 is not an outlier.											
1206												
1207												
1208	Dixon's Outlier Test for Radium (m-58a)											
1209												
1210	Number of Observations = 17											
1211	10% critical value: 0.438											
1212	5% critical value: 0.49											
1213	1% critical value: 0.577											
1214												
1215	1. Observation Value 2.6 is a Potential Outlier (Upper Tail)?											
1216												
1217	Test Statistic: 0.350											
1218												
1219	For 10% significance level, 2.6 is not an outlier.											
1220	For 5% significance level, 2.6 is not an outlier.											
1221	For 1% significance level, 2.6 is not an outlier.											
1222												
1223	2. Observation Value 0.6 is a Potential Outlier (Lower Tail)?											
1224												
1225	Test Statistic: 0.000											
1226												
1227	For 10% significance level, 0.6 is not an outlier.											
1228	For 5% significance level, 0.6 is not an outlier.											
1229	For 1% significance level, 0.6 is not an outlier.											
1230												
1231												
1232	Dixon's Outlier Test for Radium (m-62a)											
1233												
1234	Number of Observations = 16											
1235	10% critical value: 0.454											
1236	5% critical value: 0.507											
1237	1% critical value: 0.595											
1238												
1239	1. Observation Value 2 is a Potential Outlier (Upper Tail)?											
1240												
1241	Test Statistic: 0.462											
1242												
1243	For 10% significance level, 2 is an outlier.											
1244	For 5% significance level, 2 is not an outlier.											
1245	For 1% significance level, 2 is not an outlier.											
1246												
1247	2. Observation Value 0.5 is a Potential Outlier (Lower Tail)?											
1248												
1249	Test Statistic: 0.222											
1250												

	A	B	C	D	E	F	G	H	I	J	K	L
1251	For 10% significance level, 0.5 is not an outlier.											
1252	For 5% significance level, 0.5 is not an outlier.											
1253	For 1% significance level, 0.5 is not an outlier.											
1254												
1255												
1256	Dixon's Outlier Test for Selenium (m-56a)											
1257												
1258	Number of Observations = 15											
1259	10% critical value: 0.472											
1260	5% critical value: 0.525											
1261	1% critical value: 0.616											
1262												
1263	1. Observation Value 0.01 is a Potential Outlier (Upper Tail)											
1264												
1265	Test Statistic: 0.947											
1266												
1267	For 10% significance level, 0.01 is an outlier.											
1268	For 5% significance level, 0.01 is an outlier.											
1269	For 1% significance level, 0.01 is an outlier.											
1270												
1271	2. Observation Value 0.00033 is a Potential Outlier (Lower T											
1272												
1273	Test Statistic: 0.254											
1274												
1275	For 10% significance level, 0.00033 is not an outlier.											
1276	For 5% significance level, 0.00033 is not an outlier.											
1277	For 1% significance level, 0.00033 is not an outlier.											
1278												
1279												
1280	Dixon's Outlier Test for Selenium (m-57a)											
1281												
1282	Number of Observations = 15											
1283	10% critical value: 0.472											
1284	5% critical value: 0.525											
1285	1% critical value: 0.616											
1286												
1287	1. Observation Value 0.01 is a Potential Outlier (Upper Tail)											
1288												
1289	Test Statistic: 0.947											
1290												
1291	For 10% significance level, 0.01 is an outlier.											
1292	For 5% significance level, 0.01 is an outlier.											
1293	For 1% significance level, 0.01 is an outlier.											
1294												
1295	2. Observation Value 0.00029 is a Potential Outlier (Lower T											
1296												
1297	Test Statistic: 0.296											
1298												
1299	For 10% significance level, 0.00029 is not an outlier.											
1300	For 5% significance level, 0.00029 is not an outlier.											

	A	B	C	D	E	F	G	H	I	J	K	L
1301	For 1% significance level, 0.00029 is not an outlier.											
1302												
1303												
1304	Dixon's Outlier Test for Selenium (m-58a)											
1305												
1306	Number of Observations = 15											
1307	10% critical value: 0.472											
1308	5% critical value: 0.525											
1309	1% critical value: 0.616											
1310												
1311	1. Observation Value 0.01 is a Potential Outlier (Upper Tail)											
1312												
1313	Test Statistic: 0.947											
1314												
1315	For 10% significance level, 0.01 is an outlier.											
1316	For 5% significance level, 0.01 is an outlier.											
1317	For 1% significance level, 0.01 is an outlier.											
1318												
1319	2. Observation Value 0.00024 is a Potential Outlier (Lower Tail)											
1320												
1321	Test Statistic: 0.342											
1322												
1323	For 10% significance level, 0.00024 is not an outlier.											
1324	For 5% significance level, 0.00024 is not an outlier.											
1325	For 1% significance level, 0.00024 is not an outlier.											
1326												
1327												
1328	Dixon's Outlier Test for Selenium (m-62a)											
1329												
1330	Number of Observations = 15											
1331	10% critical value: 0.472											
1332	5% critical value: 0.525											
1333	1% critical value: 0.616											
1334												
1335	1. Observation Value 0.01 is a Potential Outlier (Upper Tail)											
1336												
1337	Test Statistic: 0.947											
1338												
1339	For 10% significance level, 0.01 is an outlier.											
1340	For 5% significance level, 0.01 is an outlier.											
1341	For 1% significance level, 0.01 is an outlier.											
1342												
1343	2. Observation Value 0.0005 is a Potential Outlier (Lower Tail)											
1344												
1345	Test Statistic: 0.000											
1346												
1347	For 10% significance level, 0.0005 is not an outlier.											
1348	For 5% significance level, 0.0005 is not an outlier.											
1349	For 1% significance level, 0.0005 is not an outlier.											
1350												

	A	B	C	D	E	F	G	H	I	J	K	L
1351												
1352	Dixon's Outlier Test for Thallium (m-56a)											
1353												
1354	Number of Observations = 19											
1355	10% critical value: 0.412											
1356	5% critical value: 0.462											
1357	1% critical value: 0.547											
1358												
1359	1. Observation Value 0.002 is a Potential Outlier (Upper Tail)											
1360												
1361	Test Statistic: 0.947											
1362												
1363	For 10% significance level, 0.002 is an outlier.											
1364	For 5% significance level, 0.002 is an outlier.											
1365	For 1% significance level, 0.002 is an outlier.											
1366												
1367	2. Observation Value 0.0001 is a Potential Outlier (Lower Tail)											
1368												
1369	Test Statistic: 0.000											
1370												
1371	For 10% significance level, 0.0001 is not an outlier.											
1372	For 5% significance level, 0.0001 is not an outlier.											
1373	For 1% significance level, 0.0001 is not an outlier.											
1374												
1375												
1376	Dixon's Outlier Test for Thallium (m-57a)											
1377												
1378	Number of Observations = 19											
1379	10% critical value: 0.412											
1380	5% critical value: 0.462											
1381	1% critical value: 0.547											
1382												
1383	1. Observation Value 0.002 is a Potential Outlier (Upper Tail)											
1384												
1385	Test Statistic: 0.947											
1386												
1387	For 10% significance level, 0.002 is an outlier.											
1388	For 5% significance level, 0.002 is an outlier.											
1389	For 1% significance level, 0.002 is an outlier.											
1390												
1391	2. Observation Value 0.0001 is a Potential Outlier (Lower Tail)											
1392												
1393	Test Statistic: 0.000											
1394												
1395	For 10% significance level, 0.0001 is not an outlier.											
1396	For 5% significance level, 0.0001 is not an outlier.											
1397	For 1% significance level, 0.0001 is not an outlier.											
1398												
1399												
1400	Dixon's Outlier Test for Thallium (m-58a)											

	A	B	C	D	E	F	G	H	I	J	K	L
1401												
1402	Number of Observations = 19											
1403	10% critical value: 0.412											
1404	5% critical value: 0.462											
1405	1% critical value: 0.547											
1406												
1407	1. Observation Value 0.002 is a Potential Outlier (Upper Tail)											
1408												
1409	Test Statistic: 0.947											
1410												
1411	For 10% significance level, 0.002 is an outlier.											
1412	For 5% significance level, 0.002 is an outlier.											
1413	For 1% significance level, 0.002 is an outlier.											
1414												
1415	2. Observation Value 0.0001 is a Potential Outlier (Lower Tail)											
1416												
1417	Test Statistic: 0.000											
1418												
1419	For 10% significance level, 0.0001 is not an outlier.											
1420	For 5% significance level, 0.0001 is not an outlier.											
1421	For 1% significance level, 0.0001 is not an outlier.											
1422												
1423												
1424	Dixon's Outlier Test for Thallium (m-62a)											
1425												
1426	Number of Observations = 18											
1427	10% critical value: 0.424											
1428	5% critical value: 0.475											
1429	1% critical value: 0.561											
1430												
1431	1. Observation Value 0.0005 is a Potential Outlier (Upper Tail)											
1432												
1433	Test Statistic: 0.750											
1434												
1435	For 10% significance level, 0.0005 is an outlier.											
1436	For 5% significance level, 0.0005 is an outlier.											
1437	For 1% significance level, 0.0005 is an outlier.											
1438												
1439	2. Observation Value 0.0001 is a Potential Outlier (Lower Tail)											
1440												
1441	Test Statistic: 0.000											
1442												
1443	For 10% significance level, 0.0001 is not an outlier.											
1444	For 5% significance level, 0.0001 is not an outlier.											
1445	For 1% significance level, 0.0001 is not an outlier.											
1446												

	A	B	C	D	E	F	G	H	I	J	K	L
1				Mann-Kendall Trend Test Analysis								
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.14/12/2020 4:55:21 AM								
4	From File			SEDIPond_Cholla_AssessMonNov2019_NoDups.xls								
5	Full Precision			OFF								
6	Confidence Coefficient			0.95								
7	Level of Significance			0.05								
8												
9	Arsenic-m-56a											
10												
11	General Statistics											
12	Number of Events Reported (m)			20								
13	Number of Missing Events			2								
14	Number or Reported Events Used			18								
15	Number Values Reported (n)			20								
16	Number Values Missing			2								
17	Number Values Used			18								
18	Minimum			6.0000E-4								
19	Maximum			0.01								
20	Mean			0.00231								
21	Geometric Mean			0.00134								
22	Median			8.8000E-4								
23	Standard Deviation			0.00308								
24	Coefficient of Variation			1.334								
25												
26	Mann-Kendall Test											
27	M-K Test Value (S)			17								
28	Tabulated p-value			0.275								
29	Standard Deviation of S			26.4								
30	Standardized Value of S			0.606								
31	Approximate p-value			0.272								
32												
33	Insufficient evidence to identify a significant											
34	trend at the specified level of significance.											
35	Arsenic-m-57a											
36												
37	General Statistics											
38	Number of Events Reported (m)			20								
39	Number of Missing Events			2								
40	Number or Reported Events Used			18								
41	Number Values Reported (n)			20								
42	Number Values Missing			2								
43	Number Values Used			18								
44	Minimum			0.0017								
45	Maximum			0.0098								
46	Mean			0.00385								
47	Geometric Mean			0.00341								
48	Median			0.00325								
49	Standard Deviation			0.00211								
50	Coefficient of Variation			0.548								

	A	B	C	D	E	F	G	H	I	J	K	L
51												
52	Mann-Kendall Test											
53	M-K Test Value (S)				-74							
54	Tabulated p-value				0.002							
55	Standard Deviation of S				26.29							
56	Standardized Value of S				-2.776							
57	Approximate p-value				0.00275							
58												
59	Statistically significant evidence of a decreasing											
60	trend at the specified level of significance.											
61	Arsenic-m-58a											
62												
63	General Statistics											
64	Number of Events Reported (m)				20							
65	Number of Missing Events				2							
66	Number or Reported Events Used				18							
67	Number Values Reported (n)				20							
68	Number Values Missing				2							
69	Number Values Used				18							
70	Minimum				0.0025							
71	Maximum				0.01							
72	Mean				0.00432							
73	Geometric Mean				0.0041							
74	Median				0.00395							
75	Standard Deviation				0.00164							
76	Coefficient of Variation				0.38							
77												
78	Mann-Kendall Test											
79	M-K Test Value (S)				15							
80	Tabulated p-value				0.3							
81	Standard Deviation of S				26.36							
82	Standardized Value of S				0.531							
83	Approximate p-value				0.298							
84												
85	Insufficient evidence to identify a significant											
86	trend at the specified level of significance.											
87	Arsenic-m-62a											
88												
89	General Statistics											
90	Number of Events Reported (m)				20							
91	Number of Missing Events				2							
92	Number or Reported Events Used				18							
93	Number Values Reported (n)				20							
94	Number Values Missing				2							
95	Number Values Used				18							
96	Minimum				0.0016							
97	Maximum				0.01							
98	Mean				0.00302							
99	Geometric Mean				0.00275							
100	Median				0.0029							

	A	B	C	D	E	F	G	H	I	J	K	L
101	Standard Deviation				0.00182							
102	Coefficient of Variation				0.603							
103												
104	Mann-Kendall Test											
105	M-K Test Value (S)				24							
106	Tabulated p-value				0.184							
107	Standard Deviation of S				26.24							
108	Standardized Value of S				0.876							
109	Approximate p-value				0.19							
110												
111	Insufficient evidence to identify a significant											
112	trend at the specified level of significance.											

	A	B	C	D	E	F	G	H	I	J	K	L
1				Mann-Kendall Trend Test Analysis								
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.14/12/2020 5:55:13 AM								
4	From File			SEDIPond_Cholla_AssessMonNov2019_NoDups.xls								
5	Full Precision			OFF								
6	Confidence Coefficient			0.95								
7	Level of Significance			0.05								
8												
9	Barium-m-56a											
10												
11	General Statistics											
12	Number of Events Reported (m)			20								
13	Number of Missing Events			2								
14	Number or Reported Events Used			18								
15	Number Values Reported (n)			20								
16	Number Values Missing			2								
17	Number Values Used			18								
18	Minimum			0.055								
19	Maximum			0.086								
20	Mean			0.0717								
21	Geometric Mean			0.0712								
22	Median			0.0705								
23	Standard Deviation			0.00849								
24	Coefficient of Variation			0.118								
25												
26	Mann-Kendall Test											
27	M-K Test Value (S)			-76								
28	Tabulated p-value			0.001								
29	Standard Deviation of S			26.38								
30	Standardized Value of S			-2.843								
31	Approximate p-value			0.00224								
32												
33	Statistically significant evidence of a decreasing											
34	trend at the specified level of significance.											
35	Barium-m-57a											
36												
37	General Statistics											
38	Number of Events Reported (m)			20								
39	Number of Missing Events			2								
40	Number or Reported Events Used			18								
41	Number Values Reported (n)			20								
42	Number Values Missing			2								
43	Number Values Used			18								
44	Minimum			0.038								
45	Maximum			0.072								
46	Mean			0.0463								
47	Geometric Mean			0.0457								
48	Median			0.043								
49	Standard Deviation			0.00885								
50	Coefficient of Variation			0.191								

	A	B	C	D	E	F	G	H	I	J	K	L
51												
52	Mann-Kendall Test											
53	M-K Test Value (S)				-71							
54	Tabulated p-value				0.003							
55	Standard Deviation of S				26.22							
56	Standardized Value of S				-2.669							
57	Approximate p-value				0.0038							
58												
59	Statistically significant evidence of a decreasing											
60	trend at the specified level of significance.											
61	Barium-m-58a											
62												
63	General Statistics											
64	Number of Events Reported (m)				20							
65	Number of Missing Events				2							
66	Number or Reported Events Used				18							
67	Number Values Reported (n)				20							
68	Number Values Missing				2							
69	Number Values Used				18							
70	Minimum				0.043							
71	Maximum				0.11							
72	Mean				0.0697							
73	Geometric Mean				0.0675							
74	Median				0.065							
75	Standard Deviation				0.0186							
76	Coefficient of Variation				0.267							
77												
78	Mann-Kendall Test											
79	M-K Test Value (S)				-19							
80	Tabulated p-value				0.25							
81	Standard Deviation of S				26.36							
82	Standardized Value of S				-0.683							
83	Approximate p-value				0.247							
84												
85	Insufficient evidence to identify a significant											
86	trend at the specified level of significance.											
87	Barium-m-62a											
88												
89	General Statistics											
90	Number of Events Reported (m)				20							
91	Number of Missing Events				2							
92	Number or Reported Events Used				18							
93	Number Values Reported (n)				20							
94	Number Values Missing				2							
95	Number Values Used				18							
96	Minimum				0.064							
97	Maximum				0.16							
98	Mean				0.0793							
99	Geometric Mean				0.0776							
100	Median				0.075							

	A	B	C	D	E	F	G	H	I	J	K	L
101	Standard Deviation				0.0209							
102	Coefficient of Variation				0.263							
103												
104	Mann-Kendall Test											
105	M-K Test Value (S)				-83							
106	Tabulated p-value				0.001							
107	Standard Deviation of S				26.29							
108	Standardized Value of S				-3.119							
109	Approximate p-value				9.0602E-4							
110												
111	Statistically significant evidence of a decreasing											
112	trend at the specified level of significance.											

	A	B	C	D	E	F	G	H	I	J	K	L
1				Mann-Kendall Trend Test Analysis								
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.14/12/2020 6:20:47 AM								
4	From File			SEDIPond_Cholla_AssessMonNov2019_NoDups.xls								
5	Full Precision			OFF								
6	Confidence Coefficient			0.95								
7	Level of Significance			0.05								
8												
9	Beryllium-m-56a											
10												
11	General Statistics											
12	Number of Events Reported (m)			20								
13	Number of Missing Events			5								
14	Number or Reported Events Used			15								
15	Number Values Reported (n)			20								
16	Number Values Missing			5								
17	Number Values Used			15								
18	Minimum			0.001								
19	Maximum			0.001								
20	Mean			0.001								
21	Geometric Mean			0.001								
22	Median			0.001								
23	Standard Deviation			4.489E-19								
24	Coefficient of Variation			N/A								
25												
26	Mann-Kendall Test											
27	M-K Test Value (S)			0								
28	Tabulated p-value			0.5								
29	Standard Deviation of S			0								
30	Standardized Value of S			N/A								
31	Approximate p-value			N/A								
32												
33	Insufficient evidence to identify a significant											
34	trend at the specified level of significance.											
35	Beryllium-m-57a											
36												
37	General Statistics											
38	Number of Events Reported (m)			20								
39	Number of Missing Events			5								
40	Number or Reported Events Used			15								
41	Number Values Reported (n)			20								
42	Number Values Missing			5								
43	Number Values Used			15								
44	Minimum			0.001								
45	Maximum			0.001								
46	Mean			0.001								
47	Geometric Mean			0.001								
48	Median			0.001								
49	Standard Deviation			4.489E-19								
50	Coefficient of Variation			N/A								

	A	B	C	D	E	F	G	H	I	J	K	L
51												
52	Mann-Kendall Test											
53	M-K Test Value (S)				0							
54	Tabulated p-value				0.5							
55	Standard Deviation of S				0							
56	Standardized Value of S				N/A							
57	Approximate p-value				N/A							
58												
59	Insufficient evidence to identify a significant											
60	trend at the specified level of significance.											
61	Beryllium-m-58a											
62												
63	General Statistics											
64	Number of Events Reported (m)				20							
65	Number of Missing Events				5							
66	Number or Reported Events Used				15							
67	Number Values Reported (n)				20							
68	Number Values Missing				5							
69	Number Values Used				15							
70	Minimum				0.001							
71	Maximum				0.001							
72	Mean				0.001							
73	Geometric Mean				0.001							
74	Median				0.001							
75	Standard Deviation				4.489E-19							
76	Coefficient of Variation				N/A							
77												
78	Mann-Kendall Test											
79	M-K Test Value (S)				0							
80	Tabulated p-value				0.5							
81	Standard Deviation of S				0							
82	Standardized Value of S				N/A							
83	Approximate p-value				N/A							
84												
85	Insufficient evidence to identify a significant											
86	trend at the specified level of significance.											
87	Beryllium-m-62a											
88												
89	General Statistics											
90	Number of Events Reported (m)				20							
91	Number of Missing Events				5							
92	Number or Reported Events Used				15							
93	Number Values Reported (n)				20							
94	Number Values Missing				5							
95	Number Values Used				15							
96	Minimum				0.001							
97	Maximum				0.001							
98	Mean				0.001							
99	Geometric Mean				0.001							
100	Median				0.001							

	A	B	C	D	E	F	G	H	I	J	K	L
101	Standard Deviation				4.489E-19							
102	Coefficient of Variation				N/A							
103												
104	Mann-Kendall Test											
105	M-K Test Value (S)				0							
106	Tabulated p-value				0.5							
107	Standard Deviation of S				0							
108	Standardized Value of S				N/A							
109	Approximate p-value				N/A							
110												
111	Insufficient evidence to identify a significant											
112	trend at the specified level of significance.											

	A	B	C	D	E	F	G	H	I	J	K	L
1				Mann-Kendall Trend Test Analysis								
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.14/12/2020 6:25:32 AM								
4	From File			SEDIPond_Cholla_AssessMonNov2019_NoDups.xls								
5	Full Precision			OFF								
6	Confidence Coefficient			0.95								
7	Level of Significance			0.05								
8												
9	Cadmium-m-56a											
10												
11	General Statistics											
12	Number of Events Reported (m)			20								
13	Number of Missing Events			5								
14	Number or Reported Events Used			15								
15	Number Values Reported (n)			20								
16	Number Values Missing			5								
17	Number Values Used			15								
18	Minimum			1.0000E-4								
19	Maximum			0.002								
20	Mean			2.5333E-4								
21	Geometric Mean			1.4026E-4								
22	Median			1.0000E-4								
23	Standard Deviation			4.8970E-4								
24	Coefficient of Variation			1.933								
25												
26	Mann-Kendall Test											
27	M-K Test Value (S)			5								
28	Tabulated p-value			0.423								
29	Standard Deviation of S			13.99								
30	Standardized Value of S			0.286								
31	Approximate p-value			0.387								
32												
33	Insufficient evidence to identify a significant											
34	trend at the specified level of significance.											
35	Cadmium-m-57a											
36												
37	General Statistics											
38	Number of Events Reported (m)			20								
39	Number of Missing Events			5								
40	Number or Reported Events Used			15								
41	Number Values Reported (n)			20								
42	Number Values Missing			5								
43	Number Values Used			15								
44	Minimum			1.0000E-4								
45	Maximum			0.002								
46	Mean			2.6000E-4								
47	Geometric Mean			1.4690E-4								
48	Median			1.0000E-4								
49	Standard Deviation			4.8815E-4								
50	Coefficient of Variation			1.877								

	A	B	C	D	E	F	G	H	I	J	K	L
51												
52	Mann-Kendall Test											
53	M-K Test Value (S)				15							
54	Tabulated p-value				0.248							
55	Standard Deviation of S				15.57							
56	Standardized Value of S				0.899							
57	Approximate p-value				0.184							
58												
59	Insufficient evidence to identify a significant											
60	trend at the specified level of significance.											
61	Cadmium-m-58a											
62												
63	General Statistics											
64	Number of Events Reported (m)				20							
65	Number of Missing Events				5							
66	Number or Reported Events Used				15							
67	Number Values Reported (n)				20							
68	Number Values Missing				5							
69	Number Values Used				15							
70	Minimum				1.0000E-4							
71	Maximum				0.002							
72	Mean				2.6000E-4							
73	Geometric Mean				1.4690E-4							
74	Median				1.0000E-4							
75	Standard Deviation				4.8815E-4							
76	Coefficient of Variation				1.877							
77												
78	Mann-Kendall Test											
79	M-K Test Value (S)				15							
80	Tabulated p-value				0.248							
81	Standard Deviation of S				15.57							
82	Standardized Value of S				0.899							
83	Approximate p-value				0.184							
84												
85	Insufficient evidence to identify a significant											
86	trend at the specified level of significance.											
87	Cadmium-m-62a											
88												
89	General Statistics											
90	Number of Events Reported (m)				20							
91	Number of Missing Events				5							
92	Number or Reported Events Used				15							
93	Number Values Reported (n)				20							
94	Number Values Missing				5							
95	Number Values Used				15							
96	Minimum				1.0000E-4							
97	Maximum				0.002							
98	Mean				2.6000E-4							
99	Geometric Mean				1.4690E-4							
100	Median				1.0000E-4							

	A	B	C	D	E	F	G	H	I	J	K	L
101	Standard Deviation				4.8815E-4							
102	Coefficient of Variation				1.877							
103												
104	Mann-Kendall Test											
105	M-K Test Value (S)				15							
106	Tabulated p-value				0.248							
107	Standard Deviation of S				15.57							
108	Standardized Value of S				0.899							
109	Approximate p-value				0.184							
110												
111	Insufficient evidence to identify a significant											
112	trend at the specified level of significance.											

	A	B	C	D	E	F	G	H	I	J	K	L
1				Mann-Kendall Trend Test Analysis								
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.14/12/2020 2:37:14 PM								
4	From File			SEDIPond_Cholla_AssessMonNov2019_NoDups.xls								
5	Full Precision			OFF								
6	Confidence Coefficient			0.95								
7	Level of Significance			0.05								
8												
9	Cobalt-m-56a											
10												
11	General Statistics											
12	Number of Events Reported (m)			20								
13	Number of Missing Events			2								
14	Number or Reported Events Used			18								
15	Number Values Reported (n)			20								
16	Number Values Missing			2								
17	Number Values Used			18								
18	Minimum			5.0000E-4								
19	Maximum			0.002								
20	Mean			0.001								
21	Geometric Mean			9.0278E-4								
22	Median			8.8500E-4								
23	Standard Deviation			4.7607E-4								
24	Coefficient of Variation			0.476								
25												
26	Mann-Kendall Test											
27	M-K Test Value (S)			-38								
28	Tabulated p-value			0.076								
29	Standard Deviation of S			26.08								
30	Standardized Value of S			-1.419								
31	Approximate p-value			0.078								
32												
33	Insufficient evidence to identify a significant											
34	trend at the specified level of significance.											
35	Cobalt-m-57a											
36												
37	General Statistics											
38	Number of Events Reported (m)			20								
39	Number of Missing Events			2								
40	Number or Reported Events Used			18								
41	Number Values Reported (n)			20								
42	Number Values Missing			2								
43	Number Values Used			18								
44	Minimum			0.004								
45	Maximum			0.0088								
46	Mean			0.00709								
47	Geometric Mean			0.00693								
48	Median			0.00765								
49	Standard Deviation			0.00146								
50	Coefficient of Variation			0.206								

	A	B	C	D	E	F	G	H	I	J	K	L
51												
52	Mann-Kendall Test											
53	M-K Test Value (S)				-57							
54	Tabulated p-value				0.016							
55	Standard Deviation of S				26.36							
56	Standardized Value of S				-2.124							
57	Approximate p-value				0.0168							
58												
59	Statistically significant evidence of a decreasing											
60	trend at the specified level of significance.											
61	Cobalt-m-58a											
62												
63	General Statistics											
64	Number of Events Reported (m)				20							
65	Number of Missing Events				2							
66	Number or Reported Events Used				18							
67	Number Values Reported (n)				20							
68	Number Values Missing				2							
69	Number Values Used				18							
70	Minimum				5.0000E-4							
71	Maximum				0.01							
72	Mean				0.00125							
73	Geometric Mean				7.7238E-4							
74	Median				5.0500E-4							
75	Standard Deviation				0.00222							
76	Coefficient of Variation				1.779							
77												
78	Mann-Kendall Test											
79	M-K Test Value (S)				-46							
80	Tabulated p-value				0.041							
81	Standard Deviation of S				24.58							
82	Standardized Value of S				-1.831							
83	Approximate p-value				0.0335							
84												
85	Statistically significant evidence of a decreasing											
86	trend at the specified level of significance.											
87	Cobalt-m-62a											
88												
89	General Statistics											
90	Number of Events Reported (m)				20							
91	Number of Missing Events				2							
92	Number or Reported Events Used				18							
93	Number Values Reported (n)				20							
94	Number Values Missing				2							
95	Number Values Used				18							
96	Minimum				4.6000E-4							
97	Maximum				0.0022							
98	Mean				7.7222E-4							
99	Geometric Mean				6.6463E-4							
100	Median				5.0000E-4							

	A	B	C	D	E	F	G	H	I	J	K	L
101	Standard Deviation				5.3133E-4							
102	Coefficient of Variation				0.688							
103												
104	Mann-Kendall Test											
105	M-K Test Value (S)				-15							
106	Tabulated p-value				0.3							
107	Standard Deviation of S				23.04							
108	Standardized Value of S				-0.608							
109	Approximate p-value				0.272							
110												
111	Insufficient evidence to identify a significant											
112	trend at the specified level of significance.											

	A	B	C	D	E	F	G	H	I	J	K	L
1				Mann-Kendall Trend Test Analysis								
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.14/12/2020 1:06:23 PM								
4	From File			SEDIPond_Cholla_AssessMonNov2019_NoDups.xls								
5	Full Precision			OFF								
6	Confidence Coefficient			0.95								
7	Level of Significance			0.05								
8												
9	Chromium-m-56a											
10												
11	General Statistics											
12	Number of Events Reported (m)			20								
13	Number of Missing Events			2								
14	Number or Reported Events Used			18								
15	Number Values Reported (n)			20								
16	Number Values Missing			2								
17	Number Values Used			18								
18	Minimum			5.0000E-4								
19	Maximum			0.076								
20	Mean			0.0104								
21	Geometric Mean			0.00456								
22	Median			0.0049								
23	Standard Deviation			0.0175								
24	Coefficient of Variation			1.683								
25												
26	Mann-Kendall Test											
27	M-K Test Value (S)			44								
28	Tabulated p-value			0.048								
29	Standard Deviation of S			26.38								
30	Standardized Value of S			1.63								
31	Approximate p-value			0.0516								
32												
33	Statistically significant evidence of an increasing											
34	trend at the specified level of significance.											
35	Chromium-m-57a											
36												
37	General Statistics											
38	Number of Events Reported (m)			20								
39	Number of Missing Events			2								
40	Number or Reported Events Used			18								
41	Number Values Reported (n)			20								
42	Number Values Missing			2								
43	Number Values Used			18								
44	Minimum			5.0000E-4								
45	Maximum			0.045								
46	Mean			0.0185								
47	Geometric Mean			0.00988								
48	Median			0.0155								
49	Standard Deviation			0.015								
50	Coefficient of Variation			0.807								

	A	B	C	D	E	F	G	H	I	J	K	L
51												
52	Mann-Kendall Test											
53	M-K Test Value (S)				37							
54	Tabulated p-value				0.008							
55	Standard Deviation of S				26.4							
56	Standardized Value of S				1.364							
57	Approximate p-value				0.0863							
58												
59	Statistically significant evidence of an increasing											
60	trend at the specified level of significance.											
61	Chromium-m-58a											
62												
63	General Statistics											
64	Number of Events Reported (m)				20							
65	Number of Missing Events				2							
66	Number or Reported Events Used				18							
67	Number Values Reported (n)				20							
68	Number Values Missing				2							
69	Number Values Used				18							
70	Minimum				5.0000E-4							
71	Maximum				0.01							
72	Mean				0.00186							
73	Geometric Mean				0.00124							
74	Median				0.001							
75	Standard Deviation				0.00228							
76	Coefficient of Variation				1.225							
77												
78	Mann-Kendall Test											
79	M-K Test Value (S)				16							
80	Tabulated p-value				0.275							
81	Standard Deviation of S				26.01							
82	Standardized Value of S				0.577							
83	Approximate p-value				0.282							
84												
85	Insufficient evidence to identify a significant											
86	trend at the specified level of significance.											
87	Chromium-m-62a											
88												
89	General Statistics											
90	Number of Events Reported (m)				20							
91	Number of Missing Events				2							
92	Number or Reported Events Used				18							
93	Number Values Reported (n)				20							
94	Number Values Missing				2							
95	Number Values Used				18							
96	Minimum				5.0000E-4							
97	Maximum				0.01							
98	Mean				0.00196							
99	Geometric Mean				0.00142							
100	Median				0.00105							

	A	B	C	D	E	F	G	H	I	J	K	L
101	Standard Deviation				0.00222							
102	Coefficient of Variation				1.135							
103												
104	Mann-Kendall Test											
105	M-K Test Value (S)				18							
106	Tabulated p-value				0.25							
107	Standard Deviation of S				26.22							
108	Standardized Value of S				0.648							
109	Approximate p-value				0.258							
110												
111	Insufficient evidence to identify a significant											
112	trend at the specified level of significance.											

	A	B	C	D	E	F	G	H	I	J	K	L
1				Mann-Kendall Trend Test Analysis								
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.14/12/2020 2:54:31 PM								
4	From File			SEDIPond_Cholla_AssessMonNov2019_NoDups.xls								
5	Full Precision			OFF								
6	Confidence Coefficient			0.95								
7	Level of Significance			0.05								
8												
9	Fluoride-m-56a											
10												
11	General Statistics											
12	Number of Events Reported (m)			20								
13	Number of Missing Events			1								
14	Number or Reported Events Used			19								
15	Number Values Reported (n)			20								
16	Number Values Missing			1								
17	Number Values Used			19								
18	Minimum			0.4								
19	Maximum			0.8								
20	Mean			0.457								
21	Geometric Mean			0.445								
22	Median			0.4								
23	Standard Deviation			0.124								
24	Coefficient of Variation			0.271								
25												
26	Mann-Kendall Test											
27	M-K Test Value (S)			-1								
28	Tabulated p-value			0.5								
29	Standard Deviation of S			25.51								
30	Standardized Value of S			0								
31	Approximate p-value			0.5								
32												
33	Insufficient evidence to identify a significant											
34	trend at the specified level of significance.											
35	Fluoride-m-57a											
36												
37	General Statistics											
38	Number of Events Reported (m)			20								
39	Number of Missing Events			1								
40	Number or Reported Events Used			19								
41	Number Values Reported (n)			20								
42	Number Values Missing			1								
43	Number Values Used			19								
44	Minimum			0.4								
45	Maximum			0.8								
46	Mean			0.429								
47	Geometric Mean			0.422								
48	Median			0.4								
49	Standard Deviation			0.0947								
50	Coefficient of Variation			0.221								

	A	B	C	D	E	F	G	H	I	J	K	L
51												
52	Mann-Kendall Test											
53	M-K Test Value (S)				35							
54	Tabulated p-value				0.119							
55	Standard Deviation of S				17.99							
56	Standardized Value of S				1.89							
57	Approximate p-value				0.0294							
58												
59	Insufficient evidence to identify a significant											
60	trend at the specified level of significance.											
61	Fluoride-m-58a											
62												
63	General Statistics											
64	Number of Events Reported (m)				20							
65	Number of Missing Events				1							
66	Number or Reported Events Used				19							
67	Number Values Reported (n)				20							
68	Number Values Missing				1							
69	Number Values Used				19							
70	Minimum				0.4							
71	Maximum				0.8							
72	Mean				0.444							
73	Geometric Mean				0.432							
74	Median				0.4							
75	Standard Deviation				0.126							
76	Coefficient of Variation				0.283							
77												
78	Mann-Kendall Test											
79	M-K Test Value (S)				-4							
80	Tabulated p-value				0.445							
81	Standard Deviation of S				17.96							
82	Standardized Value of S				-0.167							
83	Approximate p-value				0.434							
84												
85	Insufficient evidence to identify a significant											
86	trend at the specified level of significance.											
87	Fluoride-m-62a											
88												
89	General Statistics											
90	Number of Events Reported (m)				20							
91	Number of Missing Events				1							
92	Number or Reported Events Used				19							
93	Number Values Reported (n)				20							
94	Number Values Missing				1							
95	Number Values Used				19							
96	Minimum				0.4							
97	Maximum				0.8							
98	Mean				0.488							
99	Geometric Mean				0.467							
100	Median				0.4							

	A	B	C	D	E	F	G	H	I	J	K	L
101	Standard Deviation				0.166							
102	Coefficient of Variation				0.341							
103												
104	Mann-Kendall Test											
105	M-K Test Value (S)				-32							
106	Tabulated p-value				0.133							
107	Standard Deviation of S				21.79							
108	Standardized Value of S				-1.423							
109	Approximate p-value				0.0774							
110												
111	Insufficient evidence to identify a significant											
112	trend at the specified level of significance.											

	A	B	C	D	E	F	G	H	I	J	K	L
1				Mann-Kendall Trend Test Analysis								
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.14/12/2020 3:43:41 PM								
4	From File			SEDIPond_Cholla_AssessMonNov2019_NoDups.xls								
5	Full Precision			OFF								
6	Confidence Coefficient			0.95								
7	Level of Significance			0.05								
8												
9	Mercury-m-56a											
10												
11	General Statistics											
12	Number of Events Reported (m)			20								
13	Number of Missing Events			5								
14	Number or Reported Events Used			15								
15	Number Values Reported (n)			20								
16	Number Values Missing			5								
17	Number Values Used			15								
18	Minimum			2.0000E-4								
19	Maximum			2.0000E-4								
20	Mean			2.0000E-4								
21	Geometric Mean			2.0000E-4								
22	Median			2.0000E-4								
23	Standard Deviation			5.611E-20								
24	Coefficient of Variation			N/A								
25												
26	Mann-Kendall Test											
27	M-K Test Value (S)			0								
28	Tabulated p-value			0.5								
29	Standard Deviation of S			0								
30	Standardized Value of S			N/A								
31	Approximate p-value			N/A								
32												
33	Insufficient evidence to identify a significant											
34	trend at the specified level of significance.											
35	Mercury-m-57a											
36												
37	General Statistics											
38	Number of Events Reported (m)			20								
39	Number of Missing Events			5								
40	Number or Reported Events Used			15								
41	Number Values Reported (n)			20								
42	Number Values Missing			5								
43	Number Values Used			15								
44	Minimum			2.0000E-4								
45	Maximum			2.0000E-4								
46	Mean			2.0000E-4								
47	Geometric Mean			2.0000E-4								
48	Median			2.0000E-4								
49	Standard Deviation			5.611E-20								
50	Coefficient of Variation			N/A								

	A	B	C	D	E	F	G	H	I	J	K	L
51												
52	Mann-Kendall Test											
53	M-K Test Value (S)				0							
54	Tabulated p-value				0.5							
55	Standard Deviation of S				0							
56	Standardized Value of S				N/A							
57	Approximate p-value				N/A							
58												
59	Insufficient evidence to identify a significant											
60	trend at the specified level of significance.											
61	Mercury-m-58a											
62												
63	General Statistics											
64	Number of Events Reported (m)				20							
65	Number of Missing Events				5							
66	Number or Reported Events Used				15							
67	Number Values Reported (n)				20							
68	Number Values Missing				5							
69	Number Values Used				15							
70	Minimum				2.0000E-4							
71	Maximum				2.0000E-4							
72	Mean				2.0000E-4							
73	Geometric Mean				2.0000E-4							
74	Median				2.0000E-4							
75	Standard Deviation				5.611E-20							
76	Coefficient of Variation				N/A							
77												
78	Mann-Kendall Test											
79	M-K Test Value (S)				0							
80	Tabulated p-value				0.5							
81	Standard Deviation of S				0							
82	Standardized Value of S				N/A							
83	Approximate p-value				N/A							
84												
85	Insufficient evidence to identify a significant											
86	trend at the specified level of significance.											
87	Mercury-m-62a											
88												
89	General Statistics											
90	Number of Events Reported (m)				20							
91	Number of Missing Events				5							
92	Number or Reported Events Used				15							
93	Number Values Reported (n)				20							
94	Number Values Missing				5							
95	Number Values Used				15							
96	Minimum				2.0000E-4							
97	Maximum				2.0000E-4							
98	Mean				2.0000E-4							
99	Geometric Mean				2.0000E-4							
100	Median				2.0000E-4							

	A	B	C	D	E	F	G	H	I	J	K	L
101	Standard Deviation				5.611E-20							
102	Coefficient of Variation				N/A							
103												
104	Mann-Kendall Test											
105	M-K Test Value (S)				0							
106	Tabulated p-value				0.5							
107	Standard Deviation of S				0							
108	Standardized Value of S				N/A							
109	Approximate p-value				N/A							
110												
111	Insufficient evidence to identify a significant											
112	trend at the specified level of significance.											

	A	B	C	D	E	F	G	H	I	J	K	L
1				Mann-Kendall Trend Test Analysis								
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.14/12/2020 3:14:36 PM								
4	From File			SEDIPond_Cholla_AssessMonNov2019_NoDups.xls								
5	Full Precision			OFF								
6	Confidence Coefficient			0.95								
7	Level of Significance			0.05								
8												
9	Lithium-m-56a											
10												
11	General Statistics											
12	Number of Events Reported (m)			20								
13	Number of Missing Events			4								
14	Number or Reported Events Used			16								
15	Number Values Reported (n)			20								
16	Number Values Missing			4								
17	Number Values Used			16								
18	Minimum			0.2								
19	Maximum			0.2								
20	Mean			0.2								
21	Geometric Mean			0.2								
22	Median			0.2								
23	Standard Deviation			2.867E-17								
24	Coefficient of Variation			N/A								
25												
26	Mann-Kendall Test											
27	M-K Test Value (S)			0								
28	Tabulated p-value			0.518								
29	Standard Deviation of S			0								
30	Standardized Value of S			N/A								
31	Approximate p-value			N/A								
32												
33	Insufficient evidence to identify a significant											
34	trend at the specified level of significance.											
35	Lithium-m-57a											
36												
37	General Statistics											
38	Number of Events Reported (m)			20								
39	Number of Missing Events			4								
40	Number or Reported Events Used			16								
41	Number Values Reported (n)			20								
42	Number Values Missing			4								
43	Number Values Used			16								
44	Minimum			0.2								
45	Maximum			0.2								
46	Mean			0.2								
47	Geometric Mean			0.2								
48	Median			0.2								
49	Standard Deviation			2.867E-17								
50	Coefficient of Variation			N/A								

	A	B	C	D	E	F	G	H	I	J	K	L
51												
52	Mann-Kendall Test											
53	M-K Test Value (S)				0							
54	Tabulated p-value				0.518							
55	Standard Deviation of S				0							
56	Standardized Value of S				N/A							
57	Approximate p-value				N/A							
58												
59	Insufficient evidence to identify a significant											
60	trend at the specified level of significance.											
61	Lithium-m-58a											
62												
63	General Statistics											
64	Number of Events Reported (m)				20							
65	Number of Missing Events				4							
66	Number or Reported Events Used				16							
67	Number Values Reported (n)				20							
68	Number Values Missing				4							
69	Number Values Used				16							
70	Minimum				0.2							
71	Maximum				0.2							
72	Mean				0.2							
73	Geometric Mean				0.2							
74	Median				0.2							
75	Standard Deviation				2.867E-17							
76	Coefficient of Variation				N/A							
77												
78	Mann-Kendall Test											
79	M-K Test Value (S)				0							
80	Tabulated p-value				0.518							
81	Standard Deviation of S				0							
82	Standardized Value of S				N/A							
83	Approximate p-value				N/A							
84												
85	Insufficient evidence to identify a significant											
86	trend at the specified level of significance.											
87	Lithium-m-62a											
88												
89	General Statistics											
90	Number of Events Reported (m)				20							
91	Number of Missing Events				4							
92	Number or Reported Events Used				16							
93	Number Values Reported (n)				20							
94	Number Values Missing				4							
95	Number Values Used				16							
96	Minimum				0.2							
97	Maximum				0.2							
98	Mean				0.2							
99	Geometric Mean				0.2							
100	Median				0.2							

	A	B	C	D	E	F	G	H	I	J	K	L
101	Standard Deviation				2.867E-17							
102	Coefficient of Variation				N/A							
103												
104	Mann-Kendall Test											
105	M-K Test Value (S)				0							
106	Tabulated p-value				0.518							
107	Standard Deviation of S				0							
108	Standardized Value of S				N/A							
109	Approximate p-value				N/A							
110												
111	Insufficient evidence to identify a significant											
112	trend at the specified level of significance.											

	A	B	C	D	E	F	G	H	I	J	K	L
1				Mann-Kendall Trend Test Analysis								
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.14/12/2020 3:48:29 PM								
4	From File			SEDIPond_Cholla_AssessMonNov2019_NoDups.xls								
5	Full Precision			OFF								
6	Confidence Coefficient			0.95								
7	Level of Significance			0.05								
8												
9	Molybdenum-m-56a											
10												
11	General Statistics											
12	Number of Events Reported (m)			20								
13	Number of Missing Events			1								
14	Number or Reported Events Used			19								
15	Number Values Reported (n)			20								
16	Number Values Missing			1								
17	Number Values Used			19								
18	Minimum			0.0057								
19	Maximum			0.029								
20	Mean			0.0126								
21	Geometric Mean			0.0115								
22	Median			0.011								
23	Standard Deviation			0.00592								
24	Coefficient of Variation			0.471								
25												
26	Mann-Kendall Test											
27	M-K Test Value (S)			-93								
28	Tabulated p-value			0								
29	Standard Deviation of S			28.5								
30	Standardized Value of S			-3.228								
31	Approximate p-value			6.2350E-4								
32												
33	Statistically significant evidence of a decreasing											
34	trend at the specified level of significance.											
35	Molybdenum-m-57a											
36												
37	General Statistics											
38	Number of Events Reported (m)			20								
39	Number of Missing Events			2								
40	Number or Reported Events Used			18								
41	Number Values Reported (n)			20								
42	Number Values Missing			2								
43	Number Values Used			18								
44	Minimum			0.0011								
45	Maximum			0.022								
46	Mean			0.00552								
47	Geometric Mean			0.00453								
48	Median			0.0044								
49	Standard Deviation			0.0045								
50	Coefficient of Variation			0.816								

	A	B	C	D	E	F	G	H	I	J	K	L
51												
52	Mann-Kendall Test											
53	M-K Test Value (S)				-6							
54	Tabulated p-value				0.411							
55	Standard Deviation of S				26.38							
56	Standardized Value of S				-0.19							
57	Approximate p-value				0.425							
58												
59	Insufficient evidence to identify a significant											
60	trend at the specified level of significance.											
61	Molybdenum-m-58a											
62												
63	General Statistics											
64	Number of Events Reported (m)				20							
65	Number of Missing Events				2							
66	Number or Reported Events Used				18							
67	Number Values Reported (n)				20							
68	Number Values Missing				2							
69	Number Values Used				18							
70	Minimum				0.0014							
71	Maximum				0.02							
72	Mean				0.00347							
73	Geometric Mean				0.00242							
74	Median				0.0018							
75	Standard Deviation				0.00459							
76	Coefficient of Variation				1.324							
77												
78	Mann-Kendall Test											
79	M-K Test Value (S)				-42							
80	Tabulated p-value				0.056							
81	Standard Deviation of S				25.82							
82	Standardized Value of S				-1.588							
83	Approximate p-value				0.0562							
84												
85	Insufficient evidence to identify a significant											
86	trend at the specified level of significance.											
87	Molybdenum-m-62a											
88												
89	General Statistics											
90	Number of Events Reported (m)				20							
91	Number of Missing Events				2							
92	Number or Reported Events Used				18							
93	Number Values Reported (n)				20							
94	Number Values Missing				2							
95	Number Values Used				18							
96	Minimum				0.0019							
97	Maximum				0.011							
98	Mean				0.00294							
99	Geometric Mean				0.00263							
100	Median				0.0023							

	A	B	C	D	E	F	G	H	I	J	K	L
101	Standard Deviation				0.00209							
102	Coefficient of Variation				0.71							
103												
104	Mann-Kendall Test											
105	M-K Test Value (S)				2							
106	Tabulated p-value				0.47							
107	Standard Deviation of S				26.13							
108	Standardized Value of S				0.0383							
109	Approximate p-value				0.485							
110												
111	Insufficient evidence to identify a significant											
112	trend at the specified level of significance.											

	A	B	C	D	E	F	G	H	I	J	K	L
1				Mann-Kendall Trend Test Analysis								
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.14/12/2020 3:15:06 PM								
4	From File			SEDIPond_Cholla_AssessMonNov2019_NoDups.xls								
5	Full Precision			OFF								
6	Confidence Coefficient			0.95								
7	Level of Significance			0.05								
8												
9	Lead-m-56a											
10												
11	General Statistics											
12	Number of Events Reported (m)			20								
13	Number of Missing Events			5								
14	Number or Reported Events Used			15								
15	Number Values Reported (n)			20								
16	Number Values Missing			5								
17	Number Values Used			15								
18	Minimum			1.0000E-4								
19	Maximum			0.01								
20	Mean			0.00124								
21	Geometric Mean			6.2996E-4								
22	Median			5.0000E-4								
23	Standard Deviation			0.00246								
24	Coefficient of Variation			1.984								
25												
26	Mann-Kendall Test											
27	M-K Test Value (S)			10								
28	Tabulated p-value			0.313								
29	Standard Deviation of S			15.6								
30	Standardized Value of S			0.577								
31	Approximate p-value			0.282								
32												
33	Insufficient evidence to identify a significant											
34	trend at the specified level of significance.											
35	Lead-m-57a											
36												
37	General Statistics											
38	Number of Events Reported (m)			20								
39	Number of Missing Events			5								
40	Number or Reported Events Used			15								
41	Number Values Reported (n)			20								
42	Number Values Missing			5								
43	Number Values Used			15								
44	Minimum			2.1000E-4								
45	Maximum			0.01								
46	Mean			0.0013								
47	Geometric Mean			7.1873E-4								
48	Median			5.0000E-4								
49	Standard Deviation			0.00244								
50	Coefficient of Variation			1.872								

	A	B	C	D	E	F	G	H	I	J	K	L
51												
52	Mann-Kendall Test											
53	M-K Test Value (S)				10							
54	Tabulated p-value				0.313							
55	Standard Deviation of S				17.76							
56	Standardized Value of S				0.507							
57	Approximate p-value				0.306							
58												
59	Insufficient evidence to identify a significant											
60	trend at the specified level of significance.											
61	Lead-m-58a											
62												
63	General Statistics											
64	Number of Events Reported (m)				20							
65	Number of Missing Events				5							
66	Number or Reported Events Used				15							
67	Number Values Reported (n)				20							
68	Number Values Missing				5							
69	Number Values Used				15							
70	Minimum				1.0000E-4							
71	Maximum				0.01							
72	Mean				0.00131							
73	Geometric Mean				6.9677E-4							
74	Median				5.0000E-4							
75	Standard Deviation				0.00244							
76	Coefficient of Variation				1.867							
77												
78	Mann-Kendall Test											
79	M-K Test Value (S)				4							
80	Tabulated p-value				0.423							
81	Standard Deviation of S				19.08							
82	Standardized Value of S				0.157							
83	Approximate p-value				0.438							
84												
85	Insufficient evidence to identify a significant											
86	trend at the specified level of significance.											
87	Lead-m-62a											
88												
89	General Statistics											
90	Number of Events Reported (m)				20							
91	Number of Missing Events				5							
92	Number or Reported Events Used				15							
93	Number Values Reported (n)				20							
94	Number Values Missing				5							
95	Number Values Used				15							
96	Minimum				1.0000E-4							
97	Maximum				0.01							
98	Mean				0.00127							
99	Geometric Mean				6.5975E-4							
100	Median				5.0000E-4							

	A	B	C	D	E	F	G	H	I	J	K	L
101	Standard Deviation				0.00245							
102	Coefficient of Variation				1.926							
103												
104	Mann-Kendall Test											
105	M-K Test Value (S)				19							
106	Tabulated p-value				0.19							
107	Standard Deviation of S				16.8							
108	Standardized Value of S				1.071							
109	Approximate p-value				0.142							
110												
111	Insufficient evidence to identify a significant											
112	trend at the specified level of significance.											

	A	B	C	D	E	F	G	H	I	J	K	L
1				Mann-Kendall Trend Test Analysis								
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.14/12/2020 4:11:56 PM								
4	From File			SEDIPond_Cholla_AssessMonNov2019_NoDups.xls								
5	Full Precision			OFF								
6	Confidence Coefficient			0.95								
7	Level of Significance			0.05								
8												
9	Radium-m-56a											
10												
11	General Statistics											
12	Number of Events Reported (m)			20								
13	Number of Missing Events			3								
14	Number or Reported Events Used			17								
15	Number Values Reported (n)			20								
16	Number Values Missing			3								
17	Number Values Used			17								
18	Minimum			0.4								
19	Maximum			1.9								
20	Mean			1.047								
21	Geometric Mean			0.925								
22	Median			0.9								
23	Standard Deviation			0.517								
24	Coefficient of Variation			0.494								
25												
26	Mann-Kendall Test											
27	M-K Test Value (S)			-8								
28	Tabulated p-value			0.388								
29	Standard Deviation of S			24.14								
30	Standardized Value of S			-0.29								
31	Approximate p-value			0.386								
32												
33	Insufficient evidence to identify a significant											
34	trend at the specified level of significance.											
35	Radium-m-57a											
36												
37	General Statistics											
38	Number of Events Reported (m)			20								
39	Number of Missing Events			3								
40	Number or Reported Events Used			17								
41	Number Values Reported (n)			20								
42	Number Values Missing			3								
43	Number Values Used			17								
44	Minimum			0.4								
45	Maximum			1.5								
46	Mean			0.724								
47	Geometric Mean			0.692								
48	Median			0.7								
49	Standard Deviation			0.251								
50	Coefficient of Variation			0.347								

	A	B	C	D	E	F	G	H	I	J	K	L
51												
52	Mann-Kendall Test											
53	M-K Test Value (S)				21							
54	Tabulated p-value				0.22							
55	Standard Deviation of S				22.99							
56	Standardized Value of S				0.87							
57	Approximate p-value				0.192							
58												
59	Insufficient evidence to identify a significant											
60	trend at the specified level of significance.											
61	Radium-m-58a											
62												
63	General Statistics											
64	Number of Events Reported (m)				20							
65	Number of Missing Events				3							
66	Number or Reported Events Used				17							
67	Number Values Reported (n)				20							
68	Number Values Missing				3							
69	Number Values Used				17							
70	Minimum				0.6							
71	Maximum				2.6							
72	Mean				1.024							
73	Geometric Mean				0.908							
74	Median				0.7							
75	Standard Deviation				0.609							
76	Coefficient of Variation				0.595							
77												
78	Mann-Kendall Test											
79	M-K Test Value (S)				-41							
80	Tabulated p-value				0.054							
81	Standard Deviation of S				23.53							
82	Standardized Value of S				-1.7							
83	Approximate p-value				0.0446							
84												
85	Insufficient evidence to identify a significant											
86	trend at the specified level of significance.											
87	Radium-m-62a											
88												
89	General Statistics											
90	Number of Events Reported (m)				20							
91	Number of Missing Events				4							
92	Number or Reported Events Used				16							
93	Number Values Reported (n)				20							
94	Number Values Missing				4							
95	Number Values Used				16							
96	Minimum				0.5							
97	Maximum				2							
98	Mean				1.013							
99	Geometric Mean				0.943							
100	Median				0.9							

	A	B	C	D	E	F	G	H	I	J	K	L
101	Standard Deviation				0.401							
102	Coefficient of Variation				0.396							
103												
104	Mann-Kendall Test											
105	M-K Test Value (S)				-16							
106	Tabulated p-value				0.253							
107	Standard Deviation of S				22							
108	Standardized Value of S				-0.682							
109	Approximate p-value				0.248							
110												
111	Insufficient evidence to identify a significant											
112	trend at the specified level of significance.											

	A	B	C	D	E	F	G	H	I	J	K	L
1				Mann-Kendall Trend Test Analysis								
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.14/12/2020 4:46:15 AM								
4	From File			SEDIPond_Cholla_AssessMonNov2019_NoDups.xls								
5	Full Precision			OFF								
6	Confidence Coefficient			0.95								
7	Level of Significance			0.05								
8												
9	Antimony-m-56a											
10												
11	General Statistics											
12	Number of Events Reported (m)			20								
13	Number of Missing Events			5								
14	Number or Reported Events Used			15								
15	Number Values Reported (n)			20								
16	Number Values Missing			5								
17	Number Values Used			15								
18	Minimum			1.0000E-4								
19	Maximum			0.05								
20	Mean			0.00448								
21	Geometric Mean			0.00113								
22	Median			0.001								
23	Standard Deviation			0.0126								
24	Coefficient of Variation			2.818								
25												
26	Mann-Kendall Test											
27	M-K Test Value (S)			19								
28	Tabulated p-value			0.19								
29	Standard Deviation of S			18.52								
30	Standardized Value of S			0.972								
31	Approximate p-value			0.166								
32												
33	Insufficient evidence to identify a significant											
34	trend at the specified level of significance.											
35	Antimony-m-57a											
36												
37	General Statistics											
38	Number of Events Reported (m)			20								
39	Number of Missing Events			5								
40	Number or Reported Events Used			15								
41	Number Values Reported (n)			20								
42	Number Values Missing			5								
43	Number Values Used			15								
44	Minimum			1.0000E-4								
45	Maximum			0.05								
46	Mean			0.00455								
47	Geometric Mean			0.00118								
48	Median			0.001								
49	Standard Deviation			0.0126								
50	Coefficient of Variation			2.773								

	A	B	C	D	E	F	G	H	I	J	K	L
51												
52	Mann-Kendall Test											
53	M-K Test Value (S)				25							
54	Tabulated p-value				0.12							
55	Standard Deviation of S				19.05							
56	Standardized Value of S				1.26							
57	Approximate p-value				0.104							
58												
59	Insufficient evidence to identify a significant											
60	trend at the specified level of significance.											
61	Antimony-m-58a											
62												
63	General Statistics											
64	Number of Events Reported (m)				20							
65	Number of Missing Events				5							
66	Number or Reported Events Used				15							
67	Number Values Reported (n)				20							
68	Number Values Missing				5							
69	Number Values Used				15							
70	Minimum				1.0000E-4							
71	Maximum				0.05							
72	Mean				0.00455							
73	Geometric Mean				0.00117							
74	Median				0.001							
75	Standard Deviation				0.0126							
76	Coefficient of Variation				2.774							
77												
78	Mann-Kendall Test											
79	M-K Test Value (S)				24							
80	Tabulated p-value				0.12							
81	Standard Deviation of S				19.03							
82	Standardized Value of S				1.209							
83	Approximate p-value				0.113							
84												
85	Insufficient evidence to identify a significant											
86	trend at the specified level of significance.											
87	Antimony-m-62a											
88												
89	General Statistics											
90	Number of Events Reported (m)				20							
91	Number of Missing Events				5							
92	Number or Reported Events Used				15							
93	Number Values Reported (n)				20							
94	Number Values Missing				5							
95	Number Values Used				15							
96	Minimum				1.0000E-4							
97	Maximum				0.05							
98	Mean				0.00455							
99	Geometric Mean				0.00117							
100	Median				0.001							

	A	B	C	D	E	F	G	H	I	J	K	L
101	Standard Deviation				0.0126							
102	Coefficient of Variation				2.774							
103												
104	Mann-Kendall Test											
105	M-K Test Value (S)				24							
106	Tabulated p-value				0.12							
107	Standard Deviation of S				19.03							
108	Standardized Value of S				1.209							
109	Approximate p-value				0.113							
110												
111	Insufficient evidence to identify a significant											
112	trend at the specified level of significance.											

	A	B	C	D	E	F	G	H	I	J	K	L
1				Mann-Kendall Trend Test Analysis								
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.14/12/2020 4:22:55 PM								
4	From File			SEDIPond_Cholla_AssessMonNov2019_NoDups.xls								
5	Full Precision			OFF								
6	Confidence Coefficient			0.95								
7	Level of Significance			0.05								
8												
9	Selenium-m-56a											
10												
11	General Statistics											
12	Number of Events Reported (m)			20								
13	Number of Missing Events			5								
14	Number or Reported Events Used			15								
15	Number Values Reported (n)			20								
16	Number Values Missing			5								
17	Number Values Used			15								
18	Minimum			3.3000E-4								
19	Maximum			0.01								
20	Mean			0.00128								
21	Geometric Mean			7.1197E-4								
22	Median			5.0000E-4								
23	Standard Deviation			0.00245								
24	Coefficient of Variation			1.912								
25												
26	Mann-Kendall Test											
27	M-K Test Value (S)			26								
28	Tabulated p-value			0.101								
29	Standard Deviation of S			19.08								
30	Standardized Value of S			1.31								
31	Approximate p-value			0.095								
32												
33	Insufficient evidence to identify a significant											
34	trend at the specified level of significance.											
35	Selenium-m-57a											
36												
37	General Statistics											
38	Number of Events Reported (m)			20								
39	Number of Missing Events			5								
40	Number or Reported Events Used			15								
41	Number Values Reported (n)			20								
42	Number Values Missing			5								
43	Number Values Used			15								
44	Minimum			2.9000E-4								
45	Maximum			0.01								
46	Mean			0.00131								
47	Geometric Mean			7.3251E-4								
48	Median			5.0000E-4								
49	Standard Deviation			0.00244								
50	Coefficient of Variation			1.869								

	A	B	C	D	E	F	G	H	I	J	K	L
51												
52	Mann-Kendall Test											
53	M-K Test Value (S)				30							
54	Tabulated p-value				0.07							
55	Standard Deviation of S				18.49							
56	Standardized Value of S				1.568							
57	Approximate p-value				0.0584							
58												
59	Insufficient evidence to identify a significant											
60	trend at the specified level of significance.											
61	Selenium-m-58a											
62												
63	General Statistics											
64	Number of Events Reported (m)				20							
65	Number of Missing Events				5							
66	Number or Reported Events Used				15							
67	Number Values Reported (n)				20							
68	Number Values Missing				5							
69	Number Values Used				15							
70	Minimum				2.4000E-4							
71	Maximum				0.01							
72	Mean				0.00129							
73	Geometric Mean				7.0796E-4							
74	Median				5.0000E-4							
75	Standard Deviation				0.00245							
76	Coefficient of Variation				1.897							
77												
78	Mann-Kendall Test											
79	M-K Test Value (S)				20							
80	Tabulated p-value				0.164							
81	Standard Deviation of S				17.76							
82	Standardized Value of S				1.07							
83	Approximate p-value				0.142							
84												
85	Insufficient evidence to identify a significant											
86	trend at the specified level of significance.											
87	Selenium-m-62a											
88												
89	General Statistics											
90	Number of Events Reported (m)				20							
91	Number of Missing Events				5							
92	Number or Reported Events Used				15							
93	Number Values Reported (n)				20							
94	Number Values Missing				5							
95	Number Values Used				15							
96	Minimum				5.0000E-4							
97	Maximum				0.01							
98	Mean				0.00133							
99	Geometric Mean				7.7448E-4							
100	Median				5.0000E-4							

	A	B	C	D	E	F	G	H	I	J	K	L
101	Standard Deviation				0.00243							
102	Coefficient of Variation				1.824							
103												
104	Mann-Kendall Test											
105	M-K Test Value (S)				2							
106	Tabulated p-value				0.461							
107	Standard Deviation of S				17.76							
108	Standardized Value of S				0.0563							
109	Approximate p-value				0.478							
110												
111	Insufficient evidence to identify a significant											
112	trend at the specified level of significance.											

	A	B	C	D	E	F	G	H	I	J	K	L
1				Mann-Kendall Trend Test Analysis								
2	User Selected Options											
3	Date/Time of Computation			ProUCL 5.14/12/2020 4:28:22 PM								
4	From File			SEDIPond_Cholla_AssessMonNov2019_NoDups.xls								
5	Full Precision			OFF								
6	Confidence Coefficient			0.95								
7	Level of Significance			0.05								
8												
9	Thallium-m-56a											
10												
11	General Statistics											
12	Number of Events Reported (m)			20								
13	Number of Missing Events			1								
14	Number or Reported Events Used			19								
15	Number Values Reported (n)			20								
16	Number Values Missing			1								
17	Number Values Used			19								
18	Minimum			1.0000E-4								
19	Maximum			0.002								
20	Mean			2.2211E-4								
21	Geometric Mean			1.3188E-4								
22	Median			1.0000E-4								
23	Standard Deviation			4.3634E-4								
24	Coefficient of Variation			1.965								
25												
26	Mann-Kendall Test											
27	M-K Test Value (S)			-2								
28	Tabulated p-value			0.473								
29	Standard Deviation of S			20.22								
30	Standardized Value of S			-0.0495								
31	Approximate p-value			0.48								
32												
33	Insufficient evidence to identify a significant											
34	trend at the specified level of significance.											
35	Thallium-m-57a											
36												
37	General Statistics											
38	Number of Events Reported (m)			20								
39	Number of Missing Events			1								
40	Number or Reported Events Used			19								
41	Number Values Reported (n)			20								
42	Number Values Missing			1								
43	Number Values Used			19								
44	Minimum			1.0000E-4								
45	Maximum			0.002								
46	Mean			2.2632E-4								
47	Geometric Mean			1.3547E-4								
48	Median			1.0000E-4								
49	Standard Deviation			4.3569E-4								
50	Coefficient of Variation			1.925								

	A	B	C	D	E	F	G	H	I	J	K	L
51												
52	Mann-Kendall Test											
53	M-K Test Value (S)				-1							
54	Tabulated p-value				0.5							
55	Standard Deviation of S				20.19							
56	Standardized Value of S				0							
57	Approximate p-value				0.5							
58												
59	Insufficient evidence to identify a significant											
60	trend at the specified level of significance.											
61	Thallium-m-58a											
62												
63	General Statistics											
64	Number of Events Reported (m)				20							
65	Number of Missing Events				1							
66	Number or Reported Events Used				19							
67	Number Values Reported (n)				20							
68	Number Values Missing				1							
69	Number Values Used				19							
70	Minimum				1.0000E-4							
71	Maximum				0.002							
72	Mean				2.2632E-4							
73	Geometric Mean				1.3547E-4							
74	Median				1.0000E-4							
75	Standard Deviation				4.3569E-4							
76	Coefficient of Variation				1.925							
77												
78	Mann-Kendall Test											
79	M-K Test Value (S)				-1							
80	Tabulated p-value				0.5							
81	Standard Deviation of S				20.19							
82	Standardized Value of S				0							
83	Approximate p-value				0.5							
84												
85	Insufficient evidence to identify a significant											
86	trend at the specified level of significance.											
87	Thallium-m-62a											
88												
89	General Statistics											
90	Number of Events Reported (m)				20							
91	Number of Missing Events				2							
92	Number or Reported Events Used				18							
93	Number Values Reported (n)				20							
94	Number Values Missing				2							
95	Number Values Used				18							
96	Minimum				1.0000E-4							
97	Maximum				5.0000E-4							
98	Mean				1.5000E-4							
99	Geometric Mean				1.2756E-4							
100	Median				1.0000E-4							

	A	B	C	D	E	F	G	H	I	J	K	L
101	Standard Deviation				1.1504E-4							
102	Coefficient of Variation				0.767							
103												
104	Mann-Kendall Test											
105	M-K Test Value (S)				3							
106	Tabulated p-value				0.47							
107	Standard Deviation of S				19.04							
108	Standardized Value of S				0.105							
109	Approximate p-value				0.458							
110												
111	Insufficient evidence to identify a significant											
112	trend at the specified level of significance.											

APPENDIX H

**WOOD TECHNICAL MEMORANDUM DOCUMENTING THE STATISTICAL ANALYSIS
OF APPENDIX IV CONSTITUENT DATA COLLECTED FROM THE SEDI THROUGH
APRIL 2020**



Technical Memorandum

To: Arizona Public Service Company **File No:** 14-2018-2040

From: Dane Andersen, GIT **Reviewed by:** Maren Henley, PE
Tim Glover

Date: October 13, 2020

**Subject: CCR GROUNDWATER ASSESSMENT MONITORING
STATISTICAL EVALUATION OF APPENDIX IV CONSTITUENT DATA
COLLECTED FROM THE SEDIMENTATION POND THROUGH APRIL 2020
Arizona Public Service Cholla Power Plant – Navajo County, Arizona**

1.0 INTRODUCTION

This Technical Memorandum (Tech Memo) presents the results of a statistical evaluation of groundwater monitoring data collected from monitoring wells downgradient of the Sedimentation Pond (SEDI) located at the Arizona Public Service Company Cholla Power Plant (Site) in Navajo County, Arizona. The statistical evaluation was performed by Wood Environment and Infrastructure Solutions, Inc. (Wood) subcontractor, Formation Environmental, LLC (Formation Environmental) pursuant to Coal Combustion Residuals (CCR) Rule requirements for groundwater monitoring and corrective action detailed in 40 Code of Federal Regulations Sections 257.90 through 257.98 (Federal Register, 2018).

The SEDI is a Site CCR unit that is currently in the assessment monitoring program. The CCR Rule requires the routine evaluation of Appendix IV constituent data collected from SEDI downgradient wells to determine if an Appendix IV constituent exceeds its respective groundwater protection standard (GWPS) at a statistically significant level. The statistical evaluation documented herein incorporates Appendix IV constituent data collected from SEDI downgradient wells M-56A, M-57A, and M-58A through April 2020 to determine if a GWPS has been exceeded.

2.0 STATISTICAL EVALUATION RESULTS

Attachment A presents the statistical evaluation conducted by Formation Environmental. The results of the evaluation are summarized as follows:

- There are currently no GWPS exceedances for Appendix IV constituents at the SEDI downgradient wells.
- A statistically significant decreasing temporal trend is evident for barium and molybdenum at M-56A; arsenic, barium, and cobalt at M-57A; and cobalt at M-58A. A statistically significant increasing temporal trend is evident for chromium at M-56A.

3.0 RECOMMENDATIONS

Based on the results of the statistical evaluation presented in Attachment A and pursuant to the CCR Rule, continuation of assessment monitoring at a semiannual frequency for Appendix IV constituents at the SEDI is warranted because there are currently no GWPS exceedances. As noted in Attachment A, it is recommended that to the extent practicable, the analytical laboratory achieve lithium reporting limits below

the GWPS for lithium (0.2 milligrams per liter) and maintain a constant reporting limit over time for all SEDI monitoring wells. Wood also recommends trend testing after each monitoring event and updates to the statistical method selection and BTVs after 1-2 years of future sampling events.

4.0 REFERENCES

Federal Register, 2018. *40 Code of Federal Regulations Part 257 – Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule promulgated April 17, 2015 with Amendments to the National Minimum Criteria (Phase One, Part One) effective August 29, 2018.*

wood.

ATTACHMENT A



Technical Memorandum

To: Maren Henley, PE
Dane Andersen, GIT
Wood Environment & Infrastructure Solutions, Inc.

From: Carla Landrum, PhD
Formation Environmental, LLC

Date: October 5, 2020

Subject: **CCR Groundwater Assessment Monitoring
Statistical Evaluation of April 2020 & Preceding Sedimentation Pond Data
Arizona Public Service Cholla Power Plant– Navajo County, Arizona**

1.0 INTRODUCTION

This Technical Memorandum (Tech Memo) documents the routine statistical evaluation of assessment monitoring groundwater data collected through April 2020 from the Sedimentation Pond (SEDI) located at the Arizona Public Service (APS) Cholla Power Plant (Cholla) in Navajo County, Arizona. This routine statistical evaluation is completed by Formation Environmental, LLC in accordance with the Statistical Data Analysis Work Plan for the Cholla Power Plant and the Coal Combustion Residuals (CCR) Rule (Federal Register, 2018; Wood Environment & Infrastructure Solutions, Inc. [Wood], 2018).

2.0 STATISTICAL EVALUATION APPROACH

The subject analysis was completed using ProUCL software (United States Environmental Protection Agency, 2015). Appendix A contains the ProUCL data upload table Wood Environment & Infrastructure Solutions, Inc. put forth to complete the subject analysis, which includes SEDI compliance well data collected from November 2015 through April 2020. The Appendix IV analytes are listed by name as column headers in the ProUCL data upload table. Each analyte has a corresponding data column (indicated with a "D_" prefix) that indicates if the analyte was detected or not at a concentration that exceeds the analytical reporting limit, where detectable concentrations are symbolized by a "1" and non-detectable concentrations are symbolized by a "0". The non-detectable concentration corresponds to the analyte's reporting limit value for the corresponding sample date. Field and split sample duplicates were retracted from the analysis.

Exploratory Data Analysis (EDA) is a precursor assessment of overall data adequacy to complete the subject analysis. The EDA methods include: temporal trend analysis for constituents with a <50% non-detect frequency, goodness of fit tests, outlier tests and generating box and whisker plots.

3.0 RESULTS

Appendix B presents the raw outputs from the precursor EDA to complete forthcoming statistical comparisons.

Table 1 presents the concentrations of Appendix IV constituents in samples collected from SEDI background (i.e., M-62A) and compliance monitoring wells (i.e., M-56A, M-57A and M-58A) in April 2020. The April 2020 sampling event constitutes the fifth sampling round following the February 2019, April 2019, August 2019 and November 2019 sampling events. Several compliance wells show non-detectable concentrations that exceed their respective BTVs; in these instances, the comparison between sample concentration and its respective BTV is inadequate.

Table 2 summarizes the GWPS for each Appendix IV constituent (Wood, 2019). GWPS selection is documented in the January 2019 Tech Memo and constitutes either the statistically calculated Background Threshold Value (BTV) (Table 1), the US EPA's promulgated Maximum Contaminant Level (MCL) for Drinking Water, or the risk-based alternative GWPS identified for constituents without MCLs, whichever value is higher. For all Appendix IV constituents except antimony and lithium, the US EPA's promulgated MCL, or the risk-based alternative GWPS, is higher than the BTVs (Wood, 2019).

Table 2 summarizes: 1) compliance well comparisons to their respective GWPS for Appendix IV constituents, 2) which compliance wells exhibit statistically significant temporal trends, and 3) the type of lower confidence limit (LCL) test applied after incorporating the April 2020 sampling event for each monitoring well and Appendix IV constituent pair. The addition of data to the sample population over time can cause the type of statistical test in Table 2 to change from previous evaluations.

Several compliance monitoring wells exhibit statistically significant ($p < 0.05$) temporal trends with no exceedance declaration, including statistically significant ($p < 0.05$) decreasing temporal trends in: M-56A (barium and molybdenum) and M-57A (arsenic, barium and cobalt) in addition to a statistically significant ($p < 0.05$) increasing temporal trend in M-56A (chromium).

4.0 CONCLUSIONS

This statistical analysis indicates there is insufficient evidence to declare a GWPS exceedance for SEDI monitoring wells M-56A, M-57A, and M-58A at the current time.

Formation Environmental, LLC puts forth the following recommendations to Wood for completing future data and statistical evaluations:

- On the basis that one or more Appendix III and IV single-sample constituent concentrations exceed current BTVs (Table 1) and the statistical assessment documented herein indicates that Appendix IV constituent concentrations do not exceed applicable GWPSs (Table 2), Formation Environmental, LLC recommends continuing Assessment Monitoring at the SEDI in accordance with 40 Code of Federal Regulations Section 257.95(f) (Federal Register, 2018).
- Future laboratory reporting limits should be equal to, or below, the respective BTVs in effort to make sample concentration comparisons in Table 1 meaningful (Wood, 2018).

5.0 REFERENCES

Federal Register, 2018. *40 Code of Federal Regulations Part 257 – Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule promulgated April*

17, 2015 with Amendments to the National Minimum Criteria (Phase One, Part One) effective August 29, 2018.

US Environmental Protection Agency (US EPA), 2015. ProUCL (Version 5.1.1) *User Guide, Statistical Software for Environmental Applications for Data Sets with and without Nondetect Observations*. EPA/600/R-07/041. Washington D.C. October 2015.

Wood, 2019. *CCR Groundwater Assessment Monitoring Statistical Analysis and Results for the Sedimentation Pond*. Arizona Public Service Cholla Power Plant, Navajo County, Arizona. Technical Memorandum dated January 14, 2019.

Wood, 2018. *Statistical Data Analysis Work Plan*. Coal Combustion Residual Rule Groundwater Monitoring System Compliance, Cholla Power Plant, Navajo County, Arizona. Prepared for Arizona Public Service. October 2018.

ATTACHMENTS

Table 1 – Assessment Monitoring Data Collected from the Sedimentation Pond

Table 2 – GWPS Comparison Table for Data Collected from the Sedimentation Pond through April 2020

Appendix A – ProUCL Data Upload Table

Appendix B – ProUCL EDA Output Files

TABLES

Table 1
Assessment Monitoring Data Collected from the Sedimentation Pond

				Analyte Concentration by Location and Date									
				M-56A (Compliance)					M-57A (Compliance)				
Constituent	Analyte	Units	BTV	2/15/19	4/18/19	8/9/19	11/25/19	4/16/20	2/15/19	4/17/19	8/9/20	11/25/19	4/16/20
Appendix III	Boron	mg/L	0.23	0.30	---	---	---	---	0.63	---	---	---	---
Appendix III	Calcium	mg/L	600	300	---	---	---	---	490	---	---	---	---
Appendix III	Chloride	mg/L	3700	2000	---	---	---	---	2100	---	---	---	---
Appendix III	pH	SU	7.5	7.3	---	---	---	---	7.1	---	---	---	---
Appendix III	Sulfate	mg/L	630	850	---	---	---	---	1300	---	---	---	---
Appendix III	TDS	mg/L	7800	---	---	---	---	---	---	---	---	---	---
Appendix IV	Antimony	mg/L	0.05	NA	<0.0010	NA	NA	<0.005	NA	NA	NA	NA	<0.005
Appendix IV	Arsenic	mg/L	0.004	0.0082	0.0011	0.0085	0.0088	<0.0025	0.0017	0.0026	0.0019	0.021	0.0037
Appendix IV	Barium	mg/L	0.08	0.067	0.055	0.078	0.063	0.052	0.041	0.041	0.039	0.047	0.042
Appendix IV	Beryllium	mg/L	0.001	---	<0.0010	NA	---	<0.001	---	<0.0010	NA	---	<0.001
Appendix IV	Cadmium	mg/L	0.002	---	<0.00010	NA	---	<0.0005	---	<0.00010	NA	---	<0.0005
Appendix IV	Chromium	mg/L	0.004	0.0052	0.076	0.023	0.0086	0.034	0.0074	0.045	0.038	0.0038	<0.005*
Appendix IV	Cobalt	mg/L	0.002	0.00073	0.0013	0.0012	0.00064	<0.0025*	0.0049	0.005	0.004	0.0044	0.0028
Appendix IV	Fluoride	mg/L	0.8	<0.40	<0.40	<0.8	<0.4	<0.8	<0.4	0.53	<0.8	<0.4	<0.8
Appendix IV	Lead	mg/L	0.01	---	<0.00050	NA	---	<0.0025	---	<0.00050	NA	---	<0.0025
Appendix IV	Lithium	mg/L	0.2	---	<0.20	<0.20	---	<1*	---	<0.20	<0.2	---	<1*
Appendix IV	Mercury	mg/L	0.0002	---	<0.00020	NA	---	<0.0002	---	<0.00020	NA	---	<0.0002
Appendix IV	Molybdenum	mg/L	0.011	0.0074	0.014	0.011	0.0087	0.012	0.0029	0.0078	0.0068	0.012	<0.0025
Appendix IV	Total Radium	pCi/L	1.1	0.9	NA	0.6	---	NA	<0.7	NA	<0.7	---	NA
Appendix IV	Selenium	mg/L	0.01	---	0.00062	NA	---	<0.0025	---	0.00069	NA	---	<0.0025
Appendix IV	Thallium	mg/L	0.0004	<0.00010	<0.00010	<0.0001	<0.0001	<0.0005*	<0.00010	<0.00010	<0.0001	<0.0001	<0.0005*

Notes:

Constituent concentrations that exceed GWPSs are presented in bolded text.

*The non-detectable sample concentration exceeds the corresponding BTV.

Acronyms:

--- = not applicable or evaluated

BTV = Background Threshold Value

mg/L = milligrams per liter

NA = not available at the time of assessment

NS = no standard

pCi/L = picocuries per liter

SU = standard units

SEDI = Sedimentation Pond

TDS = total dissolved solids

< = sample concentration below the reporting limit value

Table 1
Assessment Monitoring Data Collected from the Sedimentation Pond

				Analyte Concentration by Location and Date									
				M-58A (Compliance)					M-62A (Background)				
Constituent	Analyte	Units	BTV	2/15/19	4/18/19	8/9/19	11/25/19	4/16/20	2/15/19	4/18/19	8/9/19	11/25/19	4/16/20
Appendix III	Boron	mg/L	0.23	0.23	---	---	---	---	0.23	---	---	---	---
Appendix III	Calcium	mg/L	600	310	---	---	---	---	490	---	---	---	---
Appendix III	Chloride	mg/L	3700	2100	---	---	---	---	2900	---	---	---	---
Appendix III	pH	SU	7.5	7.5	---	---	---	---	7.3	---	---	---	---
Appendix III	Sulfate	mg/L	630	540	---	---	---	---	560	---	---	---	---
Appendix III	TDS	mg/L	7800	---	---	---	---	---	---	---	---	---	---
Appendix IV	Antimony	mg/L	0.05	NA	<0.0010	NA	NA	<0.005	NA	<0.0010	NA	NA	<0.005
Appendix IV	Arsenic	mg/L	0.004	0.0043	0.0039	0.0038	0.0046	0.0042	0.003	0.0033	0.0031	0.0048	0.0043
Appendix IV	Barium	mg/L	0.08	0.063	0.059	0.066	0.079	0.069	0.068	0.068	0.067	0.15	0.078
Appendix IV	Beryllium	mg/L	0.001	---	<0.0010	NA	---	<0.001	---	<0.0010	NA	---	<0.001
Appendix IV	Cadmium	mg/L	0.002	---	<0.00010	NA	---	<0.0005	---	<0.00010	NA	---	<0.0005
Appendix IV	Chromium	mg/L	0.004	<0.0010	<0.0010	<0.001	<0.001	<0.005*	<0.0010	<0.0010	0.0037	0.0044	0.0053
Appendix IV	Cobalt	mg/L	0.002	<0.00050	<0.00050	<0.0005	<0.005	<0.0025*	<0.00050	<0.00050	<0.0005	0.0012	<0.0025*
Appendix IV	Fluoride	mg/L	0.8	<0.40	<0.40	<0.8	<0.4	<0.8	<0.40	0.47	<0.4	<0.4	<0.8
Appendix IV	Lead	mg/L	0.01	---	<0.00050	NA	---	<0.0025	---	<0.00050	NA	---	<0.0025
Appendix IV	Lithium	mg/L	0.2	---	<0.20	<0.2	---	<1*	---	<0.20	<0.2	---	<1*
Appendix IV	Mercury	mg/L	0.0002	---	<0.00020	NA	---	<0.0002	---	<0.00020	NA	---	<0.0002
Appendix IV	Molybdenum	mg/L	0.011	0.0018	0.0018	0.0018	0.0018	<0.0025	0.0024	0.0026	0.0028	0.0091	0.004
Appendix IV	Total Radium	pCi/L	1.1	<0.7	NA	<0.7	---	NA	<0.7	NA	0.8	---	NA
Appendix IV	Selenium	mg/L	0.01	---	<0.00050	NA	---	<0.0025	---	<0.00050	NA	---	<0.0025
Appendix IV	Thallium	mg/L	0.0004	<0.00010	<0.00010	<0.0001	<0.0001	<0.0005*	<0.00010	<0.00010	<0.0001	0.00016	<0.0005*

Notes:

Constituent concentrations that exceed GWPSs are presented in bolded text.

*The non-detectable sample concentration exceeds the corresponding BTV.

Acronyms:

--- = not applicable or evaluated
BTV = Background Threshold Value
mg/L = milligrams per liter
NA = not available at the time of assessment
NS = no standard

pCi/L = picocuries per liter
SU = standard units
SEDI = Sedimentation Pond
TDS = total dissolved solids
< = sample concentration below the reporting limit value

Table 2
GWPS Comparison Table for Data Collected from the Sedimentation Pond through April 2020

			Lower Confidence Limit (LCL) Results - Appendix IV Constituents						
Analyte	Units	GWPS	M-56A		M-57A		M-58A		Exceedance
			LCL	Recent Test	LCL	Recent Test	LCL	Recent Test	
Antimony	mg/L	0.05	0.0010	NP-LCL	0.0020	NP-LCL	0.0020	NP-LCL	No
Arsenic	mg/L	0.01	0.0019	NP-LCL	0.0019	P-LCLT	0.0036	P-LCL	No
Barium	mg/L	2	0.0529	P-LCLT	0.0283	NP-LCL	0.0616	P-LCL	No
Beryllium	mg/L	0.004	0.0010	NP-LCL	0.0010	NP-LCL	0.0010	NP-LCL	No
Cadmium	mg/L	0.005	0.0001	NP-LCL	0.0001	NP-LCL	0.0001	NP-LCL	No
Chromium	mg/L	0.1	0.0089	P-LCLT	0.0077	P-LCL	0.0018	NP-LCL	No
Cobalt	mg/L	0.006	0.0006	P-LCL	0.0033	P-LCLT	0.0010	NP-LCL	No
Fluoride	mg/L	4	0.4300	NP-LCL	0.4000	NP-LCL	0.4000	NP-LCL	No
Lead	mg/L	0.015	0.0005	NP-LCL	0.0009	NP-LCL	0.0008	NP-LCL	No
Lithium	mg/L	0.2	0.2000	NP-LCL	0.2000	NP-LCL	0.2000	NP-LCL	No
Mercury	mg/L	0.002	0.0002	NP-LCL	0.0002	NP-LCL	0.0002	NP-LCL	No
Molybdenum	mg/L	0.1	0.0059	P-LCLT	0.0035	P-LCL	0.0022	NP-LCL	No
Total Radium	pCi/L	5	0.8290	P-LCL	0.7000	NP-LCL	0.9000	NP-LCL	No
Selenium	mg/L	0.05	0.0006	NP-LCL	0.0006	NP-LCL	0.0005	NP-LCL	No
Thallium	mg/L	0.002	0.0001	NP-LCL	0.0002	NP-LCL	0.0002	NP-LCL	No

Notes:

Statistically significant
temporal trend (p<0.05)

Acronyms:

GWPS = Groundwater Protection Standard
mg/L = milligrams per liter
pCi/L = picocuries per liter

P-LCL = Parametric Lower Confidence Limit
NP-LCL = Non-Parametric Lower Confidence Limit
P-LCLT = Parametric Lower Confidence Limit with a Trend

APPENDIX A

PROUCL DATA UPLOAD TABLE

Appendix A
ProUCL Data

StationName QC_SampleID SampDate			NumDate	Antimony	D_Antimony	Arsenic	D_Arsenic	Barium	D_Barium	Beryllium	D_Beryllium	Cadmium	D_Cadmium	Chromium	D_Chromium	Cobalt	D_Cobalt	Fluoride
M-56A	7873_O	11/30/2015	42338.51	0.0025	0	0.0019	1	0.081	1	0.001	0	0.0001	0	0.00051	1	0.0012	1	0.4
M-56A	CH-M-56A-0316_O	3/8/2016	42437.57	0.05	0	0.01	0	0.084	1	0.001	0	0.002	0	0.01	0	0.002	1	0.43
M-56A	CH-CCR-M56A-05102016_O	5/10/2016	42500.59	0.0001	0	0.00093	1	0.075	1	0.001	0	0.0001	0	0.0005	0	0.0013	1	0.42
M-56A	CH-CCR-M56A-816_O	8/29/2016	42611.38	0.00013	1	0.00082	1	0.082	1	0.001	0	0.0001	0	0.0005	0	0.0013	1	0.46
M-56A	CH-CCR-M56A-916_O	9/21/2016	42634.45	0.0005	0	0.00083	1	0.076	1	0.001	0	0.0001	0	0.0012	1	0.0012	1	0.4
M-56A	CH-CCR-M56A-217_O	2/20/2017	42786.47	0.001	0	0.00068	1	0.071	1	0.001	0	0.0001	0	0.0093	1	0.00077	1	0.4
M-56A	CH-CCR-M56A-41317_O	4/13/2017	42838.32	0.001	0	0.00076	1	0.07	1	0.001	0	0.0001	0	0.0091	1	0.00065	1	0.4
M-56A	CH-CCR-M56A-42517_O	4/25/2017	42850.38	0.001	0	0.00075	1	0.086	1	0.001	0	0.0001	0	0.0067	1	0.00061	1	0.8
M-56A	CH-CCR-M56A-51817_O	5/18/2017	42873.39	0.001	0	0.0006	1	0.062	1	0.001	0	0.0001	0	0.0063	1	0.0005	0	0.4
M-56A	CH-CCR-M56A-52517_O	5/25/2017	42880.43	0.001	0	0.0007	1	0.073	1	0.001	0	0.0001	0	0.02	1	0.00075	1	0.4
M-56A	CH-CCR-M56A-70117_O	7/1/2017	42917.61	0.001	0	0.00065	1	0.068	1	0.001	0	0.0001	0	0.0034	1	0.0005	0	0.41
M-56A	CH-CCR-M56A-72617_O	7/26/2017	42942.61	0.002	0	0.001	0	0.066	1	0.001	0	0.0002	0	0.0028	1	0.001	0	0.4
M-56A	CH-CCR-M56A-90817_O	9/8/2017	42986.36	0.004	0	0.002	0	0.07	1	0.001	0	0.0004	0	0.004	0	0.002	0	0.47
M-56A	CH-CCR-M56A-120817_O	12/8/2017	43077.47	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.49
M-56A	CH-CCR-M-56A-52118_O	5/21/2018	43241.50	0.001	0	0.00081	1	0.061	1	0.001	0	0.0001	0	0.0046	1	0.0005	0	0.4
M-56A	CH-CCR-M56A-082818_O	8/28/2018	43340.59	NA	NA	0.0013	1	0.065	1	NA	NA	NA	NA	0.0042	1	0.0005	0	NA
M-56A	CH-CCR-M56A-21519	2/15/2019	43511.93	NA	NA	0.0082	1	0.067	1	NA	NA	NA	NA	0.0052	1	0.00073	1	0.4
M-56A	CH-CCR-M56A-41819	4/18/2019	43573.00	0.001	0	0.0011	1	0.055	1	0.001	0	0.0001	0	0.076	1	0.0013	1	0.4
M-56A	CH-CCR-M56A-8919	8/9/2019	43686.00	NA	NA	0.0085	1	0.078	1	NA	NA	NA	NA	0.023	1	0.0012	1	0.8
M-56A	CH-CCR-M56A-112519	11/25/2019	43794.47	NA	NA	0.0088	1	0.063	1	NA	NA	NA	NA	0.0086	1	0.00064	1	0.4
M-56A	CH-CCR-M56-0420	4/16/2020	43794.53	0.00500	0	0.00250	0	0.05200	1	0.00100	0	0.00050	0	0.03400	1	0.00250	0	0.80000
M-57A	7874_O	11/30/2015	42338.55	0.0025	0	0.0048	1	0.072	1	0.001	0	0.0001	0	0.00074	1	0.0077	1	0.4
M-57A	CH-M-57A-0316_O	3/8/2016	42437.61	0.05	0	0.0064	1	0.063	1	0.001	0	0.002	0	0.01	0	0.0082	1	0.4
M-57A	CH-CCR-M57A-05112016_O	5/11/2016	42501.37	0.0001	0	0.0027	1	0.047	1	0.001	0	0.0001	0	0.0005	0	0.0065	1	0.4
M-57A	CH-CCR-M57A-816_O	8/25/2016	42607.56	0.00012	1	0.0042	1	0.055	1	0.001	0	0.0001	0	0.00066	1	0.0078	1	0.4
M-57A	CH-CCR-M57A-916_O	9/21/2016	42634.58	0.0005	0	0.0019	1	0.051	1	0.001	0	0.0001	0	0.016	1	0.0067	1	0.4
M-57A	CH-CCR-M57A-217_O	2/20/2017	42786.44	0.001	0	0.0051	1	0.041	1	0.001	0	0.0001	0	0.042	1	0.0086	1	0.4
M-57A	CH-CCR-M57A-41217_O	4/12/2017	42837.77	0.001	0	0.0042	1	0.042	1	0.001	0	0.0001	0	0.031	1	0.0087	1	0.4
M-57A	CH-CCR-M57A-42517_O	4/25/2017	42850.36	0.001	0	0.0039	1	0.042	1	0.001	0	0.0001	0	0.019	1	0.0077	1	0.4
M-57A	CH-CCR-M57A-51817_O	5/18/2017	42873.42	0.001	0	0.0098	1	0.038	1	0.001	0	0.0001	0	0.024	1	0.0076	1	0.4
M-57A	CH-CCR-M57A-52517_O	5/25/2017	42880.35	0.001	0	0.0066	1	0.044	1	0.001	0	0.0001	0	0.035	1	0.0083	1	0.4
M-57A	CH-CCR-M57A-70117_O	7/1/2017	42917.59	0.001	0	0.0038	1	0.043	1	0.001	0	0.0001	0	0.012	1	0.0075	1	0.42
M-57A	CH-CCR-M57A-72617_O	7/26/2017	42942.58	0.002	0	0.0027	1	0.042	1	0.001	0	0.0002	0	0.028	1	0.0088	1	0.4
M-57A	CH-CCR-M57A-90817_O	9/8/2017	42986.33	0.004	0	0.0027	1	0.045	1	0.001	0	0.0004	0	0.015	1	0.0082	1	0.4
M-57A	CH-CCR-M57A-120817_O	12/8/2017	43077.45	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.4
M-57A	CH-CCR-M-57A-52118_O	5/21/2018	43241.52	0.002	0	0.0022	1	0.043	1	0.001	0	0.0002	0	0.0023	1	0.0058	1	0.4
M-57A	CH-CCR-M57A-082818_O	8/28/2018	43340.55	NA	NA	0.0021	1	0.045	1	NA	NA	NA	NA	0.0067	1	0.0057	1	NA
M-57A	CH-CCR-M57A-21519	2/15/2019	43511.90	NA	NA	0.0017	1	0.041	1	NA	NA	NA	NA	0.0074	1	0.0049	1	0.4
M-57A	CH-CCR-M57A-41719	4/17/2019	43572.64	0.001	0	0.0026	1	0.041	1	0.001	0	0.0001	0	0.045	1	0.005	1	0.53
M-57A	CH-CCR-M57A-8919	8/9/2019	43686.00	NA	NA	0.0019	1	0.039	1	NA	NA	NA	NA	0.038	1	0.004	1	0.8
M-57A	CH-CCR-M57A-112519	11/25/2019	43794.45	NA	NA	0.021	1	0.047	1	NA	NA	NA	NA	0.0038	1	0.0044	1	0.4
M-57A	CH-CCR-M57-0420	4/16/2020	43794.53	0.00500	0	0.00370	1	0.04200	1	0.00100	0	0.00050	0	0.00500	0	0.00280	1	0.80000
M-58A	7876_O	11/30/2015	42338.60	0.0025	0	0.0032	1	0.1	1	0.001	0	0.0001	0	0.0005	0	0.0011	1	0.43
M-58A	CH-M-58A-0316_O	3/8/2016	42437.62	0.05	0	0.01	0	0.081	1	0.001	0	0.002	0	0.01	0	0.01	0	0.4
M-58A	CH-CCR-M58A-05112016_O	5/11/2016	42501.43	0.0001	0	0.0025	1	0.055	1	0.001	0	0.0001	0	0.0005	0	0.00051	1	0.4
M-58A	CH-CCR-M58A-816_O	8/25/2016	42607.59	0.0001	0	0.0045	1	0.097	1	0.001	0	0.0001	0	0.00097	1	0.00079	1	0.4
M-58A	CH-CCR-M58A-916_O	9/21/2016	42634.55	0.0005	0	0.0039	1	0.076	1	0.001	0	0.0001	0	0.0018	1	0.00057	1	0.4
M-58A	CH-CCR-M58A-217_O	2/20/2017	42786.41	0.001	0	0.0027	1	0.064	1	0.001	0	0.0001	0	0.0033	1	0.00097	1	0.4
M-58A	CH-CCR-M58A-41217_O	4/12/2017	42837.74	0.001	0	0.0037	1	0.048	1	0.001	0	0.0001	0	0.00091	1	0.0005	0	0.4
M-58A	CH-CCR-M58A-42517_O	4/25/2017	42850.34	0.001	0	0.004	1	0.049	1	0.001	0	0.0001	0	0.001	1	0.0005	0	0.8

Appendix A
ProUCL Data

StationName QC_SampleID SampDate			Total D_Total															
			NumDate	D_Fluoride	Lead	D_Lead	Lithium	D_Lithium	Mercury	D_Mercury	Molybdenum	D_Molybdenum	Radium	Radium	Selenium	D_Selenium	Thallium	D_Thallium
M-56A	7873_O	11/30/2015	42338.51	0	0.0005	0	0.2	0	0.0002	0	0.0096	1	0.9	0	0.00033	1	0.0001	0
M-56A	CH-M-56A-0316_O	3/8/2016	42437.57	1	0.01	0	0.2	0	0.0002	0	0.029	1	0.4	0	0.01	0	0.002	0
M-56A	CH-CCR-M56A-05102016_O	5/10/2016	42500.59	1	0.0005	0	0.2	0	0.0002	0	0.023	1	0.6	1	0.0005	0	0.0001	0
M-56A	CH-CCR-M56A-816_O	8/29/2016	42611.38	1	0.0005	0	0.2	0	0.0002	0	0.021	1	1.6	1	0.0005	0	0.0001	0
M-56A	CH-CCR-M56A-916_O	9/21/2016	42634.45	1	0.0001	0	0.2	0	0.0002	0	0.016	1	0.6	1	0.0006	0	0.0001	0
M-56A	CH-CCR-M56A-217_O	2/20/2017	42786.47	1	0.0005	0	0.2	0	0.0002	0	0.013	1	1.8	1	0.0005	0	0.0001	0
M-56A	CH-CCR-M56A-41317_O	4/13/2017	42838.32	0	0.0005	0	0.2	0	0.0002	0	0.011	1	1.2	1	0.0005	0	0.0001	0
M-56A	CH-CCR-M56A-42517_O	4/25/2017	42850.38	0	0.0005	0	0.2	0	0.0002	0	0.013	1	1.9	1	0.00056	1	0.0001	0
M-56A	CH-CCR-M56A-51817_O	5/18/2017	42873.39	0	0.0005	0	0.2	0	0.0002	0	0.0095	1	1.2	0	0.0005	0	0.0001	0
M-56A	CH-CCR-M56A-52517_O	5/25/2017	42880.43	0	0.0005	0	0.2	0	0.0002	0	0.011	1	1.5	1	0.00057	1	0.0001	0
M-56A	CH-CCR-M56A-70117_O	7/1/2017	42917.61	1	0.0005	0	0.2	0	0.0002	0	0.0098	1	0.7	0	0.0005	0	0.0001	0
M-56A	CH-CCR-M56A-72617_O	7/26/2017	42942.61	0	0.001	0	0.2	0	0.0002	0	0.009	1	1.7	1	0.001	0	0.0002	0
M-56A	CH-CCR-M56A-90817_O	9/8/2017	42986.36	1	0.002	0	0.2	0	0.0002	0	0.0093	1	0.5	1	0.002	0	0.0004	0
M-56A	CH-CCR-M56A-120817_O	12/8/2017	43077.47	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M-56A	CH-CCR-M-56A-52118_O	5/21/2018	43241.50	0	0.0005	0	0.2	0	0.0002	0	0.0079	1	1.4	1	0.0005	0	0.00012	1
M-56A	CH-CCR-M56A-082818_O	8/28/2018	43340.59	NA	NA	NA	NA	NA	NA	NA	0.0057	1	0.5	1	NA	NA	0.0001	0
M-56A	CH-CCR-M56A-21519	2/15/2019	43511.93	0	NA	NA	NA	NA	NA	NA	0.0074	1	NA	NA	NA	NA	0.0001	0
M-56A	CH-CCR-M56A-41819	4/18/2019	43573.00	0	0.0005	0	0.2	0	0.0002	0	0.014	1	0.7	0	0.00062	1	0.0001	0
M-56A	CH-CCR-M56A-8919	8/9/2019	43686.00	0	NA	NA	0.2	0	NA	NA	0.011	1	0.6	1	NA	NA	0.0001	0
M-56A	CH-CCR-M56A-112519	11/25/2019	43794.47	0	NA	NA	NA	NA	NA	NA	0.0087	1	NA	NA	NA	NA	0.0001	0
M-56A	CH-CCR-M56-0420	4/16/2020	43794.53	0	0.00250	0	1.00000	0	0.00020	0	0.01200	1	NA	NA	0.00250	0	0.0005	0
M-57A	7874_O	11/30/2015	42338.55	0	0.00086	1	0.2	0	0.0002	0	0.008	1	0.9	0	0.00029	1	0.0001	0
M-57A	CH-M-57A-0316_O	3/8/2016	42437.61	0	0.01	0	0.2	0	0.0002	0	0.004	1	0.4	0	0.01	0	0.002	0
M-57A	CH-CCR-M57A-05112016_O	5/11/2016	42501.37	0	0.0005	0	0.2	0	0.0002	0	0.0011	1	0.6	0	0.0005	0	0.0001	0
M-57A	CH-CCR-M57A-816_O	8/25/2016	42607.56	0	0.0005	0	0.2	0	0.0002	0	0.022	1	0.6	0	0.0005	0	0.0001	0
M-57A	CH-CCR-M57A-916_O	9/21/2016	42634.58	0	0.00021	1	0.2	0	0.0002	0	0.0029	1	0.7	0	0.0006	0	0.0001	0
M-57A	CH-CCR-M57A-217_O	2/20/2017	42786.44	0	0.0005	0	0.2	0	0.0002	0	0.0048	1	1.1	1	0.0005	0	0.0001	0
M-57A	CH-CCR-M57A-41217_O	4/12/2017	42837.77	0	0.0005	0	0.2	0	0.0002	0	0.0047	1	0.6	0	0.0005	0	0.0001	0
M-57A	CH-CCR-M57A-42517_O	4/25/2017	42850.36	0	0.0005	0	0.2	0	0.0002	0	0.0042	1	0.6	0	0.0005	0	0.0001	0
M-57A	CH-CCR-M57A-51817_O	5/18/2017	42873.42	0	0.0005	0	0.2	0	0.0002	0	0.0041	1	1.5	1	0.0005	0	0.0001	0
M-57A	CH-CCR-M57A-52517_O	5/25/2017	42880.35	0	0.0005	0	0.2	0	0.0002	0	0.0063	1	0.5	1	0.0005	0	0.0001	0
M-57A	CH-CCR-M57A-70117_O	7/1/2017	42917.59	1	0.0005	0	0.2	0	0.0002	0	0.0037	1	0.7	0	0.0005	0	0.0001	0
M-57A	CH-CCR-M57A-72617_O	7/26/2017	42942.58	0	0.001	0	0.2	0	0.0002	0	0.0058	1	0.7	0	0.001	0	0.0002	0
M-57A	CH-CCR-M57A-90817_O	9/8/2017	42986.33	0	0.002	0	0.2	0	0.0002	0	0.0046	1	0.6	1	0.002	0	0.0004	0
M-57A	CH-CCR-M57A-120817_O	12/8/2017	43077.45	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M-57A	CH-CCR-M-57A-52118_O	5/21/2018	43241.52	0	0.001	0	0.2	0	0.0002	0	0.0026	1	0.7	0	0.001	0	0.0002	0
M-57A	CH-CCR-M57A-082818_O	8/28/2018	43340.55	NA	NA	NA	NA	NA	NA	NA	0.003	1	0.7	1	NA	NA	0.0001	0
M-57A	CH-CCR-M57A-21519	2/15/2019	43511.90	0	NA	NA	NA	NA	NA	NA	0.0029	1	NA	NA	NA	NA	0.0001	0
M-57A	CH-CCR-M57A-41719	4/17/2019	43572.64	1	0.0005	0	0.2	0	0.0002	0	0.0078	1	0.7	0	0.00069	1	0.0001	0
M-57A	CH-CCR-M57A-8919	8/9/2019	43686.00	0	NA	NA	0.2	0	NA	NA	0.0068	1	0.7	0	NA	NA	0.0001	0
M-57A	CH-CCR-M57A-112519	11/25/2019	43794.45	0	NA	NA	NA	NA	NA	NA	0.012	1	NA	NA	NA	NA	0.0001	0
M-57A	CH-CCR-M57-0420	4/16/2020	43794.53	0	0.00250	0	1.00000	0	0.00020	0	0.00250	0	NA	NA	0.00250	0	0.0005	0
M-58A	7876_O	11/30/2015	42338.60	1	0.00056	1	0.2	0	0.0002	0	0.0047	1	0.9	0	0.00024	1	0.0001	0
M-58A	CH-M-58A-0316_O	3/8/2016	42437.62	0	0.01	0	0.2	0	0.0002	0	0.01	0	0.6	0	0.01	0	0.002	0
M-58A	CH-CCR-M58A-05112016_O	5/11/2016	42501.43	0	0.0005	0	0.2	0	0.0002	0	0.0018	1	0.9	1	0.0005	0	0.0001	0
M-58A	CH-CCR-M58A-816_O	8/25/2016	42607.59	0	0.00059	1	0.2	0	0.0002	0	0.02	1	2.6	1	0.0005	0	0.0001	0
M-58A	CH-CCR-M58A-916_O	9/21/2016	42634.55	0	0.0001	0	0.2	0	0.0002	0	0.0025	1	1.2	1	0.0006	0	0.0001	0
M-58A	CH-CCR-M58A-217_O	2/20/2017	42786.41	0	0.00078	1	0.2	0	0.0002	0	0.0022	1	0.8	1	0.0005	0	0.0001	0
M-58A	CH-CCR-M58A-41217_O	4/12/2017	42837.74	0	0.0005	0	0.2	0	0.0002	0	0.0017	1	1.9	1	0.0005	0	0.0001	0
M-58A	CH-CCR-M58A-42517_O	4/25/2017	42850.34	0	0.0005	0	0.2	0	0.0002	0	0.0015	1	0.9	1	0.0005	0	0.0001	0

Appendix A
ProUCL Data

StationName QC_SampleID SampDate			NumDate	Antimony	D_Antimony	Arsenic	D_Arsenic	Barium	D_Barium	Beryllium	D_Beryllium	Cadmium	D_Cadmium	Chromium	D_Chromium	Cobalt	D_Cobalt	Fluoride
M-58A	CH-CCR-M58A-51817_O	5/18/2017	42873.44	0.001	0	0.003	1	0.043	1	0.001	0	0.0001	0	0.00052	1	0.0005	0	0.4
M-58A	CH-CCR-M58A-52517_O	5/25/2017	42880.33	0.001	0	0.0051	1	0.055	1	0.001	0	0.0001	0	0.00055	1	0.0005	0	0.4
M-58A	CH-CCR-M58A-70117_O	7/1/2017	42917.57	0.001	0	0.0047	1	0.063	1	0.001	0	0.0001	0	0.0005	0	0.0005	0	0.4
M-58A	CH-CCR-M58A-72617_O	7/26/2017	42942.47	0.002	0	0.0057	1	0.11	1	0.001	0	0.0002	0	0.003	1	0.001	1	0.4
M-58A	CH-CCR-M58A-90817_O	9/8/2017	42986.31	0.004	0	0.0048	1	0.08	1	0.001	0	0.0004	0	0.004	0	0.002	0	0.4
M-58A	CH-CCR-M58A-120817_O	12/8/2017	43077.43	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.4
M-58A	CH-CCR-M-58A-52118_O	5/21/2018	43241.55	0.002	0	0.0042	1	0.071	1	0.001	0	0.0002	0	0.002	0	0.001	0	0.4
M-58A	CH-CCR-M58A-082818_O	8/28/2018	43340.40	NA	NA	0.0037	1	0.075	1	NA	NA	NA	NA	0.001	0	0.0005	0	NA
M-58A	CH-CCR-M58A-21519	2/15/2019	43511.88	NA	NA	0.0043	1	0.063	1	NA	NA	NA	NA	0.001	0	0.0005	0	0.4
M-58A	CH-CCR-M58A-41719	4/17/2019	43572.00	0.001	0	0.0039	1	0.059	1	0.001	0	0.0001	0	0.001	0	0.0005	0	0.4
M-58A	CH-CCR-M58A-8919	8/9/2019	43686.00	NA	NA	0.0038	1	0.066	1	NA	NA	NA	NA	0.001	0	0.0005	0	0.8
M-58A	CH-CCR-M58A-112519	11/25/2019	43794.38	NA	NA	0.0046	1	0.079	1	NA	NA	NA	NA	0.001	0	0.0005	0	0.4
M-58A	CH-CCR-M58-0420	4/16/2020	43794.53	0.00500	0	0.00420	1	0.06900	1	0.00100	0	0.00050	0	0.00500	0	0.00250	0	0.80000
M-62A	7872_O	11/30/2015	42338.46	0.0025	0	0.002	1	0.082	1	0.001	0	0.0001	0	0.00078	1	0.00054	1	0.4
M-62A	CH-M-62A-0316_O	3/8/2016	42437.50	0.05	0	0.01	0	0.16	1	0.001	0	0.002	0	0.01	0	0.0022	1	0.8
M-62A	CH-CCR-MW62A-50516_O	5/5/2016	42495.59	0.0001	0	0.003	1	0.084	1	0.001	0	0.0001	0	0.0014	1	0.0012	1	0.4
M-62A	CH-CCR-M62A-816_O	8/29/2016	42611.45	0.0001	0	0.0031	1	0.082	1	0.001	0	0.0001	0	0.0005	0	0.0005	0	0.8
M-62A	CH-CCR-M62A-916_O	9/21/2016	42634.63	0.0005	0	0.0028	1	0.075	1	0.001	0	0.0001	0	0.00099	1	0.00046	1	0.8
M-62A	CH-CCR-M62A-217_O	2/20/2017	42786.50	0.001	0	0.0029	1	0.064	1	0.001	0	0.0001	0	0.002	1	0.0005	0	0.4
M-62A	CH-CCR-M62A-41317_O	4/13/2017	42838.37	0.001	0	0.0021	1	0.074	1	0.001	0	0.0001	0	0.0015	1	0.0005	0	0.4
M-62A	CH-CCR-M62A-42517_O	4/25/2017	42850.42	0.001	0	0.0017	1	0.079	1	0.001	0	0.0001	0	0.0017	1	0.0005	0	0.8
M-62A	CH-CCR-M62A-51817_O	5/18/2017	42873.47	0.001	0	0.0016	1	0.072	1	0.001	0	0.0001	0	0.00063	1	0.0005	0	0.4
M-62A	CH-CCR-M62A-52517_O	5/25/2017	42880.45	0.001	0	0.0019	1	0.077	1	0.001	0	0.0001	0	0.00096	1	0.0005	0	0.4
M-62A	CH-CCR-M62A-70117_O	7/1/2017	42917.63	0.001	0	0.0026	1	0.076	1	0.001	0	0.0001	0	0.0011	1	0.0005	0	0.4
M-62A	CH-CCR-M62A-72617_O	7/26/2017	42942.64	0.002	0	0.0024	1	0.075	1	0.001	0	0.0002	0	0.001	0	0.001	0	0.4
M-62A	CH-CCR-M62A-90717_O	9/7/2017	42985.77	0.004	0	0.0031	1	0.079	1	0.001	0	0.0004	0	0.004	0	0.002	0	0.4
M-62A	CH-CCR-M62A-120817_O	12/8/2017	43077.49	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.4
M-62A	CH-CCR-M-62A-52118_O	5/21/2018	43241.58	0.002	0	0.0029	1	0.072	1	0.001	0	0.0002	0	0.002	0	0.001	0	0.4
M-62A	CH-CCR-M62A-082818_O	8/28/2018	43340.61	NA	NA	0.0029	1	0.074	1	NA	NA	NA	NA	0.001	0	0.0005	0	NA
M-62A	CH-CCR-M62A-21519	2/15/2019	43511.84	NA	NA	0.003	1	0.068	1	NA	NA	NA	NA	0.001	0	0.0005	0	0.4
M-62A	CH-CCR-M62A-112519	11/25/2019	43794.53	NA	NA	0.0048	1	0.15	1	NA	NA	NA	NA	0.0044	1	0.0012	1	0.4
M-62A	CH-CCR-M62A-41819	4/18/2019	43573.00	0.001	0	0.0033	1	0.068	1	0.001	0	0.0001	0	0.001	0	0.0005	0	0.47
M-62A	CH-CCR-M62A-8919	8/9/2019	43686.00	NA	NA	0.0031	1	0.067	1	NA	NA	NA	NA	0.0037	1	0.0005	0	0.4
M-62A	CH-CCR-M62-0420	4/16/2020	43794.53	0.00500	0	0.00430	1	0.07800	1	0.00100	0	0.00050	0	0.00530	1	0.00250	0	0.80000

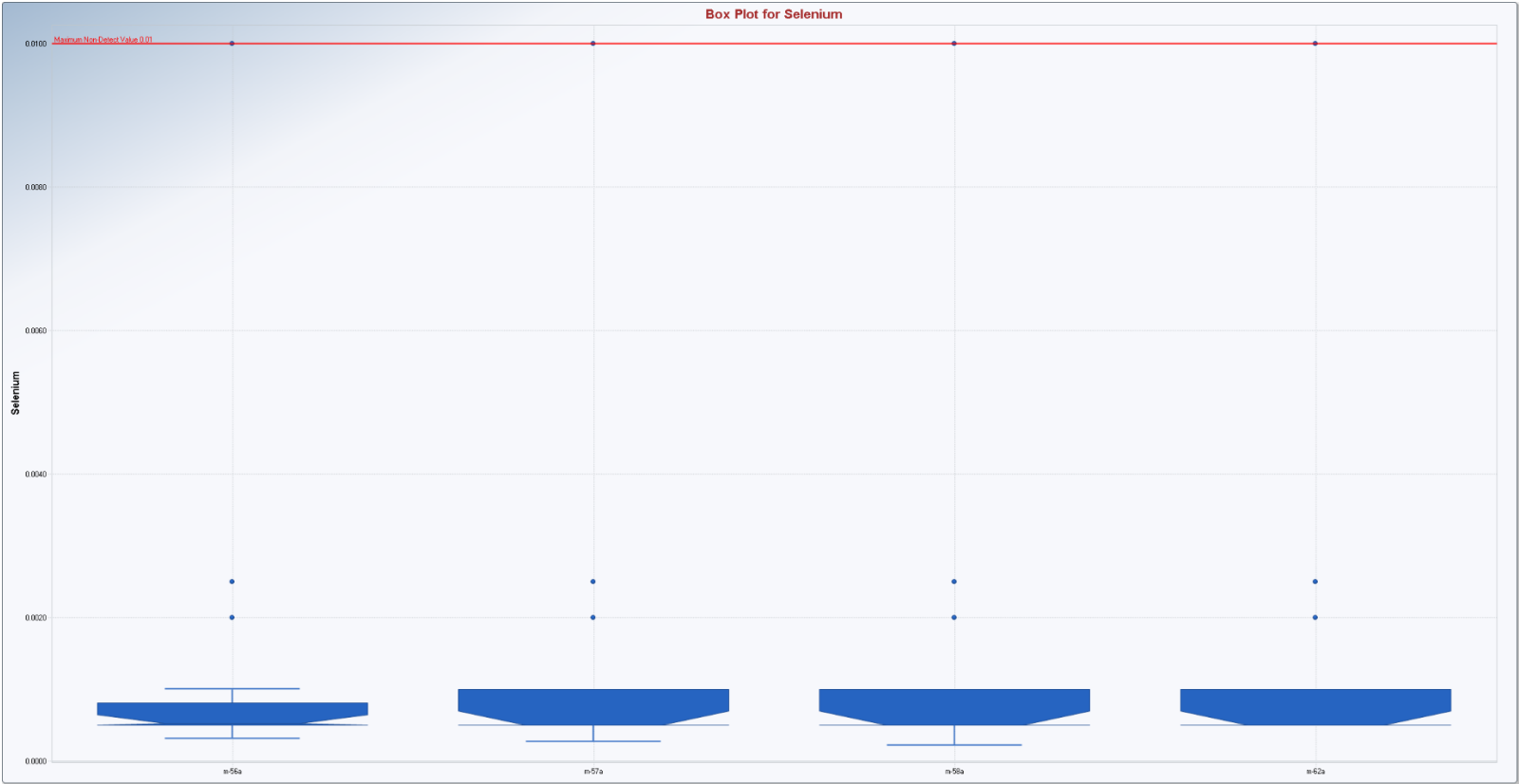
Appendix A
ProUCL Data

StationName QC_SampleID SampDate			Total D_Total															
			NumDate	D_Fluoride	Lead	D_Lead	Lithium	D_Lithium	Mercury	D_Mercury	Molybdenum	D_Molybdenum	Radium	Radium	Selenium	D_Selenium	Thallium	D_Thallium
M-58A	CH-CCR-M58A-51817_O	5/18/2017	42873.44	0	0.0005	0	0.2	0	0.0002	0	0.0014	1	0.6	0	0.0005	0	0.0001	0
M-58A	CH-CCR-M58A-52517_O	5/25/2017	42880.33	0	0.0005	0	0.2	0	0.0002	0	0.0016	1	2.2	1	0.0005	0	0.0001	0
M-58A	CH-CCR-M58A-70117_O	7/1/2017	42917.57	0	0.0005	0	0.2	0	0.0002	0	0.0018	1	0.7	0	0.0005	0	0.0001	0
M-58A	CH-CCR-M58A-72617_O	7/26/2017	42942.47	0	0.0011	1	0.2	0	0.0002	0	0.0021	1	0.7	0	0.001	0	0.0002	0
M-58A	CH-CCR-M58A-90817_O	9/8/2017	42986.31	0	0.002	0	0.2	0	0.0002	0	0.0022	1	0.7	0	0.002	0	0.0004	0
M-58A	CH-CCR-M58A-120817_O	12/8/2017	43077.43	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M-58A	CH-CCR-M-58A-52118_O	5/21/2018	43241.55	0	0.001	0	0.2	0	0.0002	0	0.0018	1	0.7	1	0.001	0	0.0002	0
M-58A	CH-CCR-M58A-082818_O	8/28/2018	43340.40	NA	NA	NA	NA	NA	NA	NA	0.0017	1	0.6	0	NA	NA	0.0001	0
M-58A	CH-CCR-M58A-21519	2/15/2019	43511.88	0	NA	NA	NA	NA	NA	NA	0.0018	NA	NA	NA	NA	NA	0.0001	0
M-58A	CH-CCR-M58A-41719	4/17/2019	43572.00	0	0.0005	0	0.2	0	0.0002	0	0.0018	1	0.7	0	0.0005	0	0.0001	0
M-58A	CH-CCR-M58A-8919	8/9/2019	43686.00	0	NA	NA	0.2	0	NA	NA	0.0018	1	0.7	0	NA	NA	0.0001	0
M-58A	CH-CCR-M58A-112519	11/25/2019	43794.38	0	NA	NA	NA	NA	NA	NA	0.0018	1	NA	NA	NA	NA	0.0001	0
M-58A	CH-CCR-M58-0420	4/16/2020	43794.53	0	0.00250	0	1.00000	0	0.00020	0	0.00250	0	NA	NA	0.00250	0	0.0005	0
M-62A	7872_O	11/30/2015	42338.46	0	0.0005	0	0.2	0	0.0002	0	0.011	1	0.7	0	0.00071	1	0.0001	0
M-62A	CH-M-62A-0316_O	3/8/2016	42437.50	0	0.01	0	0.2	0	0.0002	0	0.0044	1	1	1	0.01	0	0.0005	1
M-62A	CH-CCR-MW62A-50516_O	5/5/2016	42495.59	0	0.0005	0	0.2	0	0.0002	0	0.0026	1	0.5	1	0.0005	0	0.0001	0
M-62A	CH-CCR-M62A-816_O	8/29/2016	42611.45	0	0.0005	0	0.2	0	0.0002	0	0.0023	1	0.9	1	0.0005	0	0.0001	0
M-62A	CH-CCR-M62A-916_O	9/21/2016	42634.63	0	0.0001	0	0.2	0	0.0002	0	0.0022	1	2	1	0.00078	1	0.0001	0
M-62A	CH-CCR-M62A-217_O	2/20/2017	42786.50	0	0.0005	0	0.2	0	0.0002	0	0.0019	1	1.4	1	0.0005	0	0.0001	0
M-62A	CH-CCR-M62A-41317_O	4/13/2017	42838.37	0	0.0005	0	0.2	0	0.0002	0	0.0023	1	1.2	1	0.0005	0	0.0001	0
M-62A	CH-CCR-M62A-42517_O	4/25/2017	42850.42	0	0.0005	0	0.2	0	0.0002	0	0.0022	1	0.9	1	0.0005	0	0.0001	0
M-62A	CH-CCR-M62A-51817_O	5/18/2017	42873.47	0	0.0005	0	0.2	0	0.0002	0	0.002	1	1.2	1	0.0005	0	0.0001	0
M-62A	CH-CCR-M62A-52517_O	5/25/2017	42880.45	0	0.0005	0	0.2	0	0.0002	0	0.0022	1	1.5	1	0.0005	0	0.0001	0
M-62A	CH-CCR-M62A-70117_O	7/1/2017	42917.63	0	0.0005	0	0.2	0	0.0002	0	0.0022	1	0.7	0	0.0005	0	0.0001	0
M-62A	CH-CCR-M62A-72617_O	7/26/2017	42942.64	0	0.001	0	0.2	0	0.0002	0	0.0021	1	1.3	1	0.001	0	0.0002	0
M-62A	CH-CCR-M62A-90717_O	9/7/2017	42985.77	0	0.002	0	0.2	0	0.0002	0	0.003	1	0.9	1	0.002	0	0.0004	0
M-62A	CH-CCR-M62A-120817_O	12/8/2017	43077.49	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
M-62A	CH-CCR-M-62A-52118_O	5/21/2018	43241.58	0	0.001	0	0.2	0	0.0002	0	0.0024	1	0.7	1	0.001	0	0.0002	0
M-62A	CH-CCR-M62A-082818_O	8/28/2018	43340.61	NA	NA	NA	NA	NA	NA	NA	0.0023	1	0.5	1	NA	NA	0.0001	0
M-62A	CH-CCR-M62A-21519	2/15/2019	43511.84	0	NA	NA	NA	NA	NA	NA	0.0024	1	NA	NA	NA	NA	0.0001	0
M-62A	CH-CCR-M62A-112519	11/25/2019	43794.53	0	NA	NA	NA	NA	NA	NA	0.0091	1	NA	NA	NA	NA	0.00016	1
M-62A	CH-CCR-M62A-41819	4/18/2019	43573.00	1	0.0005	0	0.2	0	0.0002	0	0.0026	1	0.8	1	0.0005	0	0.0001	0
M-62A	CH-CCR-M62A-8919	8/9/2019	43686.00	0	NA	NA	0.2	0	NA	NA	0.0028	1	NA	NA	NA	NA	0.0001	0
M-62A	CH-CCR-M62-0420	4/16/2020	43794.53	0	0.00250	0	1.00000	0	0.00020	0	0.00400	1	NA	NA	0.00250	0	0.0005	0

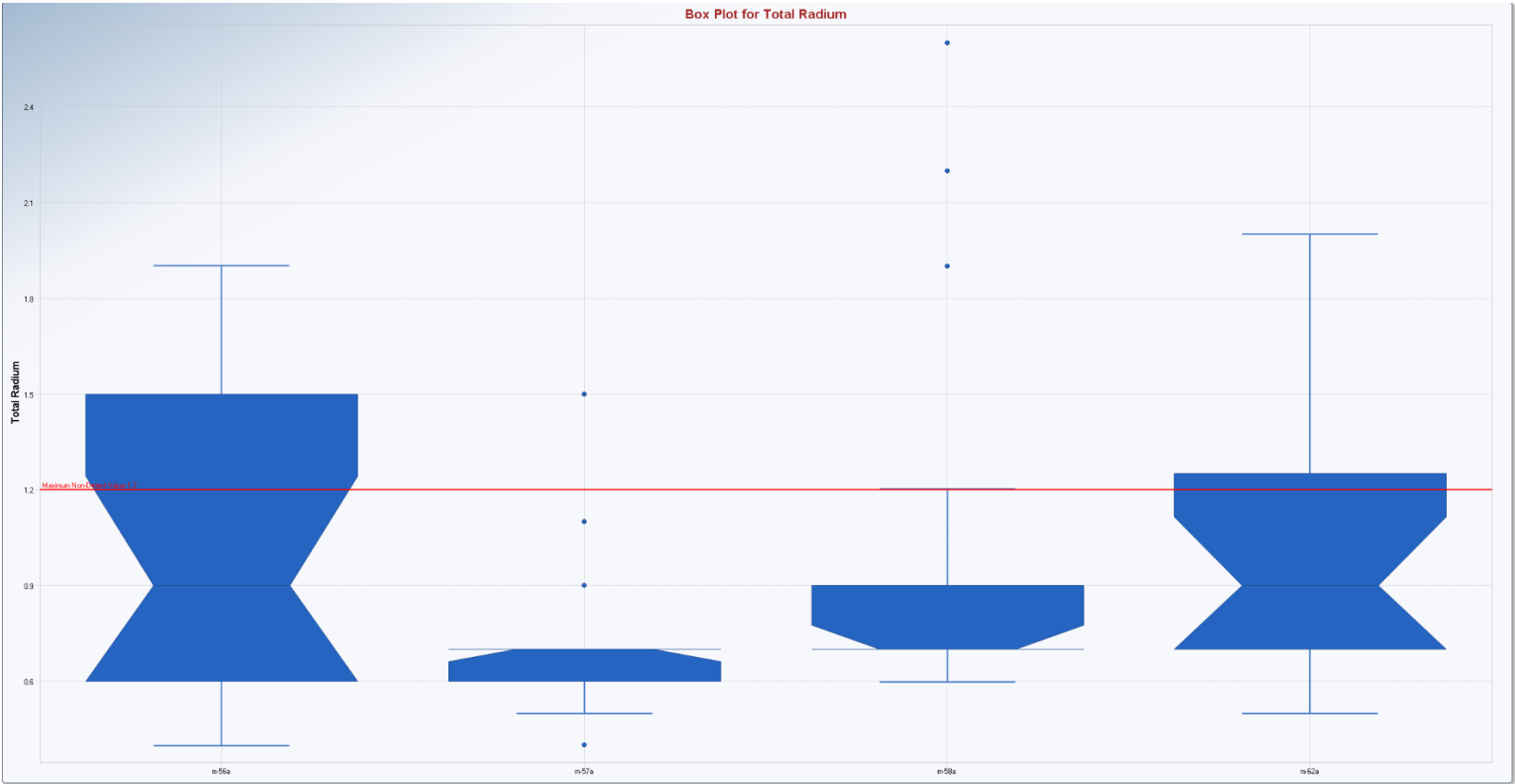
APPENDIX B

PROUCL EDA OUTPUT FILES

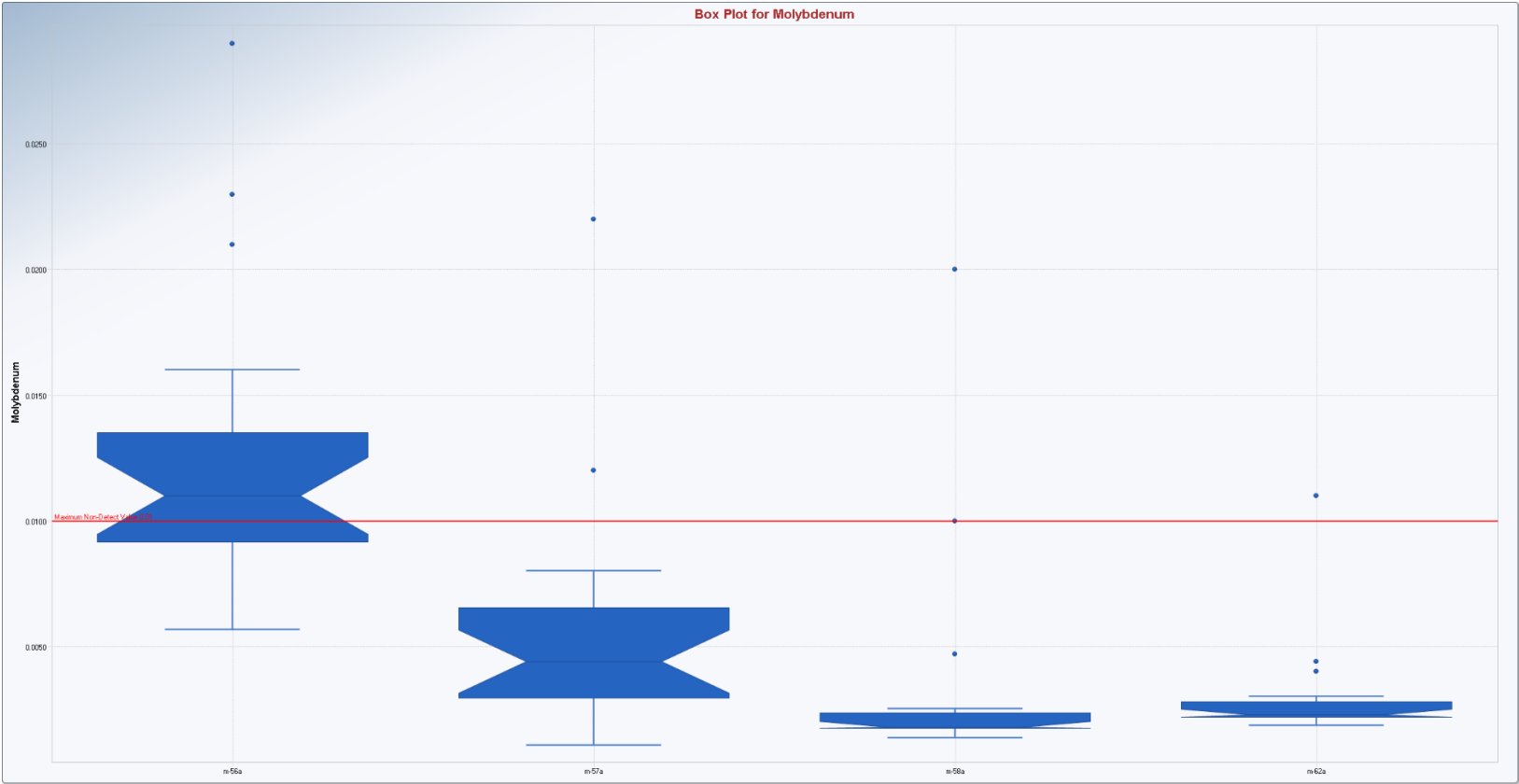
Appendix B
Box and Whisker Plots



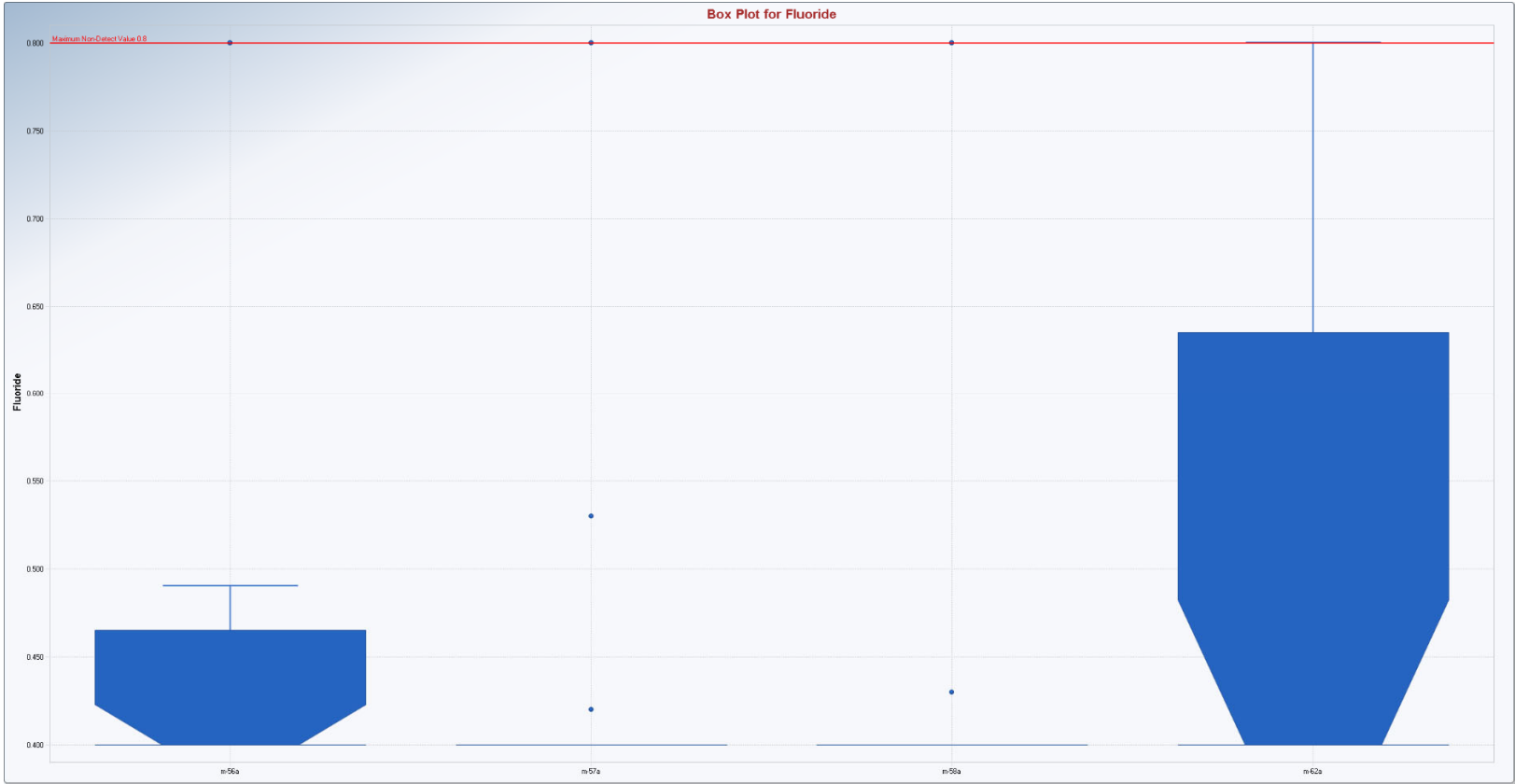
Appendix B
Box and Whisker Plots



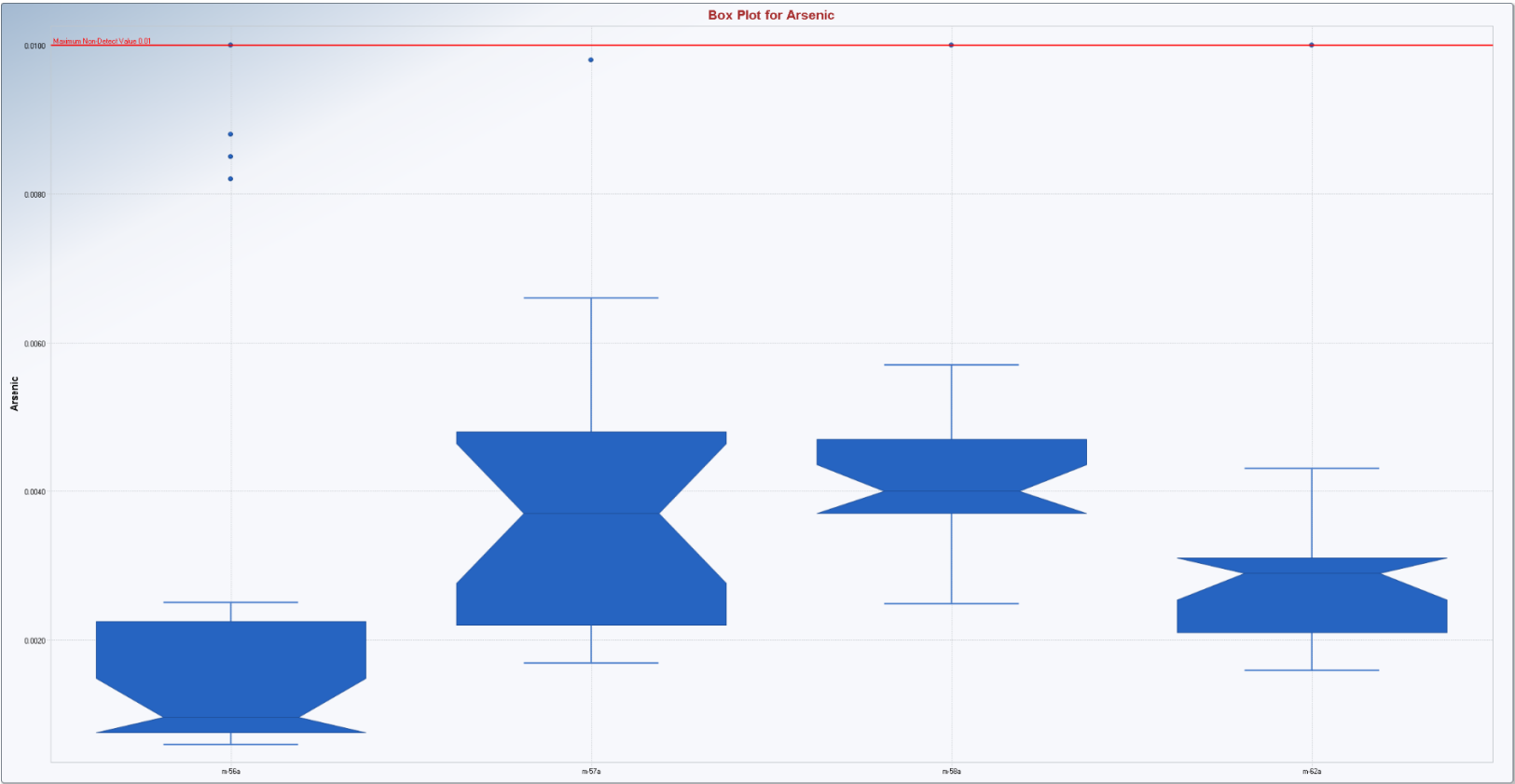
Appendix B
Box and Whisker Plots



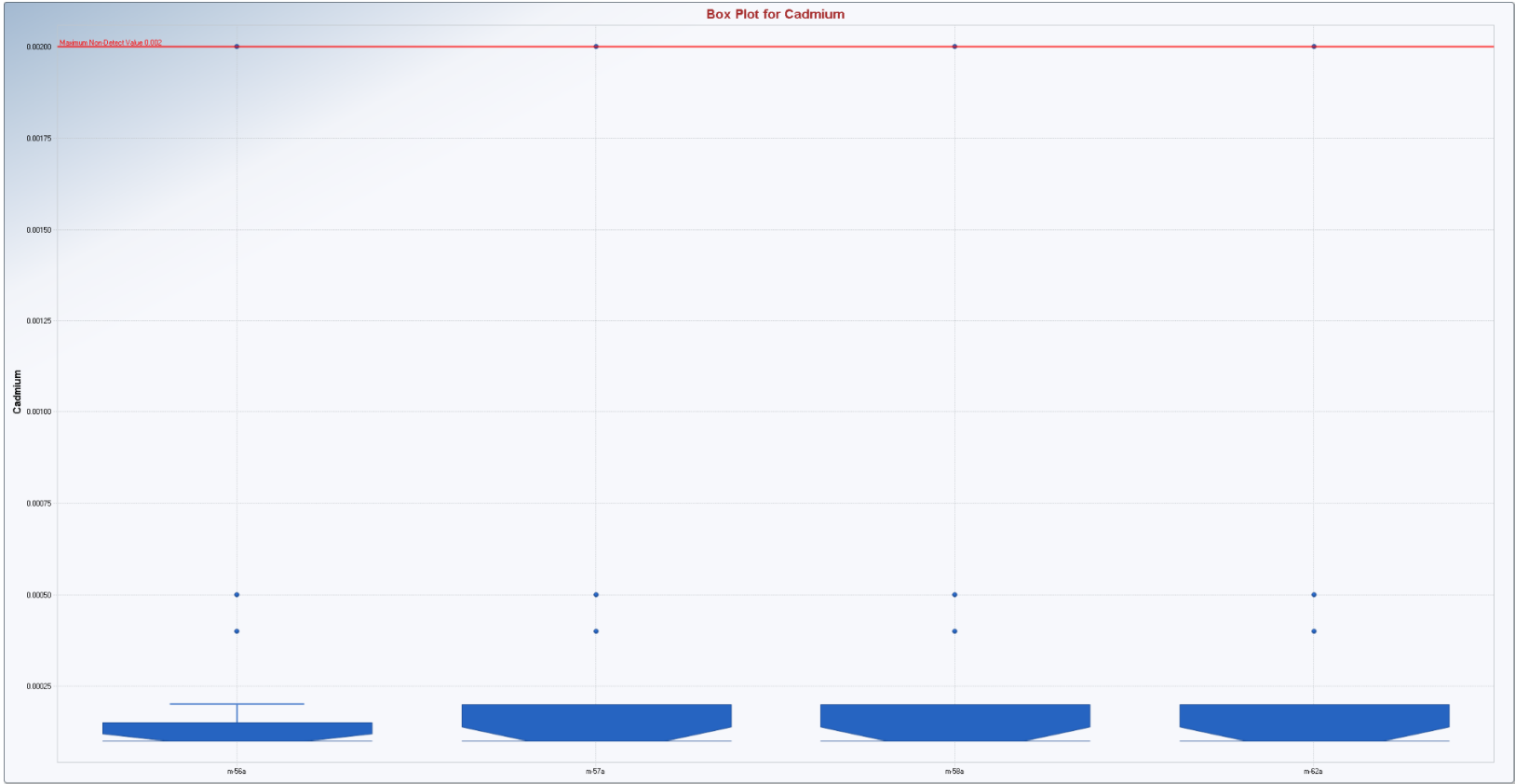
Appendix B
Box and Whisker Plots



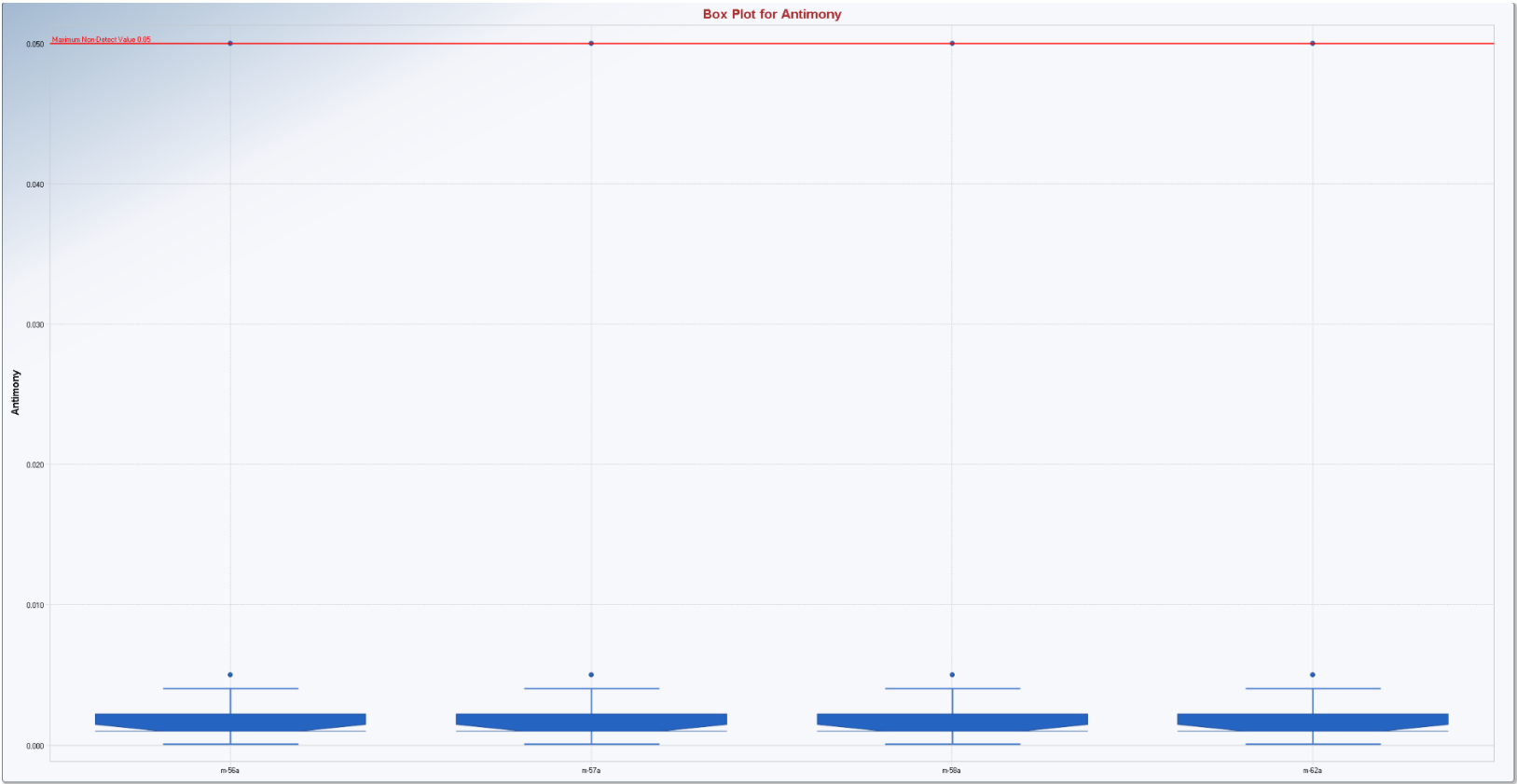
Appendix B
Box and Whisker Plots



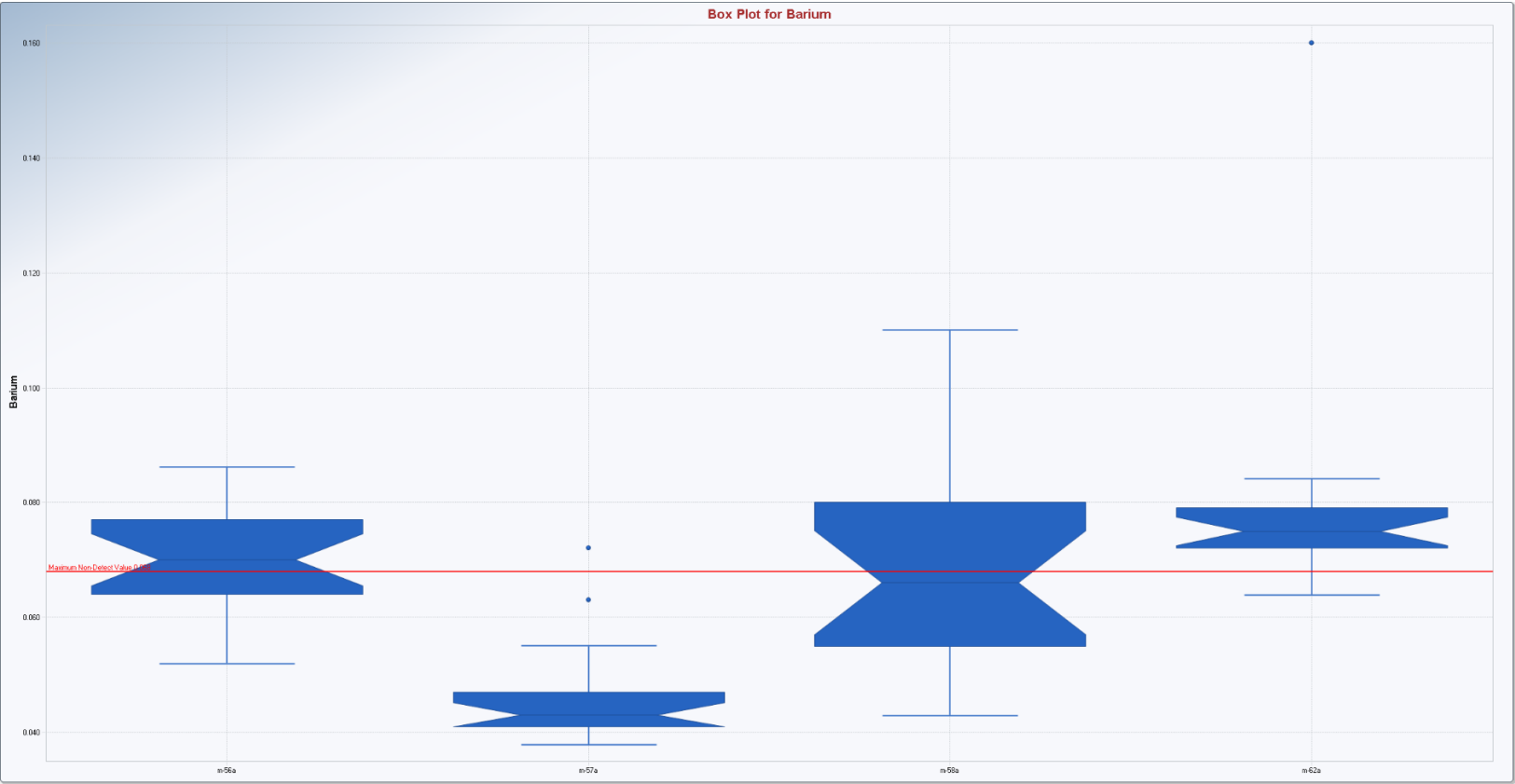
Appendix B
Box and Whisker Plots



Appendix B
Box and Whisker Plots



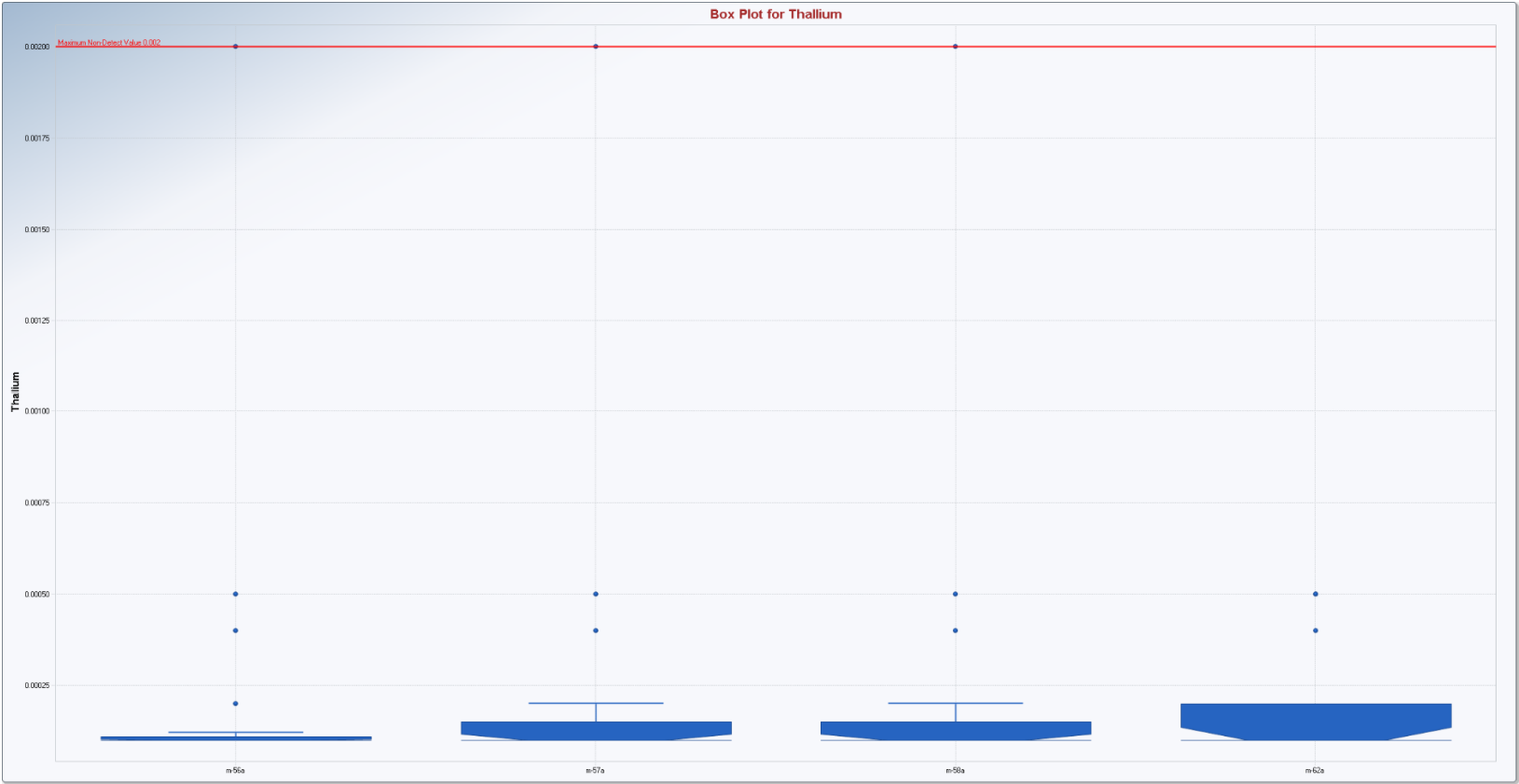
Appendix B
Box and Whisker Plots



Appendix B
Box and Whisker Plots



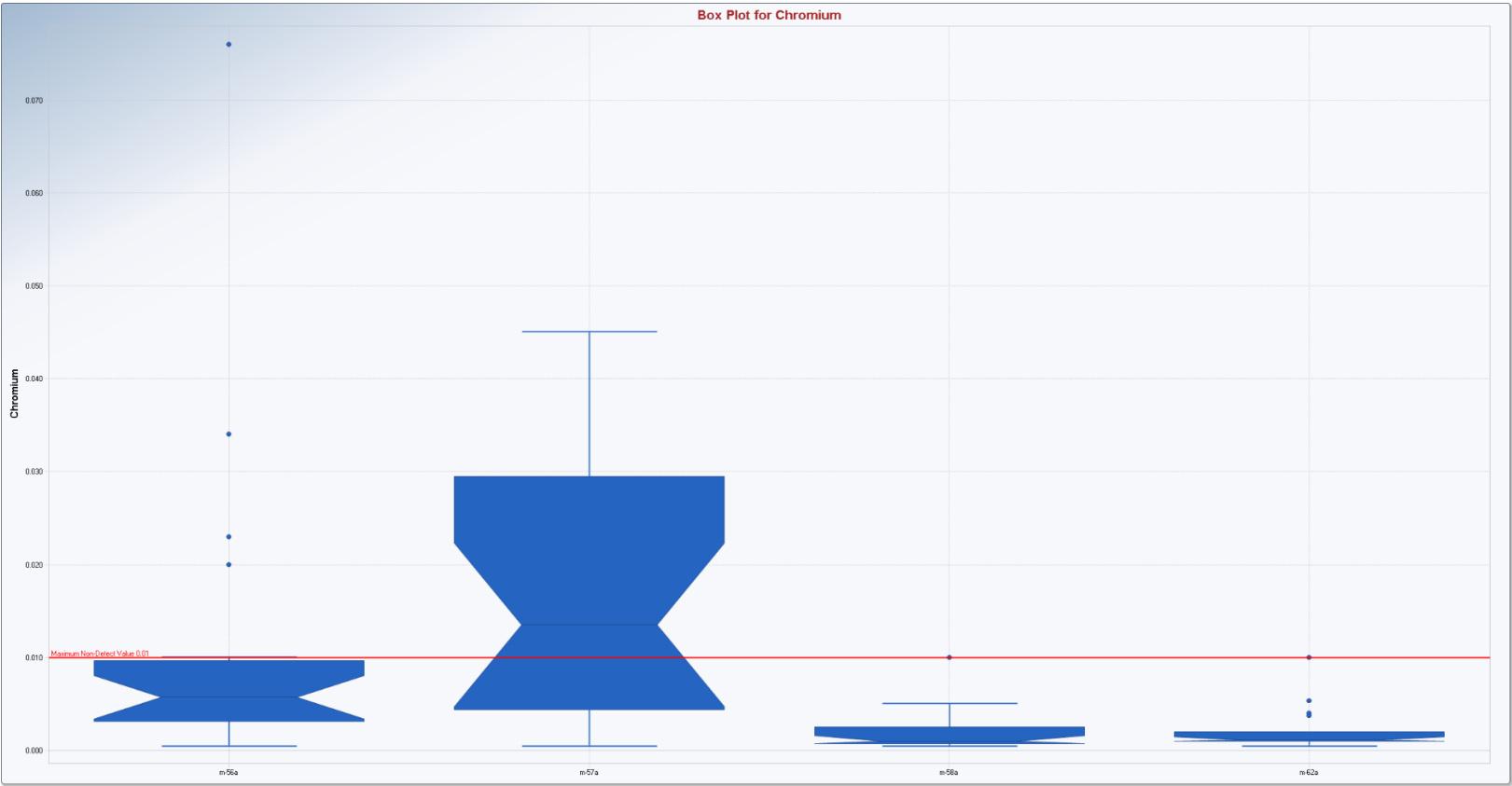
Appendix B
Box and Whisker Plots



Appendix B
Box and Whisker Plots



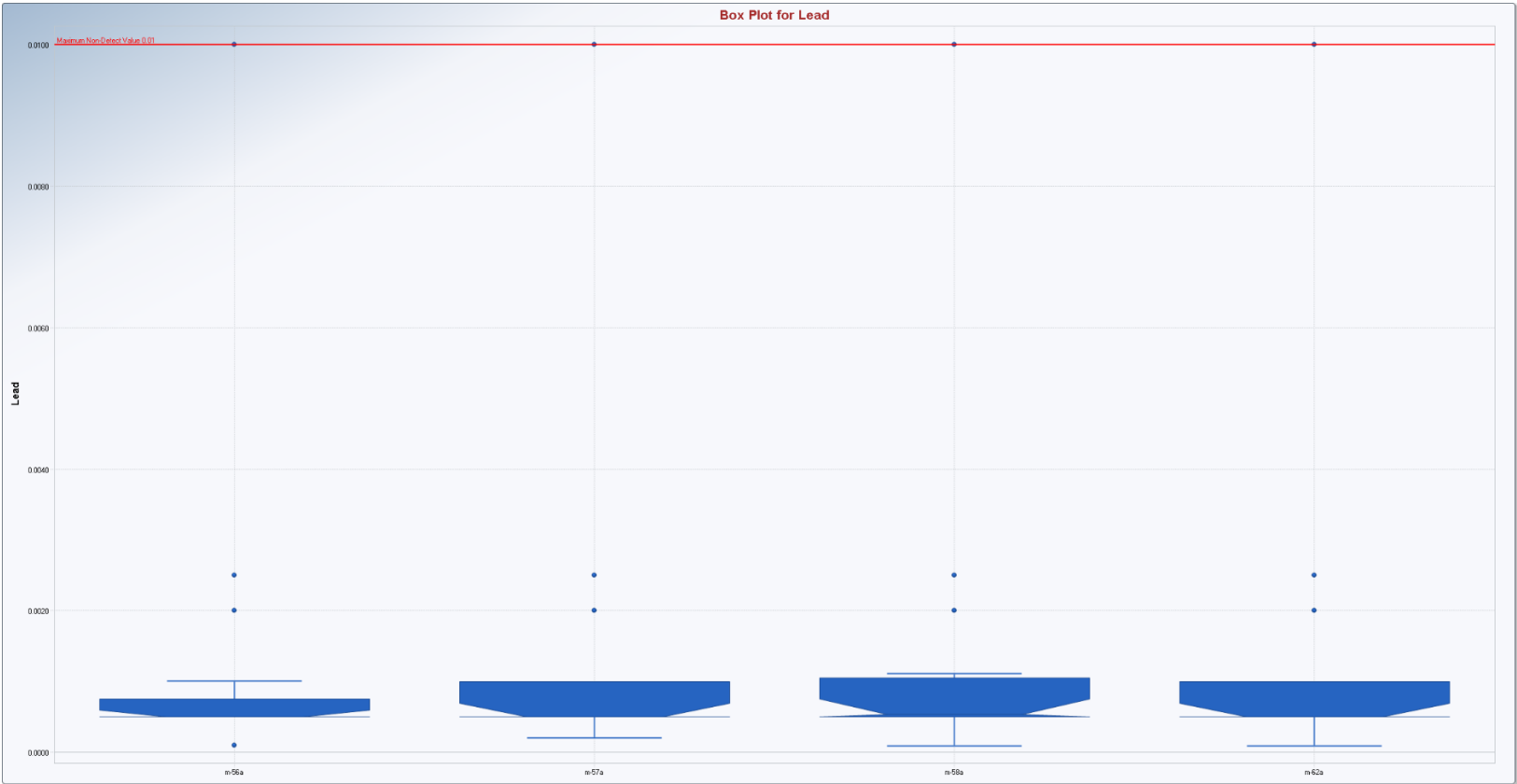
Appendix B
Box and Whisker Plots



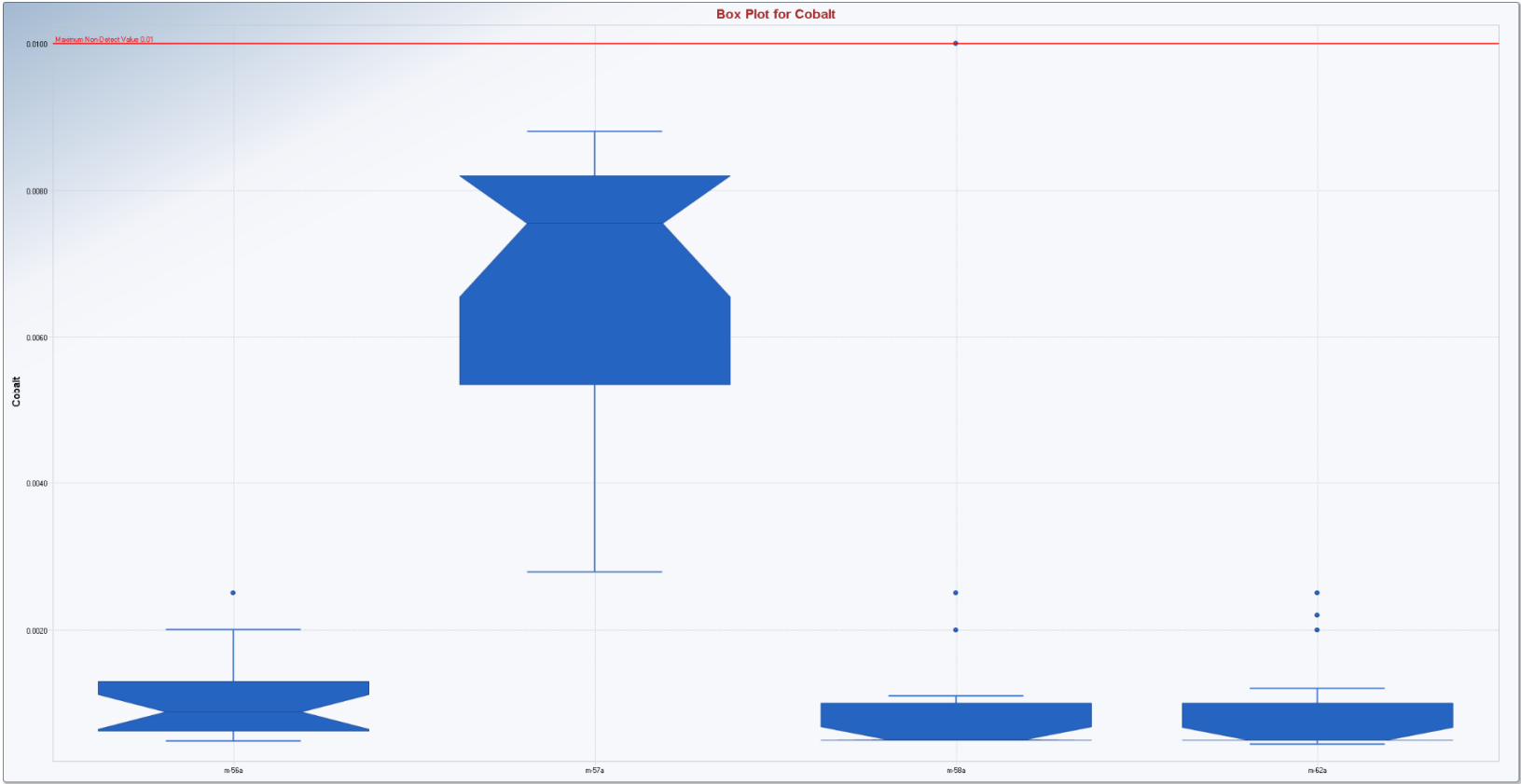
Appendix B
Box and Whisker Plots



Appendix B
Box and Whisker Plots



Appendix B
Box and Whisker Plots



Appendix B Summary Statistics

User Selected Options

From File SEDIPond_Cholla_AssessMonApril2020_NoDups.xls
Full Precision OFF

From File: SEDIPond_Cholla_AssessMonApril2020_NoDups.xls

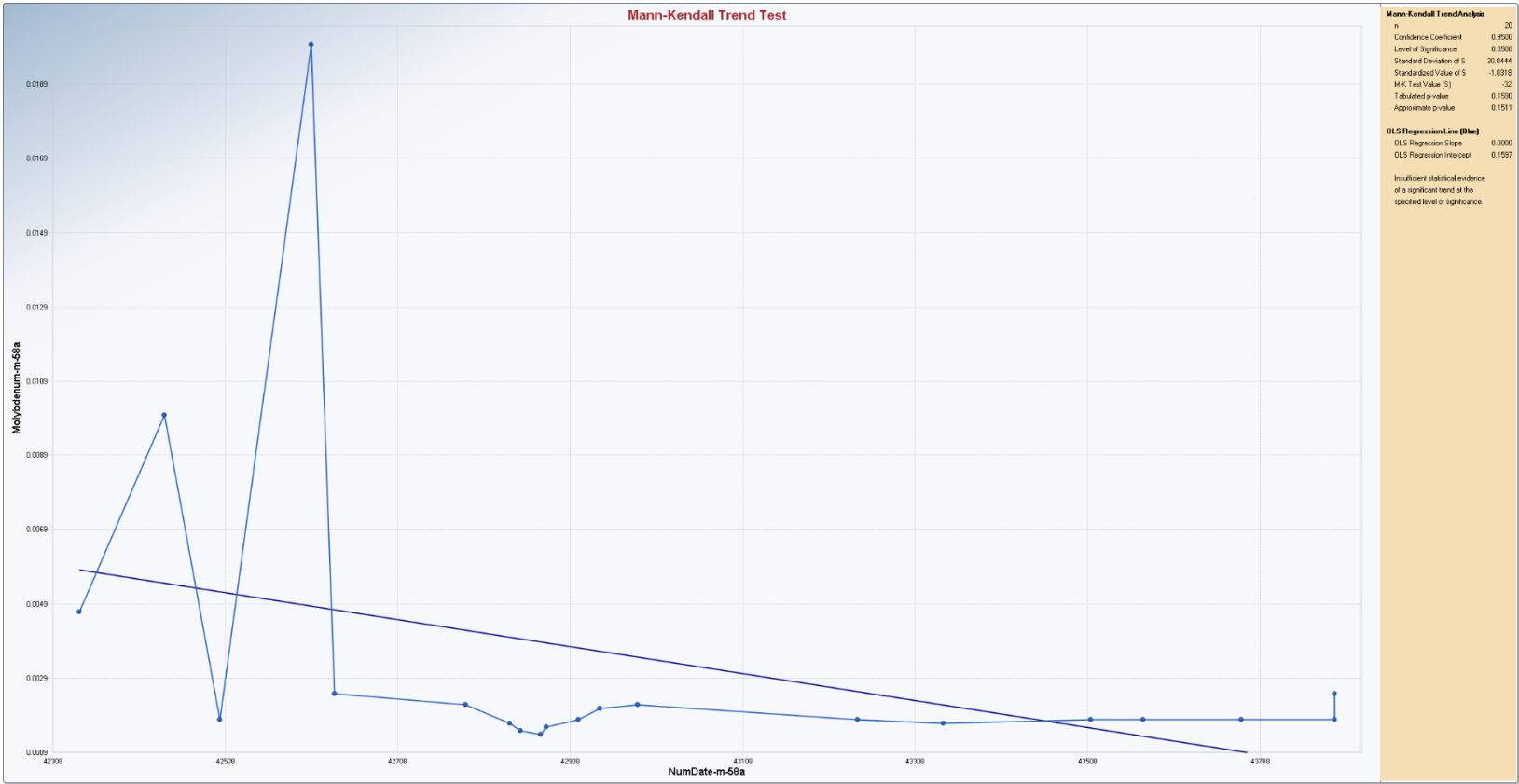
General Statistics for Censored Data Set (with NDs) using Kaplan Meier Method

Variable	NumObs	# Missing	Num Ds	NumNDs	% NDs	Min ND	Max ND	KM Mean	KM Var	KM SD	KM CV
Antimony (m-56a)	16	5	1	15	93.75%	1.0000E-4	0.05	1.1500E-4	2.250E-10	1.5000E-5	0.13
Antimony (m-57a)	16	5	1	15	93.75%	1.0000E-4	0.05	1.1000E-4	1.000E-10	1.0000E-5	0.0909
Antimony (m-58a)	16	5	0	16	100.00%	1.0000E-4	0.05	N/A	N/A	N/A	N/A
Antimony (m-62a)	16	5	0	16	100.00%	1.0000E-4	0.05	N/A	N/A	N/A	N/A
Arsenic (m-56a)	20	1	16	4	20.00%	0.001	0.01	0.0021	7.7842E-6	0.00279	1.329
Arsenic (m-57a)	19	2	18	1	5.26%	0.0019	0.0019	0.00383	4.0295E-6	0.00201	0.524
Arsenic (m-58a)	20	1	19	1	5.00%	0.01	0.01	0.00403	6.2194E-7	7.8863E-4	0.196
Arsenic (m-62a)	19	2	16	3	15.79%	0.0031	0.01	0.00263	4.1695E-7	6.4572E-4	0.246
Barium (m-56a)	20	1	20	0	0.00%	N/A	N/A	0.0703	8.6724E-5	0.00931	0.133
Barium (m-57a)	19	2	18	1	5.26%	0.039	0.039	0.0461	7.1734E-5	0.00847	0.184
Barium (m-58a)	20	1	20	0	0.00%	N/A	N/A	0.0702	3.1413E-4	0.0177	0.253
Barium (m-62a)	19	2	17	2	10.53%	0.067	0.068	0.0789	3.9967E-4	0.02	0.253
Beryllium (m-56a)	16	5	0	16	100.00%	0.001	0.001	N/A	N/A	N/A	N/A
Beryllium (m-57a)	16	5	0	16	100.00%	0.001	0.001	N/A	N/A	N/A	N/A
Beryllium (m-58a)	16	5	0	16	100.00%	0.001	0.001	N/A	N/A	N/A	N/A
Beryllium (m-62a)	16	5	0	16	100.00%	0.001	0.001	N/A	N/A	N/A	N/A
Cadmium (m-56a)	16	5	0	16	100.00%	1.0000E-4	0.002	N/A	N/A	N/A	N/A
Cadmium (m-57a)	16	5	0	16	100.00%	1.0000E-4	0.002	N/A	N/A	N/A	N/A
Cadmium (m-58a)	16	5	0	16	100.00%	1.0000E-4	0.002	N/A	N/A	N/A	N/A
Cadmium (m-62a)	16	5	0	16	100.00%	1.0000E-4	0.002	N/A	N/A	N/A	N/A
Chromium (m-56a)	20	1	16	4	20.00%	5.0000E-4	0.01	0.0111	2.9253E-4	0.0171	1.543
Chromium (m-57a)	20	1	17	3	15.00%	5.0000E-4	0.01	0.0166	2.2027E-4	0.0148	0.895
Chromium (m-58a)	20	1	8	12	60.00%	5.0000E-4	0.01	0.00103	7.1481E-7	8.4546E-4	0.823
Chromium (m-62a)	19	2	10	9	47.37%	5.0000E-4	0.01	0.00128	1.1280E-6	0.00106	0.831
Cobalt (m-56a)	20	1	13	7	35.00%	5.0000E-4	0.0025	9.0022E-4	1.6203E-7	4.0253E-4	0.447
Cobalt (m-57a)	20	1	20	0	0.00%	N/A	N/A	0.00675	3.1300E-6	0.00177	0.262

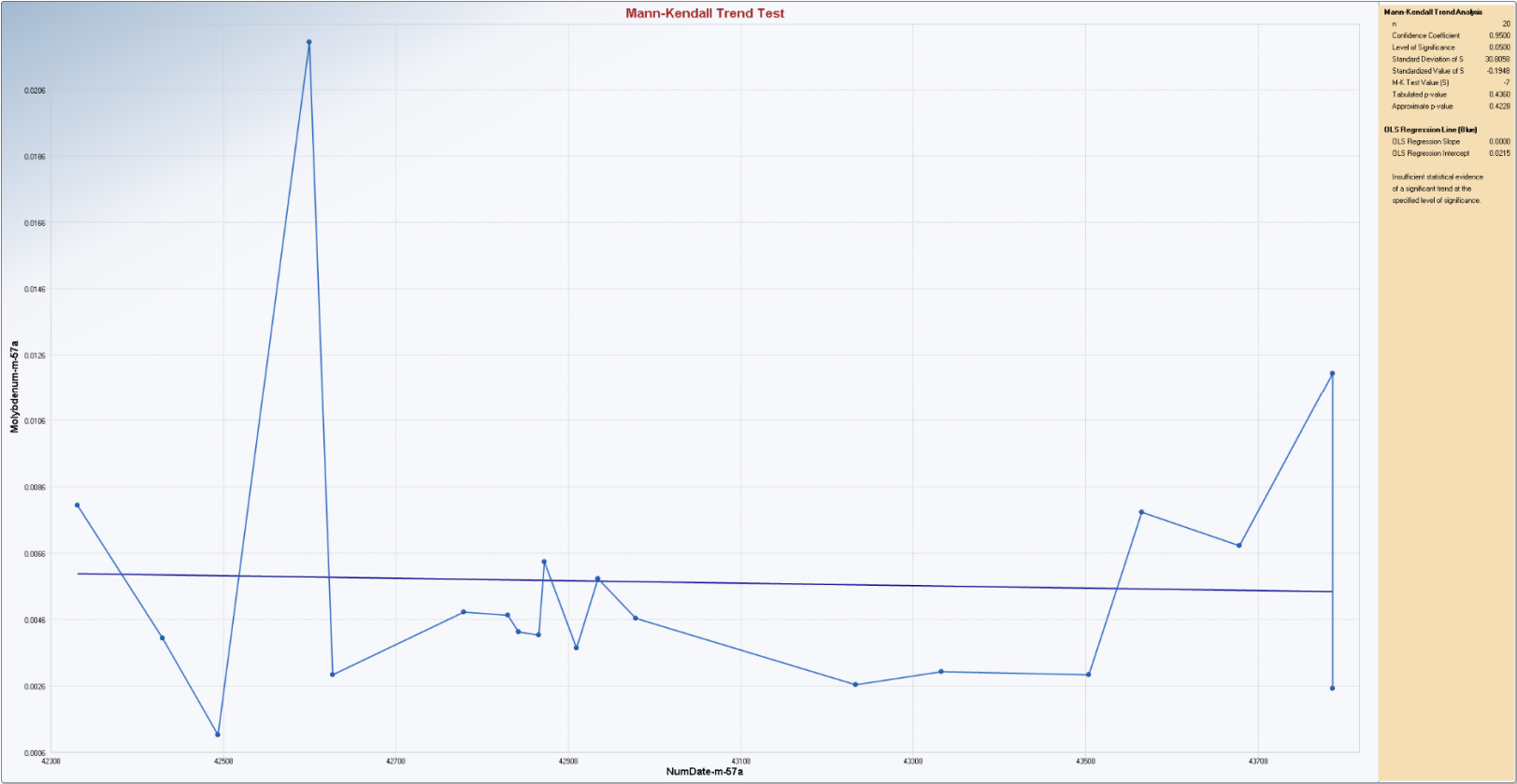
Appendix B Summary Statistics

Variable	NumObs	# Missing	Num Ds	NumNDs	% NDs	Min ND	Max ND	KM Mean	KM Var	KM SD	KM CV
Cobalt (m-58a)	20	1	6	14	70.00%	5.0000E-4	0.01	6.1765E-4	4.1579E-8	2.0391E-4	0.33
Cobalt (m-62a)	19	2	4	15	78.95%	5.0000E-4	0.0025	6.0580E-4	1.7970E-7	4.2391E-4	0.7
Fluoride (m-56a)	20	1	8	12	60.00%	0.4	0.8	0.416	7.8754E-4	0.0281	0.0674
Fluoride (m-57a)	20	1	2	18	90.00%	0.4	0.8	0.408	8.9167E-4	0.0299	0.0731
Fluoride (m-58a)	20	1	1	19	95.00%	0.4	0.8	0.402	4.9827E-5	0.00706	0.0176
Fluoride (m-62a)	20	1	0	20	100.00%	0.4	0.8	N/A	N/A	N/A	N/A
Lead (m-56a)	16	5	0	16	100.00%	1.0000E-4	0.01	N/A	N/A	N/A	N/A
Lead (m-57a)	16	5	2	14	87.50%	5.0000E-4	0.01	2.6909E-4	3.4917E-8	1.8686E-4	0.694
Lead (m-58a)	16	5	4	12	75.00%	1.0000E-4	0.01	3.1371E-4	1.0796E-7	3.2857E-4	1.047
Lead (m-62a)	16	5	0	16	100.00%	1.0000E-4	0.01	N/A	N/A	N/A	N/A
Lithium (m-56a)	17	4	0	17	100.00%	0.2	1	N/A	N/A	N/A	N/A
Lithium (m-57a)	17	4	0	17	100.00%	0.2	1	N/A	N/A	N/A	N/A
Lithium (m-58a)	17	4	0	17	100.00%	0.2	1	N/A	N/A	N/A	N/A
Lithium (m-62a)	17	4	0	17	100.00%	0.2	1	N/A	N/A	N/A	N/A
Mercury (m-56a)	16	5	0	16	100.00%	2.0000E-4	2.0000E-4	N/A	N/A	N/A	N/A
Mercury (m-57a)	16	5	0	16	100.00%	2.0000E-4	2.0000E-4	N/A	N/A	N/A	N/A
Mercury (m-58a)	16	5	0	16	100.00%	2.0000E-4	2.0000E-4	N/A	N/A	N/A	N/A
Mercury (m-62a)	16	5	0	16	100.00%	2.0000E-4	2.0000E-4	N/A	N/A	N/A	N/A
Molybdenum (m-56a)	20	1	20	0	0.00%	N/A	N/A	0.0125	3.3250E-5	0.00577	0.46
Molybdenum (m-57a)	20	1	19	1	5.00%	0.0025	0.0025	0.00562	2.0308E-5	0.00451	0.802
Molybdenum (m-58a)	20	1	17	3	15.00%	0.0018	0.01	0.00289	1.5893E-5	0.00399	1.381
Molybdenum (m-62a)	19	2	17	2	10.53%	0.0026	0.0028	0.00294	4.0048E-6	0.002	0.68
Total Radium (m-56a)	17	4	12	5	29.41%	0.4	1.2	0.967	0.292	0.54	0.559
Total Radium (m-57a)	17	4	5	12	70.59%	0.4	0.9	0.583	0.0803	0.283	0.486
Total Radium (m-58a)	17	4	8	9	52.94%	0.6	0.9	0.978	0.377	0.614	0.628
Total Radium (m-62a)	16	5	13	3	18.75%	0.7	0.8	0.971	0.182	0.426	0.439
Selenium (m-56a)	16	5	4	12	75.00%	5.0000E-4	0.01	3.9725E-4	1.2615E-8	1.1232E-4	0.283
Selenium (m-57a)	16	5	2	14	87.50%	5.0000E-4	0.01	3.2636E-4	1.3223E-8	1.1499E-4	0.352
Selenium (m-58a)	16	5	1	15	93.75%	5.0000E-4	0.01	2.4000E-4	0	0	N/A
Selenium (m-62a)	16	5	2	14	87.50%	5.0000E-4	0.01	5.4455E-4	9.1521E-9	9.5666E-5	0.176
Thallium (m-56a)	20	1	1	19	95.00%	1.0000E-4	0.002	1.0125E-4	2.344E-11	4.8412E-6	0.0478
Thallium (m-57a)	20	1	0	20	100.00%	1.0000E-4	0.002	N/A	N/A	N/A	N/A
Thallium (m-58a)	20	1	0	20	100.00%	1.0000E-4	0.002	N/A	N/A	N/A	N/A
Thallium (m-62a)	19	2	1	18	94.74%	1.0000E-4	5.0000E-4	1.2105E-4	7.9778E-9	8.9319E-5	0.738

Appendix B
Box and Whisker Plots



Appendix B
Box and Whisker Plots



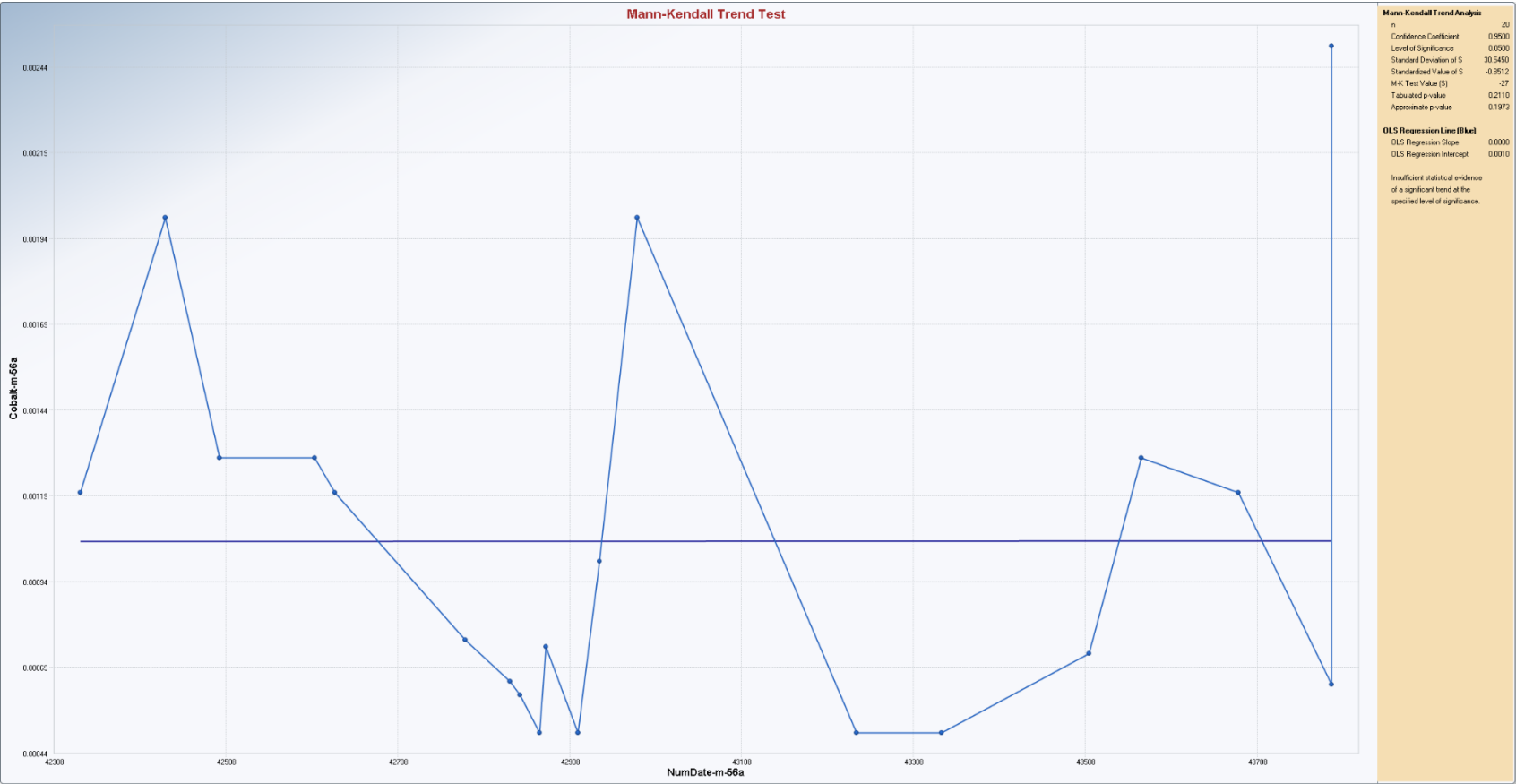
Appendix B
Box and Whisker Plots



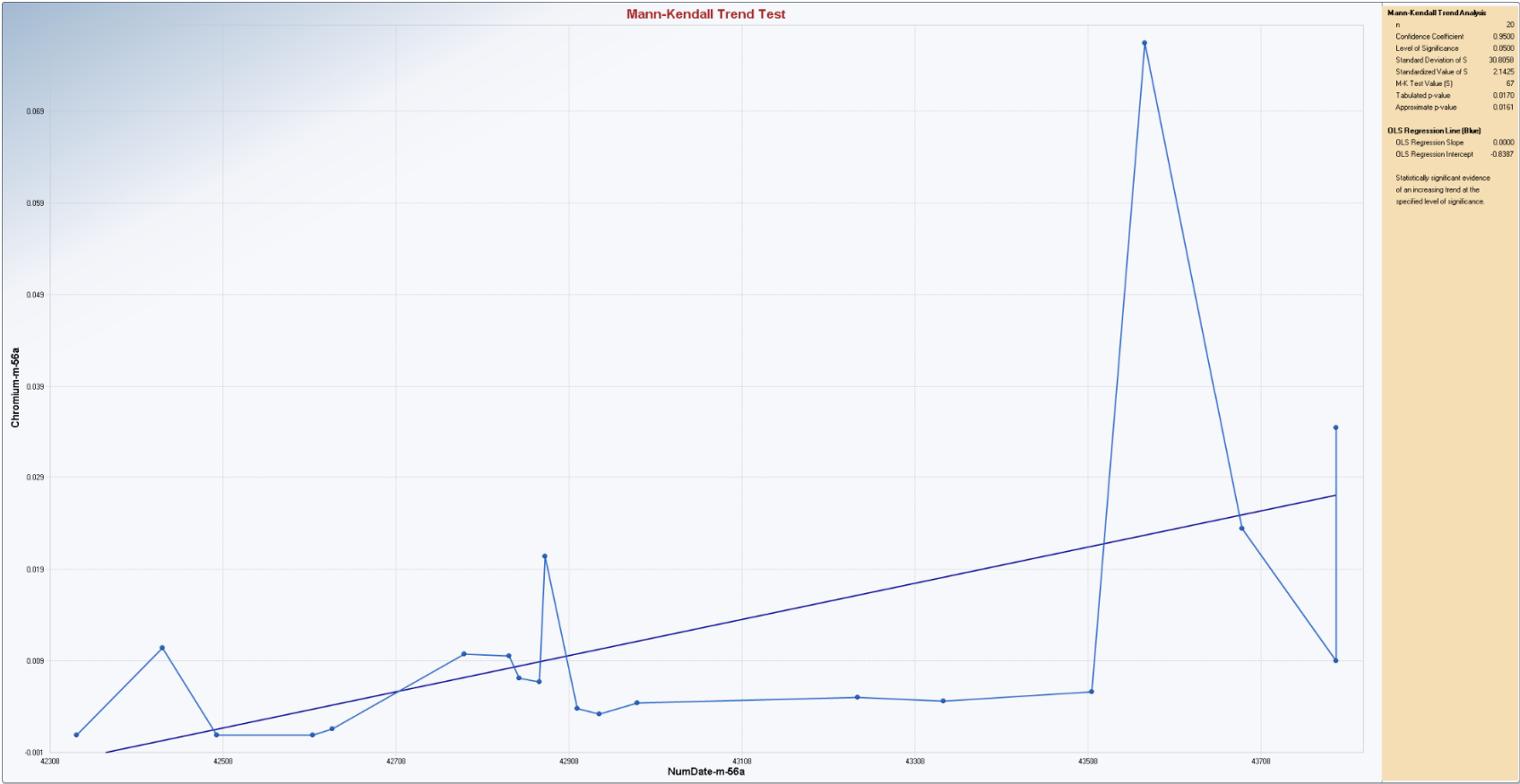
Appendix B
Box and Whisker Plots



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Box and Whisker Plots



Appendix B
Box and Whisker Plots



Appendix B
Box and Whisker Plots



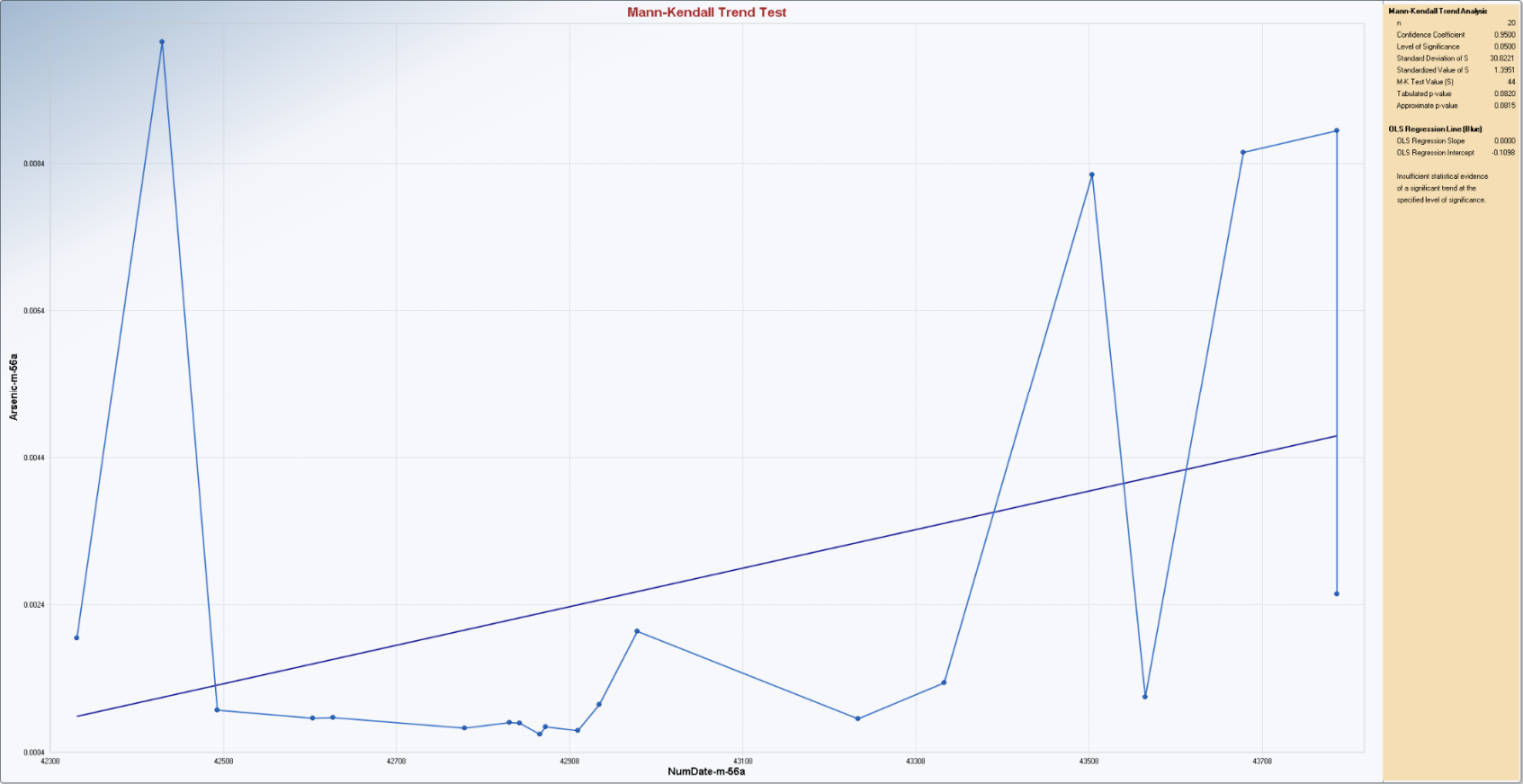
Appendix B
Box and Whisker Plots



Appendix B
Box and Whisker Plots



Appendix B
Box and Whisker Plots



Appendix B Goodness of Fit Statistics

Goodness-of-Fit Test Statistics for Data Sets with Non-Detects							
User Selected Options							
Date/Time of Computation							
From File SEDIPond_Cholla_AssessMonApril2020_NoDups.xls							
Full Precision OFF							
Confidence Coefficient 0.95							
Antimony (m-56a)							
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs	
Raw Statistics	21	5	16	1	15	93.75%	
Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!							
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).							
The data set for variable Antimony (m-56a) was not processed!							
Antimony (m-57a)							
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs	
Raw Statistics	21	5	16	1	15	93.75%	
Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!							
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).							
The data set for variable Antimony (m-57a) was not processed!							
Antimony (m-58a)							
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs	
Raw Statistics	21	5	16	0	16	100.00%	
Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!							

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!								
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).								
The data set for variable Antimony (m-58a) was not processed!								
Antimony (m-62a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	5	16	0	16	100.00%		
Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!								
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!								
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).								
The data set for variable Antimony (m-62a) was not processed!								
Arsenic (m-56a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	1	20	16	4	20.00%		
	Number	Minimum	Maximum	Mean	Median	SD		
Statistics (Non-Detects Only)	4	0.001	0.01	0.00388	0.00225	0.00413		
Statistics (Non-Detects Only)	16	6.0000E-4	0.0088	0.00233	8.2500E-4	0.00308		
Statistics (All: NDs treated as DL value)	20	6.0000E-4	0.01	0.00264	9.6500E-4	0.00325		
Statistics (All: NDs treated as DL/2 value)	20	5.0000E-4	0.0088	0.00225	8.8000E-4	0.00286		
Statistics (Normal ROS Imputed Data)	20	6.0000E-4	0.0088	0.00219	9.7940E-4	0.00276		
Statistics (Gamma ROS Imputed Data)	20	6.0000E-4	0.01	0.00387	0.00102	0.00417		
Statistics (Lognormal ROS Imputed Data)	20	6.0000E-4	0.0088	0.00207	8.8398E-4	0.00279		
	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
Statistics (Non-Detects Only)	1.018	0.869	0.00229	-6.626	0.965	-0.146		
Statistics (NDs = DL)	1.043	0.92	0.00253	-6.487	0.982	-0.151		

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Statistics (NDs = DL/2)	1.079	0.95	0.00209	-6.626	0.939	-0.142		
Statistics (Gamma ROS Estimates)	0.88	0.781	0.0044	-6.222	1.193	-0.192		
Statistics (Lognormal ROS Estimates)	--	--	--	-6.678	0.866	-0.13		
Normal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Normal ROS				
Correlation Coefficient R	0.756	0.797	0.777	0.755				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.567	0.887	Data Not Normal					
Shapiro-Wilk (NDs = DL)	0.63	0.905	Data Not Normal					
Shapiro-Wilk (NDs = DL/2)	0.6	0.905	Data Not Normal					
Shapiro-Wilk (Normal ROS Estimates)	0.57	0.905	Data Not Normal					
Lilliefors (Detects Only)	0.381	0.213	Data Not Normal					
Lilliefors (NDs = DL)	0.328	0.192	Data Not Normal					
Lilliefors (NDs = DL/2)	0.381	0.192	Data Not Normal					
Lilliefors (Normal ROS Estimates)	0.358	0.192	Data Not Normal					
Gamma GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
Correlation Coefficient R	0.889	0.917	0.911	0.851				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Anderson-Darling (Detects Only)	2.638	0.763						
Kolmogorov-Smirnov (Detects Only)	0.326	0.221	Data Not Gamma Distributed					
Anderson-Darling (NDs = DL)	2.424	0.767						
Kolmogorov-Smirnov (NDs = DL)	0.269	0.199	Data Not Gamma Distributed					
Anderson-Darling (NDs = DL/2)	2.7	0.766						
Kolmogorov-Smirnov (NDs = DL/2)	0.324	0.199	Data Not Gamma Distributed					
Anderson-Darling (Gamma ROS Estimates)	2.535	0.774						
Kolmogorov-Smirnov (Gamma ROS Est.)	0.287	0.2	Data Not Gamma Distributed					
Lognormal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Log ROS				

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Correlation Coefficient R	0.849	0.895	0.884	0.839				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.711	0.887	Data Not Lognormal					
Shapiro-Wilk (NDs = DL)	0.786	0.905	Data Not Lognormal					
Shapiro-Wilk (NDs = DL/2)	0.773	0.905	Data Not Lognormal					
Shapiro-Wilk (Lognormal ROS Estimates)	0.701	0.905	Data Not Lognormal					
Lilliefors (Detects Only)	0.268	0.213	Data Not Lognormal					
Lilliefors (NDs = DL)	0.23	0.192	Data Not Lognormal					
Lilliefors (NDs = DL/2)	0.258	0.192	Data Not Lognormal					
Lilliefors (Lognormal ROS Estimates)	0.285	0.192	Data Not Lognormal					
Note: Substitution methods such as DL or DL/2 are not recommended.								
Arsenic (m-57a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	2	19	18	1	5.26%		
	Number	Minimum	Maximum	Mean	Median	SD		
Statistics (Non-Detects Only)	1	0.0019	0.0019	0.0019	0.0019	N/A		
Statistics (Non-Detects Only)	18	0.0017	0.0098	0.00395	0.00375	0.00205		
Statistics (All: NDs treated as DL value)	19	0.0017	0.0098	0.00384	0.0037	0.00205		
Statistics (All: NDs treated as DL/2 value)	19	9.5000E-4	0.0098	0.00379	0.0037	0.00211		
Statistics (Normal ROS Imputed Data)	19	1.6045E-4	0.0098	0.00375	0.0037	0.00218		
Statistics (Gamma ROS Imputed Data)	19	0.0017	0.01	0.00427	0.0038	0.00243		
Statistics (Lognormal ROS Imputed Data)	19	0.00139	0.0098	0.00382	0.0037	0.00208		
	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
Statistics (Non-Detects Only)	4.681	3.938	8.4377E-4	-5.645	0.474	-0.0839		
Statistics (NDs = DL)	4.485	3.812	8.5658E-4	-5.677	0.482	-0.0849		
Statistics (NDs = DL/2)	3.756	3.198	0.00101	-5.714	0.55	-0.0963		
Statistics (Gamma ROS Estimates)	3.907	3.325	0.00109	-5.59	0.519	-0.0928		
Statistics (Lognormal ROS Estimates)	--	--	--	-5.694	0.508	-0.0892		
Normal GOF Test Results								

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
	No NDs	NDs = DL	NDs = DL/2	Normal ROS				
Correlation Coefficient R	0.927	0.923	0.942	0.952				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.867	0.897	Data Not Normal					
Shapiro-Wilk (NDs = DL)	0.858	0.901	Data Not Normal					
Shapiro-Wilk (NDs = DL/2)	0.897	0.901	Data Not Normal					
Shapiro-Wilk (Normal ROS Estimates)	0.921	0.901	Data Appear Normal					
Lilliefors (Detects Only)	0.174	0.202	Data Appear Normal					
Lilliefors (NDs = DL)	0.185	0.197	Data Appear Normal					
Lilliefors (NDs = DL/2)	0.171	0.197	Data Appear Normal					
Lilliefors (Normal ROS Estimates)	0.159	0.197	Data Appear Normal					
Gamma GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
Correlation Coefficient R	0.978	0.977	0.986	0.972				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Anderson-Darling (Detects Only)	0.356	0.743						
Kolmogorov-Smirnov (Detects Only)	0.175	0.204	Detected Data Appear Gamma Distributed					
Anderson-Darling (NDs = DL)	0.416	0.744						
Kolmogorov-Smirnov (NDs = DL)	0.18	0.199	Data Appear Gamma Distributed					
Anderson-Darling (NDs = DL/2)	0.226	0.746						
Kolmogorov-Smirnov (NDs = DL/2)	0.146	0.199	Data Appear Gamma Distributed					
Anderson-Darling (Gamma ROS Estimates)	0.476	0.745						
Kolmogorov-Smirnov (Gamma ROS Est.)	0.168	0.199	Data Appear Gamma Distributed					
Lognormal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Log ROS				
Correlation Coefficient R	0.986	0.982	0.989	0.991				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.968	0.897	Data Appear Lognormal					
Shapiro-Wilk (NDs = DL)	0.958	0.901	Data Appear Lognormal					
Shapiro-Wilk (NDs = DL/2)	0.985	0.901	Data Appear Lognormal					

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Shapiro-Wilk (Lognormal ROS Estimates)	0.981	0.901	Data Appear Lognormal					
Lilliefors (Detects Only)	0.16	0.202	Data Appear Lognormal					
Lilliefors (NDs = DL)	0.162	0.197	Data Appear Lognormal					
Lilliefors (NDs = DL/2)	0.116	0.197	Data Appear Lognormal					
Lilliefors (Lognormal ROS Estimates)	0.142	0.197	Data Appear Lognormal					
Note: Substitution methods such as DL or DL/2 are not recommended.								
Arsenic (m-58a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	1	20	19	1	5.00%		
	Number	Minimum	Maximum	Mean	Median	SD		
Statistics (Non-Detects Only)	1	0.01	0.01	0.01	0.01	N/A		
Statistics (Non-Detects Only)	19	0.0025	0.0057	0.00403	0.004	8.1024E-4		
Statistics (All: NDs treated as DL value)	20	0.0025	0.01	0.00433	0.0041	0.00155		
Statistics (All: NDs treated as DL/2 value)	20	0.0025	0.0057	0.00408	0.0041	8.1813E-4		
Statistics (Normal ROS Imputed Data)	20	0.0025	0.0057	0.00403	0.00401	7.8863E-4		
Statistics (Gamma ROS Imputed Data)	20	0.0025	0.01	0.00433	0.0041	0.00155		
Statistics (Lognormal ROS Imputed Data)	20	0.0025	0.0057	0.00402	0.00397	7.8884E-4		
	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
Statistics (Non-Detects Only)	24.64	20.78	1.6341E-4	-5.535	0.212	-0.0383		
Statistics (NDs = DL)	11.16	9.517	3.8763E-4	-5.489	0.293	-0.0534		
Statistics (NDs = DL/2)	24.44	20.81	1.6673E-4	-5.523	0.213	-0.0385		
Statistics (Gamma ROS Estimates)	11.16	9.517	3.8763E-4	-5.489	0.293	-0.0534		
Statistics (Lognormal ROS Estimates)	--	--	--	-5.535	0.206	-0.0372		
Normal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Normal ROS				
Correlation Coefficient R	0.991	0.84	0.992	0.989				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.983	0.901	Data Appear Normal					
Shapiro-Wilk (NDs = DL)	0.733	0.905	Data Not Normal					

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Shapiro-Wilk (NDs = DL/2)	0.983	0.905	Data Appear Normal					
Shapiro-Wilk (Normal ROS Estimates)	0.98	0.905	Data Appear Normal					
Lilliefors (Detects Only)	0.133	0.197	Data Appear Normal					
Lilliefors (NDs = DL)	0.23	0.192	Data Not Normal					
Lilliefors (NDs = DL/2)	0.123	0.192	Data Appear Normal					
Lilliefors (Normal ROS Estimates)	0.14	0.192	Data Appear Normal					
Gamma GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
Correlation Coefficient R	0.987	0.885	0.986	0.885				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Anderson-Darling (Detects Only)	0.289	0.74						
Kolmogorov-Smirnov (Detects Only)	0.154	0.198	Detected Data Appear Gamma Distributed					
Anderson-Darling (NDs = DL)	0.815	0.742						
Kolmogorov-Smirnov (NDs = DL)	0.175	0.194	Detected Data appear Approximate Gamma Distribution					
Anderson-Darling (NDs = DL/2)	0.292	0.741						
Kolmogorov-Smirnov (NDs = DL/2)	0.144	0.193	Data Appear Gamma Distributed					
Anderson-Darling (Gamma ROS Estimates)	0.815	0.742						
Kolmogorov-Smirnov (Gamma ROS Est.)	0.175	0.194	Detected Data appear Approximate Gamma Distribution					
Lognormal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Log ROS				
Correlation Coefficient R	0.979	0.94	0.978	0.977				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.96	0.901	Data Appear Lognormal					
Shapiro-Wilk (NDs = DL)	0.905	0.905	Data Not Lognormal					
Shapiro-Wilk (NDs = DL/2)	0.956	0.905	Data Appear Lognormal					
Shapiro-Wilk (Lognormal ROS Estimates)	0.957	0.905	Data Appear Lognormal					
Lilliefors (Detects Only)	0.171	0.197	Data Appear Lognormal					
Lilliefors (NDs = DL)	0.155	0.192	Data Appear Lognormal					
Lilliefors (NDs = DL/2)	0.161	0.192	Data Appear Lognormal					
Lilliefors (Lognormal ROS Estimates)	0.178	0.192	Data Appear Lognormal					

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Note: Substitution methods such as DL or DL/2 are not recommended.								
Arsenic (m-62a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	2	19	16	3	15.79%		
	Number	Minimum	Maximum	Mean	Median	SD		
Statistics (Non-Detects Only)	3	0.0031	0.01	0.00547	0.0033	0.00393		
Statistics (Non-Detects Only)	16	0.0016	0.0043	0.00264	0.00285	6.8017E-4		
Statistics (All: NDs treated as DL value)	19	0.0016	0.01	0.00309	0.0029	0.00179		
Statistics (All: NDs treated as DL/2 value)	19	0.00155	0.005	0.00266	0.0028	9.0281E-4		
Statistics (Normal ROS Imputed Data)	19	0.0016	0.0043	0.00263	0.00261	6.2250E-4		
Statistics (Gamma ROS Imputed Data)	19	0.0016	0.01	0.00381	0.0029	0.00282		
Statistics (Lognormal ROS Imputed Data)	19	0.0016	0.0043	0.00262	0.0026	6.2483E-4		
	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
Statistics (Non-Detects Only)	16.03	13.07	1.6492E-4	-5.967	0.262	-0.0439		
Statistics (NDs = DL)	5.58	4.734	5.5366E-4	-5.872	0.395	-0.0673		
Statistics (NDs = DL/2)	9.92	8.389	2.6793E-4	-5.981	0.326	-0.0546		
Statistics (Gamma ROS Estimates)	2.924	2.497	0.0013	-5.752	0.563	-0.098		
Statistics (Lognormal ROS Estimates)	--	--	--	-5.973	0.24	-0.0401		
Normal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Normal ROS				
Correlation Coefficient R	0.953	0.737	0.942	0.956				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.917	0.887	Data Appear Normal					
Shapiro-Wilk (NDs = DL)	0.574	0.901	Data Not Normal					
Shapiro-Wilk (NDs = DL/2)	0.89	0.901	Data Not Normal					
Shapiro-Wilk (Normal ROS Estimates)	0.927	0.901	Data Appear Normal					
Lilliefors (Detects Only)	0.189	0.213	Data Appear Normal					
Lilliefors (NDs = DL)	0.348	0.197	Data Not Normal					
Lilliefors (NDs = DL/2)	0.207	0.197	Data Not Normal					
Lilliefors (Normal ROS Estimates)	0.172	0.197	Data Appear Normal					

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Gamma GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
Correlation Coefficient R	0.956	0.815	0.965	0.881				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Anderson-Darling (Detects Only)	0.596	0.737						
Kolmogorov-Smirnov (Detects Only)	0.186	0.215	Detected Data Appear Gamma Distributed					
Anderson-Darling (NDs = DL)	1.502	0.742						
Kolmogorov-Smirnov (NDs = DL)	0.283	0.199	Data Not Gamma Distributed					
Anderson-Darling (NDs = DL/2)	0.555	0.741						
Kolmogorov-Smirnov (NDs = DL/2)	0.168	0.199	Data Appear Gamma Distributed					
Anderson-Darling (Gamma ROS Estimates)	2.083	0.748						
Kolmogorov-Smirnov (Gamma ROS Est.)	0.345	0.2	Data Not Gamma Distributed					
Lognormal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Log ROS				
Correlation Coefficient R	0.962	0.897	0.97	0.972				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.928	0.887	Data Appear Lognormal					
Shapiro-Wilk (NDs = DL)	0.829	0.901	Data Not Lognormal					
Shapiro-Wilk (NDs = DL/2)	0.935	0.901	Data Appear Lognormal					
Shapiro-Wilk (Lognormal ROS Estimates)	0.951	0.901	Data Appear Lognormal					
Lilliefors (Detects Only)	0.195	0.213	Data Appear Lognormal					
Lilliefors (NDs = DL)	0.246	0.197	Data Not Lognormal					
Lilliefors (NDs = DL/2)	0.16	0.197	Data Appear Lognormal					
Lilliefors (Lognormal ROS Estimates)	0.153	0.197	Data Appear Lognormal					
Note: Substitution methods such as DL or DL/2 are not recommended.								
Barium (m-56a)								
Raw Statistics								
Number of Valid Observations		20						

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Number of Missing Observations		1						
Number of Distinct Observations		19						
Minimum		0.052						
Maximum		0.086						
Mean of Raw Data		0.0703						
Standard Deviation of Raw Data		0.00931						
Khat		58.36						
Theta hat		0.0012						
Kstar		49.64						
Theta star		0.00142						
Mean of Log Transformed Data		-2.664						
Standard Deviation of Log Transformed Data		0.136						
Normal GOF Test Results								
Correlation Coefficient R		0.994						
Shapiro Wilk Test Statistic		0.982						
Shapiro Wilk Critical (0.05) Value		0.905						
Approximate Shapiro Wilk P Value		0.95						
Lilliefors Test Statistic		0.0758						
Lilliefors Critical (0.05) Value		0.192						
Data appear Normal at (0.05) Significance Level								
Gamma GOF Test Results								
Correlation Coefficient R		0.99						
A-D Test Statistic		0.148						
A-D Critical (0.05) Value		0.74						
K-S Test Statistic		0.0764						
K-S Critical(0.05) Value		0.193						
Data appear Gamma Distributed at (0.05) Significance Level								
Lognormal GOF Test Results								
Correlation Coefficient R		0.99						
Shapiro Wilk Test Statistic		0.974						
Shapiro Wilk Critical (0.05) Value		0.905						

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Approximate Shapiro Wilk P Value		0.833						
Lilliefors Test Statistic		0.0671						
Lilliefors Critical (0.05) Value		0.192						
Data appear Lognormal at (0.05) Significance Level								
Barium (m-57a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	2	19	18	1	5.26%		
	Number	Minimum	Maximum	Mean	Median	SD		
Statistics (Non-Detects Only)	1	0.039	0.039	0.039	0.039	N/A		
Statistics (Non-Detects Only)	18	0.038	0.072	0.0465	0.043	0.00873		
Statistics (All: NDs treated as DL value)	19	0.038	0.072	0.0461	0.043	0.00865		
Statistics (All: NDs treated as DL/2 value)	19	0.0195	0.072	0.0451	0.043	0.0105		
Statistics (Normal ROS Imputed Data)	19	0.0317	0.072	0.0457	0.043	0.00913		
Statistics (Gamma ROS Imputed Data)	19	0.0323	0.072	0.0458	0.043	0.00908		
Statistics (Lognormal ROS Imputed Data)	19	0.0343	0.072	0.0459	0.043	0.00893		
	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
Statistics (Non-Detects Only)	35.86	29.92	0.0013	-3.082	0.165	-0.0536		
Statistics (NDs = DL)	35.87	30.24	0.00129	-3.091	0.165	-0.0533		
Statistics (NDs = DL/2)	18.04	15.23	0.0025	-3.127	0.253	-0.0811		
Statistics (Gamma ROS Estimates)	30.99	26.13	0.00148	-3.101	0.179	-0.0579		
Statistics (Lognormal ROS Estimates)	--	--	--	-3.098	0.174	-0.0561		
Normal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Normal ROS				
Correlation Coefficient R	0.851	0.852	0.898	0.89				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.736	0.897	Data Not Normal					
Shapiro-Wilk (NDs = DL)	0.738	0.901	Data Not Normal					
Shapiro-Wilk (NDs = DL/2)	0.837	0.901	Data Not Normal					
Shapiro-Wilk (Normal ROS Estimates)	0.811	0.901	Data Not Normal					
Lilliefors (Detects Only)	0.29	0.202	Data Not Normal					

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Lilliefors (NDs = DL)	0.288	0.197	Data Not Normal					
Lilliefors (NDs = DL/2)	0.244	0.197	Data Not Normal					
Lilliefors (Normal ROS Estimates)	0.268	0.197	Data Not Normal					
Gamma GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
Correlation Coefficient R	0.885	0.886	0.914	0.916				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Anderson-Darling (Detects Only)	1.712	0.739						
Kolmogorov-Smirnov (Detects Only)	0.278	0.203	Data Not Gamma Distributed					
Anderson-Darling (NDs = DL)	1.717	0.74						
Kolmogorov-Smirnov (NDs = DL)	0.272	0.198	Data Not Gamma Distributed					
Anderson-Darling (NDs = DL/2)	1.536	0.74						
Kolmogorov-Smirnov (NDs = DL/2)	0.27	0.198	Data Not Gamma Distributed					
Anderson-Darling (Gamma ROS Estimates)	1.338	0.74						
Kolmogorov-Smirnov (Gamma ROS Est.)	0.25	0.198	Data Not Gamma Distributed					
Lognormal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Log ROS				
Correlation Coefficient R	0.883	0.887	0.866	0.916				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.79	0.897	Data Not Lognormal					
Shapiro-Wilk (NDs = DL)	0.796	0.901	Data Not Lognormal					
Shapiro-Wilk (NDs = DL/2)	0.785	0.901	Data Not Lognormal					
Shapiro-Wilk (Lognormal ROS Estimates)	0.854	0.901	Data Not Lognormal					
Lilliefors (Detects Only)	0.267	0.202	Data Not Lognormal					
Lilliefors (NDs = DL)	0.262	0.197	Data Not Lognormal					
Lilliefors (NDs = DL/2)	0.291	0.197	Data Not Lognormal					
Lilliefors (Lognormal ROS Estimates)	0.245	0.197	Data Not Lognormal					
Note: Substitution methods such as DL or DL/2 are not recommended.								
Barium (m-58a)								

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Raw Statistics								
Number of Valid Observations	20							
Number of Missing Observations	1							
Number of Distinct Observations	18							
Minimum	0.043							
Maximum	0.11							
Mean of Raw Data	0.0702							
Standard Deviation of Raw Data	0.0177							
Khat	17.11							
Theta hat	0.0041							
Kstar	14.58							
Theta star	0.00481							
Mean of Log Transformed Data	-2.687							
Standard Deviation of Log Transformed Data	0.249							
Normal GOF Test Results								
Correlation Coefficient R	0.979							
Shapiro Wilk Test Statistic	0.956							
Shapiro Wilk Critical (0.05) Value	0.905							
Approximate Shapiro Wilk P Value	0.485							
Lilliefors Test Statistic	0.12							
Lilliefors Critical (0.05) Value	0.192							
Data appear Normal at (0.05) Significance Level								
Gamma GOF Test Results								
Correlation Coefficient R	0.991							
A-D Test Statistic	0.188							
A-D Critical (0.05) Value	0.741							
K-S Test Statistic	0.0954							
K-S Critical(0.05) Value	0.194							
Data appear Gamma Distributed at (0.05) Significance Level								
Lognormal GOF Test Results								

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Correlation Coefficient R		0.994						
Shapiro Wilk Test Statistic		0.983						
Shapiro Wilk Critical (0.05) Value		0.905						
Approximate Shapiro Wilk P Value		0.961						
Lilliefors Test Statistic		0.0929						
Lilliefors Critical (0.05) Value		0.192						
Data appear Lognormal at (0.05) Significance Level								
Barium (m-62a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	2	19	17	2	10.53%		
	Number	Minimum	Maximum	Mean	Median	SD		
Statistics (Non-Detects Only)	2	0.067	0.068	0.0675	0.0675	7.0711E-4		
Statistics (Non-Detects Only)	17	0.064	0.16	0.0806	0.076	0.0211		
Statistics (All: NDs treated as DL value)	19	0.064	0.16	0.0793	0.075	0.0203		
Statistics (All: NDs treated as DL/2 value)	19	0.0335	0.16	0.0757	0.075	0.0248		
Statistics (Normal ROS Imputed Data)	19	0.0529	0.16	0.0777	0.075	0.0217		
Statistics (Gamma ROS Imputed Data)	19	0.0541	0.16	0.0779	0.075	0.0216		
Statistics (Lognormal ROS Imputed Data)	19	0.0593	0.16	0.0784	0.075	0.021		
	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
Statistics (Non-Detects Only)	23.33	19.25	0.00346	-2.539	0.194	-0.0766		
Statistics (NDs = DL)	24.27	20.47	0.00327	-2.556	0.19	-0.0743		
Statistics (NDs = DL/2)	10.61	8.973	0.00713	-2.629	0.325	-0.123		
Statistics (Gamma ROS Estimates)	19.33	16.32	0.00403	-2.579	0.219	-0.0848		
Statistics (Lognormal ROS Estimates)	--	--	--	-2.569	0.204	-0.0795		
Normal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Normal ROS				
Correlation Coefficient R	0.676	0.682	0.806	0.756				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.491	0.892	Data Not Normal					
Shapiro-Wilk (NDs = DL)	0.498	0.901	Data Not Normal					

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Shapiro-Wilk (NDs = DL/2)	0.688	0.901	Data Not Normal					
Shapiro-Wilk (Normal ROS Estimates)	0.606	0.901	Data Not Normal					
Lilliefors (Detects Only)	0.378	0.207	Data Not Normal					
Lilliefors (NDs = DL)	0.355	0.197	Data Not Normal					
Lilliefors (NDs = DL/2)	0.316	0.197	Data Not Normal					
Lilliefors (Normal ROS Estimates)	0.334	0.197	Data Not Normal					
Gamma GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
Correlation Coefficient R	0.723	0.728	0.829	0.789				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Anderson-Darling (Detects Only)	2.656	0.738						
Kolmogorov-Smirnov (Detects Only)	0.336	0.209	Data Not Gamma Distributed					
Anderson-Darling (NDs = DL)	2.599	0.74						
Kolmogorov-Smirnov (NDs = DL)	0.308	0.198	Data Not Gamma Distributed					
Anderson-Darling (NDs = DL/2)	2.298	0.741						
Kolmogorov-Smirnov (NDs = DL/2)	0.275	0.199	Data Not Gamma Distributed					
Anderson-Darling (Gamma ROS Estimates)	1.95	0.74						
Kolmogorov-Smirnov (Gamma ROS Est.)	0.287	0.198	Data Not Gamma Distributed					
Lognormal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Log ROS				
Correlation Coefficient R	0.753	0.767	0.839	0.819				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.604	0.892	Data Not Lognormal					
Shapiro-Wilk (NDs = DL)	0.621	0.901	Data Not Lognormal					
Shapiro-Wilk (NDs = DL/2)	0.735	0.901	Data Not Lognormal					
Shapiro-Wilk (Lognormal ROS Estimates)	0.703	0.901	Data Not Lognormal					
Lilliefors (Detects Only)	0.315	0.207	Data Not Lognormal					
Lilliefors (NDs = DL)	0.286	0.197	Data Not Lognormal					
Lilliefors (NDs = DL/2)	0.287	0.197	Data Not Lognormal					
Lilliefors (Lognormal ROS Estimates)	0.273	0.197	Data Not Lognormal					

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Note: Substitution methods such as DL or DL/2 are not recommended.								
Beryllium (m-56a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	5	16	0	16	100.00%		
Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!								
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!								
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).								
The data set for variable Beryllium (m-56a) was not processed!								
Beryllium (m-57a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	5	16	0	16	100.00%		
Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!								
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!								
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).								
The data set for variable Beryllium (m-57a) was not processed!								
Beryllium (m-58a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	5	16	0	16	100.00%		
Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!								
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!								
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).								

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
The data set for variable Beryllium (m-58a) was not processed!								
Beryllium (m-62a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	5	16	0	16	100.00%		
Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!								
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!								
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).								
The data set for variable Beryllium (m-62a) was not processed!								
Cadmium (m-56a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	5	16	0	16	100.00%		
Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!								
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!								
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).								
The data set for variable Cadmium (m-56a) was not processed!								
Cadmium (m-57a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	5	16	0	16	100.00%		
Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!								
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!								

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).								
The data set for variable Cadmium (m-57a) was not processed!								
Cadmium (m-58a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	5	16	0	16	100.00%		
Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!								
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!								
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).								
The data set for variable Cadmium (m-58a) was not processed!								
Cadmium (m-62a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	5	16	0	16	100.00%		
Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!								
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!								
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).								
The data set for variable Cadmium (m-62a) was not processed!								
Chromium (m-56a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	1	20	16	4	20.00%		

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%			
	Number	Minimum	Maximum	Mean	Median	SD			
Statistics (Non-Detects Only)	4	5.0000E-4	0.01	0.00375	0.00225	0.00448			
Statistics (Non-Detects Only)	16	5.1000E-4	0.076	0.0134	0.0065	0.019			
Statistics (All: NDs treated as DL value)	20	5.0000E-4	0.076	0.0115	0.00575	0.0174			
Statistics (All: NDs treated as DL/2 value)	20	2.5000E-4	0.076	0.0111	0.0051	0.0175			
Statistics (Normal ROS Imputed Data)	20	-0.0256	0.076	0.00822	0.0049	0.0206			
Statistics (Gamma ROS Imputed Data)	20	5.1000E-4	0.076	0.0127	0.00885	0.0169			
Statistics (Lognormal ROS Imputed Data)	20	3.2075E-4	0.076	0.011	0.0049	0.0176			
	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV			
Statistics (Non-Detects Only)	0.865	0.744	0.0155	-4.989	1.232	-0.247			
Statistics (NDs = DL)	0.755	0.675	0.0152	-5.258	1.365	-0.26			
Statistics (NDs = DL/2)	0.677	0.608	0.0164	-5.397	1.502	-0.278			
Statistics (Gamma ROS Estimates)	1.044	0.921	0.0122	-4.913	1.106	-0.225			
Statistics (Lognormal ROS Estimates)	--	--	--	-5.397	1.431	-0.265			
Normal GOF Test Results									
	No NDs	NDs = DL	NDs = DL/2	Normal ROS					
Correlation Coefficient R	0.785	0.765	0.761	0.882					
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)						
Shapiro-Wilk (Detects Only)	0.639	0.887	Data Not Normal						
Shapiro-Wilk (NDs = DL)	0.608	0.905	Data Not Normal						
Shapiro-Wilk (NDs = DL/2)	0.602	0.905	Data Not Normal						
Shapiro-Wilk (Normal ROS Estimates)	0.807	0.905	Data Not Normal						
Lilliefors (Detects Only)	0.336	0.213	Data Not Normal						
Lilliefors (NDs = DL)	0.334	0.192	Data Not Normal						
Lilliefors (NDs = DL/2)	0.341	0.192	Data Not Normal						
Lilliefors (Normal ROS Estimates)	0.279	0.192	Data Not Normal						
Gamma GOF Test Results									
	No NDs	NDs = DL	NDs = DL/2	Gamma ROS					
Correlation Coefficient R	0.959	0.954	0.958	0.931					
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)						

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%			
Anderson-Darling (Detects Only)	0.541	0.769							
Kolmogorov-Smirnov (Detects Only)	0.23	0.222	Detected Data appear Approximate Gamma Distribution						
Anderson-Darling (NDs = DL)	0.542	0.779							
Kolmogorov-Smirnov (NDs = DL)	0.192	0.201	Data Appear Gamma Distributed						
Anderson-Darling (NDs = DL/2)	0.483	0.786							
Kolmogorov-Smirnov (NDs = DL/2)	0.193	0.202	Data Appear Gamma Distributed						
Anderson-Darling (Gamma ROS Estimates)	0.714	0.767							
Kolmogorov-Smirnov (Gamma ROS Est.)	0.261	0.199	Detected Data appear Approximate Gamma Distribution						
Lognormal GOF Test Results									
	No NDs	NDs = DL	NDs = DL/2	Log ROS					
Correlation Coefficient R	0.985	0.977	0.979	0.99					
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)						
Shapiro-Wilk (Detects Only)	0.979	0.887	Data Appear Lognormal						
Shapiro-Wilk (NDs = DL)	0.95	0.905	Data Appear Lognormal						
Shapiro-Wilk (NDs = DL/2)	0.957	0.905	Data Appear Lognormal						
Shapiro-Wilk (Lognormal ROS Estimates)	0.977	0.905	Data Appear Lognormal						
Lilliefors (Detects Only)	0.15	0.213	Data Appear Lognormal						
Lilliefors (NDs = DL)	0.127	0.192	Data Appear Lognormal						
Lilliefors (NDs = DL/2)	0.13	0.192	Data Appear Lognormal						
Lilliefors (Lognormal ROS Estimates)	0.118	0.192	Data Appear Lognormal						
Note: Substitution methods such as DL or DL/2 are not recommended.									
Chromium (m-57a)									
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs			
Raw Statistics	21	1	20	17	3	15.00%			
	Number	Minimum	Maximum	Mean	Median	SD			
Statistics (Non-Detects Only)	3	5.0000E-4	0.01	0.00517	0.005	0.00475			
Statistics (Non-Detects Only)	17	6.6000E-4	0.045	0.0192	0.016	0.015			
Statistics (All: NDs treated as DL value)	20	5.0000E-4	0.045	0.0171	0.0135	0.0148			
Statistics (All: NDs treated as DL/2 value)	20	2.5000E-4	0.045	0.0167	0.0135	0.0151			
Statistics (Normal ROS Imputed Data)	20	-0.0179	0.045	0.0154	0.0135	0.0169			

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%			
Statistics (Gamma ROS Imputed Data)	20	6.6000E-4	0.045	0.0178	0.0135	0.0142			
Statistics (Lognormal ROS Imputed Data)	20	4.6293E-4	0.045	0.0166	0.0135	0.0152			
	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV			
Statistics (Non-Detects Only)	1.05	0.904	0.0183	-4.499	1.345	-0.299			
Statistics (NDs = DL)	0.923	0.818	0.0185	-4.699	1.422	-0.303			
Statistics (NDs = DL/2)	0.829	0.738	0.0202	-4.803	1.528	-0.318			
Statistics (Gamma ROS Estimates)	1.163	1.022	0.0153	-4.515	1.235	-0.273			
Statistics (Lognormal ROS Estimates)	--	--	--	-4.824	1.496	-0.31			
Normal GOF Test Results									
	No NDs	NDs = DL	NDs = DL/2	Normal ROS					
Correlation Coefficient R	0.973	0.959	0.953	0.982					
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)						
Shapiro-Wilk (Detects Only)	0.925	0.892	Data Appear Normal						
Shapiro-Wilk (NDs = DL)	0.902	0.905	Data Not Normal						
Shapiro-Wilk (NDs = DL/2)	0.89	0.905	Data Not Normal						
Shapiro-Wilk (Normal ROS Estimates)	0.958	0.905	Data Appear Normal						
Lilliefors (Detects Only)	0.137	0.207	Data Appear Normal						
Lilliefors (NDs = DL)	0.144	0.192	Data Appear Normal						
Lilliefors (NDs = DL/2)	0.182	0.192	Data Appear Normal						
Lilliefors (Normal ROS Estimates)	0.132	0.192	Data Appear Normal						
Gamma GOF Test Results									
	No NDs	NDs = DL	NDs = DL/2	Gamma ROS					
Correlation Coefficient R	0.931	0.943	0.935	0.956					
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)						
Anderson-Darling (Detects Only)	0.434	0.765							
Kolmogorov-Smirnov (Detects Only)	0.125	0.215	Detected Data Appear Gamma Distributed						
Anderson-Darling (NDs = DL)	0.358	0.771							
Kolmogorov-Smirnov (NDs = DL)	0.104	0.2	Data Appear Gamma Distributed						
Anderson-Darling (NDs = DL/2)	0.365	0.776							
Kolmogorov-Smirnov (NDs = DL/2)	0.111	0.201	Data Appear Gamma Distributed						

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Anderson-Darling (Gamma ROS Estimates)	0.307	0.765						
Kolmogorov-Smirnov (Gamma ROS Est.)	0.103	0.199	Data Appear Gamma Distributed					
Lognormal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Log ROS				
Correlation Coefficient R	0.938	0.95	0.955	0.958				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.869	0.892	Data Not Lognormal					
Shapiro-Wilk (NDs = DL)	0.89	0.905	Data Not Lognormal					
Shapiro-Wilk (NDs = DL/2)	0.903	0.905	Data Not Lognormal					
Shapiro-Wilk (Lognormal ROS Estimates)	0.901	0.905	Data Not Lognormal					
Lilliefors (Detects Only)	0.176	0.207	Data Appear Lognormal					
Lilliefors (NDs = DL)	0.137	0.192	Data Appear Lognormal					
Lilliefors (NDs = DL/2)	0.154	0.192	Data Appear Lognormal					
Lilliefors (Lognormal ROS Estimates)	0.162	0.192	Data Appear Lognormal					
Note: Substitution methods such as DL or DL/2 are not recommended.								
Chromium (m-58a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	1	20	8	12	60.00%		
	Number	Minimum	Maximum	Mean	Median	SD		
Statistics (Non-Detects Only)	12	5.0000E-4	0.01	0.00229	0.001	0.00282		
Statistics (Non-Detects Only)	8	5.2000E-4	0.0033	0.00151	9.8500E-4	0.00109		
Statistics (All: NDs treated as DL value)	20	5.0000E-4	0.01	0.00198	0.001	0.00228		
Statistics (All: NDs treated as DL/2 value)	20	2.5000E-4	0.005	0.00129	7.3000E-4	0.00127		
Statistics (Normal ROS Imputed Data)	20	-0.00155	0.0033	5.3873E-4	5.1410E-4	0.00121		
Statistics (Gamma ROS Imputed Data)	20	5.2000E-4	0.01	0.0066	0.01	0.00432		
Statistics (Lognormal ROS Imputed Data)	20	1.5716E-4	0.0033	8.8099E-4	6.2021E-4	8.6005E-4		
	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
Statistics (Non-Detects Only)	2.409	1.589	6.2517E-4	-6.72	0.706	-0.105		
Statistics (NDs = DL)	1.359	1.188	0.00146	-6.637	0.86	-0.13		

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Statistics (NDs = DL/2)	1.394	1.218	9.2541E-4	-7.053	0.901	-0.128		
Statistics (Gamma ROS Estimates)	1.302	1.14	0.00507	-5.451	1.146	-0.21		
Statistics (Lognormal ROS Estimates)	--	--	--	-7.365	0.802	-0.109		
Normal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Normal ROS				
Correlation Coefficient R	0.915	0.799	0.877	0.961				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.821	0.818	Data Appear Normal					
Shapiro-Wilk (NDs = DL)	0.656	0.905	Data Not Normal					
Shapiro-Wilk (NDs = DL/2)	0.773	0.905	Data Not Normal					
Shapiro-Wilk (Normal ROS Estimates)	0.928	0.905	Data Appear Normal					
Lilliefors (Detects Only)	0.304	0.283	Data Not Normal					
Lilliefors (NDs = DL)	0.316	0.192	Data Not Normal					
Lilliefors (NDs = DL/2)	0.29	0.192	Data Not Normal					
Lilliefors (Normal ROS Estimates)	0.202	0.192	Data Not Normal					
Gamma GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
Correlation Coefficient R	0.958	0.95	0.983	0.683				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Anderson-Darling (Detects Only)	0.492	0.723						
Kolmogorov-Smirnov (Detects Only)	0.27	0.297	Detected Data Appear Gamma Distributed					
Anderson-Darling (NDs = DL)	1.33	0.761						
Kolmogorov-Smirnov (NDs = DL)	0.31	0.198	Data Not Gamma Distributed					
Anderson-Darling (NDs = DL/2)	0.906	0.76						
Kolmogorov-Smirnov (NDs = DL/2)	0.22	0.198	Data Not Gamma Distributed					
Anderson-Darling (Gamma ROS Estimates)	2.758	0.762						
Kolmogorov-Smirnov (Gamma ROS Est.)	0.387	0.198	Data Not Gamma Distributed					
Lognormal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Log ROS				

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Correlation Coefficient R	0.962	0.945	0.968	0.978				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.903	0.818	Data Appear Lognormal					
Shapiro-Wilk (NDs = DL)	0.887	0.905	Data Not Lognormal					
Shapiro-Wilk (NDs = DL/2)	0.925	0.905	Data Appear Lognormal					
Shapiro-Wilk (Lognormal ROS Estimates)	0.955	0.905	Data Appear Lognormal					
Lilliefors (Detects Only)	0.23	0.283	Data Appear Lognormal					
Lilliefors (NDs = DL)	0.274	0.192	Data Not Lognormal					
Lilliefors (NDs = DL/2)	0.192	0.192	Data Not Lognormal					
Lilliefors (Lognormal ROS Estimates)	0.155	0.192	Data Appear Lognormal					
Note: Substitution methods such as DL or DL/2 are not recommended.								
Chromium (m-62a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	2	19	10	9	47.37%		
	Number	Minimum	Maximum	Mean	Median	SD		
Statistics (Non-Detects Only)	9	5.0000E-4	0.01	0.00269	0.001	0.00302		
Statistics (Non-Detects Only)	10	6.3000E-4	0.0053	0.00164	0.00125	0.00136		
Statistics (All: NDs treated as DL value)	19	5.0000E-4	0.01	0.00213	0.0011	0.00229		
Statistics (All: NDs treated as DL/2 value)	19	2.5000E-4	0.0053	0.0015	0.001	0.0014		
Statistics (Normal ROS Imputed Data)	19	-0.00104	0.0053	0.00106	9.6000E-4	0.00125		
Statistics (Gamma ROS Imputed Data)	19	6.3000E-4	0.01	0.0056	0.0053	0.0044		
Statistics (Lognormal ROS Imputed Data)	19	3.4159E-4	0.0053	0.00122	9.6000E-4	0.00107		
	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
Statistics (Non-Detects Only)	2.712	1.965	6.0315E-4	-6.611	0.599	-0.0906		
Statistics (NDs = DL)	1.621	1.4	0.00132	-6.489	0.77	-0.119		
Statistics (NDs = DL/2)	1.745	1.504	8.5864E-4	-6.817	0.79	-0.116		
Statistics (Gamma ROS Estimates)	1.191	1.038	0.0047	-5.661	1.113	-0.197		
Statistics (Lognormal ROS Estimates)	--	--	--	-6.905	0.589	-0.0853		
Normal GOF Test Results								

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
	No NDs	NDs = DL	NDs = DL/2	Normal ROS				
Correlation Coefficient R	0.798	0.797	0.845	0.859				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.664	0.842	Data Not Normal					
Shapiro-Wilk (NDs = DL)	0.654	0.901	Data Not Normal					
Shapiro-Wilk (NDs = DL/2)	0.72	0.901	Data Not Normal					
Shapiro-Wilk (Normal ROS Estimates)	0.773	0.901	Data Not Normal					
Lilliefors (Detects Only)	0.294	0.262	Data Not Normal					
Lilliefors (NDs = DL)	0.313	0.197	Data Not Normal					
Lilliefors (NDs = DL/2)	0.254	0.197	Data Not Normal					
Lilliefors (Normal ROS Estimates)	0.225	0.197	Data Not Normal					
Gamma GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
Correlation Coefficient R	0.905	0.94	0.944	0.763				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Anderson-Darling (Detects Only)	0.657	0.733						
Kolmogorov-Smirnov (Detects Only)	0.195	0.269	Detected Data Appear Gamma Distributed					
Anderson-Darling (NDs = DL)	1.286	0.756						
Kolmogorov-Smirnov (NDs = DL)	0.217	0.202	Data Not Gamma Distributed					
Anderson-Darling (NDs = DL/2)	0.64	0.754						
Kolmogorov-Smirnov (NDs = DL/2)	0.153	0.201	Data Appear Gamma Distributed					
Anderson-Darling (Gamma ROS Estimates)	2.089	0.765						
Kolmogorov-Smirnov (Gamma ROS Est.)	0.314	0.203	Data Not Gamma Distributed					
Lognormal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Log ROS				
Correlation Coefficient R	0.947	0.952	0.979	0.949				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.912	0.842	Data Appear Lognormal					
Shapiro-Wilk (NDs = DL)	0.909	0.901	Data Appear Lognormal					
Shapiro-Wilk (NDs = DL/2)	0.958	0.901	Data Appear Lognormal					

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Shapiro-Wilk (Lognormal ROS Estimates)	0.921	0.901	Data Appear Lognormal					
Lilliefors (Detects Only)	0.154	0.262	Data Appear Lognormal					
Lilliefors (NDs = DL)	0.189	0.197	Data Appear Lognormal					
Lilliefors (NDs = DL/2)	0.118	0.197	Data Appear Lognormal					
Lilliefors (Lognormal ROS Estimates)	0.193	0.197	Data Appear Lognormal					
Note: Substitution methods such as DL or DL/2 are not recommended.								
Cobalt (m-56a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	1	20	13	7	35.00%		
	Number	Minimum	Maximum	Mean	Median	SD		
Statistics (Non-Detects Only)	7	5.0000E-4	0.0025	0.00107	5.0000E-4	8.3808E-4		
Statistics (Non-Detects Only)	13	6.1000E-4	0.002	0.00105	0.0012	4.0311E-4		
Statistics (All: NDs treated as DL value)	20	5.0000E-4	0.0025	0.00106	8.8500E-4	5.6969E-4		
Statistics (All: NDs treated as DL/2 value)	20	2.5000E-4	0.002	8.7000E-4	7.6000E-4	4.7055E-4		
Statistics (Normal ROS Imputed Data)	20	-7.975E-5	0.002	8.2093E-4	7.6000E-4	4.9044E-4		
Statistics (Gamma ROS Imputed Data)	20	6.1000E-4	0.01	0.00418	0.0013	0.00439		
Statistics (Lognormal ROS Imputed Data)	20	3.4717E-4	0.002	8.7862E-4	7.5806E-4	4.1144E-4		
	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
Statistics (Non-Detects Only)	7.881	6.114	1.3323E-4	-6.924	0.372	-0.0538		
Statistics (NDs = DL)	4.177	3.584	2.5319E-4	-6.976	0.503	-0.0722		
Statistics (NDs = DL/2)	3.065	2.639	2.8382E-4	-7.219	0.647	-0.0896		
Statistics (Gamma ROS Estimates)	0.918	0.813	0.00456	-6.112	1.173	-0.192		
Statistics (Lognormal ROS Estimates)	--	--	--	-7.135	0.453	-0.0634		
Normal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Normal ROS				
Correlation Coefficient R	0.923	0.927	0.961	0.976				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.855	0.866	Data Not Normal					
Shapiro-Wilk (NDs = DL)	0.855	0.905	Data Not Normal					

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Shapiro-Wilk (NDs = DL/2)	0.919	0.905	Data Appear Normal					
Shapiro-Wilk (Normal ROS Estimates)	0.959	0.905	Data Appear Normal					
Lilliefors (Detects Only)	0.218	0.234	Data Appear Normal					
Lilliefors (NDs = DL)	0.193	0.192	Data Not Normal					
Lilliefors (NDs = DL/2)	0.158	0.192	Data Appear Normal					
Lilliefors (Normal ROS Estimates)	0.156	0.192	Data Appear Normal					
Gamma GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
Correlation Coefficient R	0.947	0.974	0.958	0.814				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Anderson-Darling (Detects Only)	0.77	0.735						
Kolmogorov-Smirnov (Detects Only)	0.23	0.237	Detected Data appear Approximate Gamma Distribution					
Anderson-Darling (NDs = DL)	0.667	0.745						
Kolmogorov-Smirnov (NDs = DL)	0.173	0.195	Data Appear Gamma Distributed					
Anderson-Darling (NDs = DL/2)	0.731	0.747						
Kolmogorov-Smirnov (NDs = DL/2)	0.183	0.195	Data Appear Gamma Distributed					
Anderson-Darling (Gamma ROS Estimates)	2.479	0.772						
Kolmogorov-Smirnov (Gamma ROS Est.)	0.314	0.2	Data Not Gamma Distributed					
Lognormal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Log ROS				
Correlation Coefficient R	0.945	0.967	0.945	0.98				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.885	0.866	Data Appear Lognormal					
Shapiro-Wilk (NDs = DL)	0.92	0.905	Data Appear Lognormal					
Shapiro-Wilk (NDs = DL/2)	0.881	0.905	Data Not Lognormal					
Shapiro-Wilk (Lognormal ROS Estimates)	0.959	0.905	Data Appear Lognormal					
Lilliefors (Detects Only)	0.241	0.234	Data Not Lognormal					
Lilliefors (NDs = DL)	0.149	0.192	Data Appear Lognormal					
Lilliefors (NDs = DL/2)	0.177	0.192	Data Appear Lognormal					
Lilliefors (Lognormal ROS Estimates)	0.167	0.192	Data Appear Lognormal					

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Note: Substitution methods such as DL or DL/2 are not recommended.								
Cobalt (m-57a)								
Raw Statistics								
Number of Valid Observations	20							
Number of Missing Observations	1							
Number of Distinct Observations	18							
Minimum	0.0028							
Maximum	0.0088							
Mean of Raw Data	0.00675							
Standard Deviation of Raw Data	0.00177							
Khat	12.45							
Theta hat	5.4155E-4							
Kstar	10.62							
Theta star	6.3512E-4							
Mean of Log Transformed Data	-5.04							
Standard Deviation of Log Transformed Data	0.311							
Normal GOF Test Results								
Correlation Coefficient R	0.957							
Shapiro Wilk Test Statistic	0.906							
Shapiro Wilk Critical (0.05) Value	0.905							
Approximate Shapiro Wilk P Value	0.0606							
Lilliefors Test Statistic	0.215							
Lilliefors Critical (0.05) Value	0.192							
Data appear Approximate Normal at (0.05) Significance Level								
Gamma GOF Test Results								
Correlation Coefficient R	0.919							
A-D Test Statistic	0.936							
A-D Critical (0.05) Value	0.742							
K-S Test Statistic	0.233							
K-S Critical(0.05) Value	0.194							
Data not Gamma Distributed at (0.05) Significance Level								

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Lognormal GOF Test Results								
Correlation Coefficient R		0.926						
Shapiro Wilk Test Statistic		0.856						
Shapiro Wilk Critical (0.05) Value		0.905						
Approximate Shapiro Wilk P Value		0.00609						
Lilliefors Test Statistic		0.232						
Lilliefors Critical (0.05) Value		0.192						
Data not Lognormal at (0.05) Significance Level								
Cobalt (m-58a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	1	20	6	14	70.00%		
	Number	Minimum	Maximum	Mean	Median	SD		
Statistics (Non-Detects Only)	14	5.0000E-4	0.01	0.00146	5.0000E-4	0.00254		
Statistics (Non-Detects Only)	6	5.1000E-4	0.0011	8.2333E-4	8.8000E-4	2.4196E-4		
Statistics (All: NDs treated as DL value)	20	5.0000E-4	0.01	0.00127	5.0500E-4	0.00212		
Statistics (All: NDs treated as DL/2 value)	20	2.5000E-4	0.005	7.5950E-4	3.7500E-4	0.00106		
Statistics (Normal ROS Imputed Data)	20	-3.272E-4	0.0011	3.8337E-4	3.7699E-4	3.7563E-4		
Statistics (Gamma ROS Imputed Data)	20	5.1000E-4	0.01	0.00725	0.01	0.00432		
Statistics (Lognormal ROS Imputed Data)	20	1.8273E-4	0.0011	5.0543E-4	4.4806E-4	2.5971E-4		
	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
Statistics (Non-Detects Only)	12.67	6.444	6.5004E-5	-7.142	0.318	-0.0445		
Statistics (NDs = DL)	1.222	1.072	0.00104	-7.129	0.771	-0.108		
Statistics (NDs = DL/2)	1.3	1.139	5.8404E-4	-7.614	0.833	-0.109		
Statistics (Gamma ROS Estimates)	1.28	1.121	0.00566	-5.366	1.204	-0.224		
Statistics (Lognormal ROS Estimates)	--	--	--	-7.702	0.48	-0.0623		
Normal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Normal ROS				
Correlation Coefficient R	0.965	0.612	0.688	0.983				

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.909	0.788	Data Appear Normal					
Shapiro-Wilk (NDs = DL)	0.402	0.905	Data Not Normal					
Shapiro-Wilk (NDs = DL/2)	0.499	0.905	Data Not Normal					
Shapiro-Wilk (Normal ROS Estimates)	0.964	0.905	Data Appear Normal					
Lilliefors (Detects Only)	0.228	0.325	Data Appear Normal					
Lilliefors (NDs = DL)	0.382	0.192	Data Not Normal					
Lilliefors (NDs = DL/2)	0.315	0.192	Data Not Normal					
Lilliefors (Normal ROS Estimates)	0.138	0.192	Data Appear Normal					
Gamma GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
Correlation Coefficient R	0.944	0.817	0.86	0.592				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Anderson-Darling (Detects Only)	0.407	0.698						
Kolmogorov-Smirnov (Detects Only)	0.256	0.332	Detected Data Appear Gamma Distributed					
Anderson-Darling (NDs = DL)	3.154	0.763						
Kolmogorov-Smirnov (NDs = DL)	0.29	0.199	Data Not Gamma Distributed					
Anderson-Darling (NDs = DL/2)	1.85	0.762						
Kolmogorov-Smirnov (NDs = DL/2)	0.275	0.198	Data Not Gamma Distributed					
Anderson-Darling (Gamma ROS Estimates)	4.116	0.762						
Kolmogorov-Smirnov (Gamma ROS Est.)	0.45	0.198	Data Not Gamma Distributed					
Lognormal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Log ROS				
Correlation Coefficient R	0.954	0.818	0.891	0.98				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.888	0.788	Data Appear Lognormal					
Shapiro-Wilk (NDs = DL)	0.68	0.905	Data Not Lognormal					
Shapiro-Wilk (NDs = DL/2)	0.793	0.905	Data Not Lognormal					
Shapiro-Wilk (Lognormal ROS Estimates)	0.957	0.905	Data Appear Lognormal					
Lilliefors (Detects Only)	0.239	0.325	Data Appear Lognormal					
Lilliefors (NDs = DL)	0.271	0.192	Data Not Lognormal					

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Lilliefors (NDs = DL/2)	0.293	0.192	Data Not Lognormal					
Lilliefors (Lognormal ROS Estimates)	0.15	0.192	Data Appear Lognormal					
Note: Substitution methods such as DL or DL/2 are not recommended.								
Cobalt (m-62a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	2	19	4	15	78.95%		
	Number	Minimum	Maximum	Mean	Median	SD		
Statistics (Non-Detects Only)	15	5.0000E-4	0.0025	8.0000E-4	5.0000E-4	6.2106E-4		
Statistics (Non-Detects Only)	4	4.6000E-4	0.0022	0.0011	8.7000E-4	8.0482E-4		
Statistics (All: NDs treated as DL value)	19	4.6000E-4	0.0025	8.6316E-4	5.0000E-4	6.5096E-4		
Statistics (All: NDs treated as DL/2 value)	19	2.5000E-4	0.0022	5.4737E-4	2.5000E-4	5.1858E-4		
Statistics (Normal ROS Imputed Data)	19	-7.255E-4	0.0022	3.7694E-4	3.5627E-4	6.3301E-4		
Statistics (Gamma ROS Imputed Data)	19	4.6000E-4	0.01	0.00813	0.01	0.00374		
Statistics (Lognormal ROS Imputed Data)	19	1.5694E-4	0.0022	5.5016E-4	4.4176E-4	4.5951E-4		
	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
Statistics (Non-Detects Only)	2.645	0.828	4.1589E-4	-7.013	0.729	-0.104		
Statistics (NDs = DL)	2.764	2.363	3.1224E-4	-7.247	0.58	-0.0801		
Statistics (NDs = DL/2)	1.914	1.647	2.8594E-4	-7.794	0.702	-0.0901		
Statistics (Gamma ROS Estimates)	1.818	1.566	0.00447	-5.112	1.052	-0.206		
Statistics (Lognormal ROS Estimates)	--	--	--	-7.705	0.597	-0.0775		
Normal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Normal ROS				
Correlation Coefficient R	0.941	0.799	0.799	0.95				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.878	0.748	Data Appear Normal					
Shapiro-Wilk (NDs = DL)	0.639	0.901	Data Not Normal					
Shapiro-Wilk (NDs = DL/2)	0.65	0.901	Data Not Normal					
Shapiro-Wilk (Normal ROS Estimates)	0.923	0.901	Data Appear Normal					
Lilliefors (Detects Only)	0.257	0.375	Data Appear Normal					

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Lilliefors (NDs = DL)	0.374	0.197	Data Not Normal					
Lilliefors (NDs = DL/2)	0.296	0.197	Data Not Normal					
Lilliefors (Normal ROS Estimates)	0.173	0.197	Data Appear Normal					
Gamma GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
Correlation Coefficient R	0.993	0.907	0.936	0.541				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Anderson-Darling (Detects Only)	0.346	0.66						
Kolmogorov-Smirnov (Detects Only)	0.293	0.397	Detected Data Appear Gamma Distributed					
Anderson-Darling (NDs = DL)	2.998	0.749						
Kolmogorov-Smirnov (NDs = DL)	0.381	0.2	Data Not Gamma Distributed					
Anderson-Darling (NDs = DL/2)	2.309	0.753						
Kolmogorov-Smirnov (NDs = DL/2)	0.338	0.201	Data Not Gamma Distributed					
Anderson-Darling (Gamma ROS Estimates)	4.663	0.754						
Kolmogorov-Smirnov (Gamma ROS Est.)	0.493	0.201	Data Not Gamma Distributed					
Lognormal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Log ROS				
Correlation Coefficient R	0.966	0.832	0.867	0.962				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.918	0.748	Data Appear Lognormal					
Shapiro-Wilk (NDs = DL)	0.685	0.901	Data Not Lognormal					
Shapiro-Wilk (NDs = DL/2)	0.744	0.901	Data Not Lognormal					
Shapiro-Wilk (Lognormal ROS Estimates)	0.94	0.901	Data Appear Lognormal					
Lilliefors (Detects Only)	0.258	0.375	Data Appear Lognormal					
Lilliefors (NDs = DL)	0.368	0.197	Data Not Lognormal					
Lilliefors (NDs = DL/2)	0.341	0.197	Data Not Lognormal					
Lilliefors (Lognormal ROS Estimates)	0.17	0.197	Data Appear Lognormal					
Note: Substitution methods such as DL or DL/2 are not recommended.								
Fluoride (m-56a)								

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	1	20	8	12	60.00%		
	Number	Minimum	Maximum	Mean	Median	SD		
Statistics (Non-Detects Only)	12	0.4	0.8	0.5	0.4	0.181		
Statistics (Non-Detects Only)	8	0.4	0.49	0.435	0.425	0.0342		
Statistics (All: NDs treated as DL value)	20	0.4	0.8	0.474	0.4	0.143		
Statistics (All: NDs treated as DL/2 value)	20	0.2	0.49	0.324	0.4	0.118		
Statistics (Normal ROS Imputed Data)	20	0.266	0.49	0.379	0.377	0.0608		
Statistics (Gamma ROS Imputed Data)	20	0.276	0.49	0.381	0.378	0.0582		
Statistics (Lognormal ROS Imputed Data)	20	0.295	0.49	0.386	0.38	0.0532		
	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
Statistics (Non-Detects Only)	188.2	117.7	0.00231	-0.835	0.0776	-0.0929		
Statistics (NDs = DL)	15.19	12.94	0.0312	-0.78	0.248	-0.317		
Statistics (NDs = DL/2)	7.44	6.357	0.0435	-1.196	0.388	-0.324		
Statistics (Gamma ROS Estimates)	44.57	37.92	0.00855	-0.975	0.155	-0.159		
Statistics (Lognormal ROS Estimates)	--	--	--	-0.962	0.138	-0.143		
Normal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Normal ROS				
Correlation Coefficient R	0.96	0.746	0.884	0.997				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.9	0.818	Data Appear Normal					
Shapiro-Wilk (NDs = DL)	0.554	0.905	Data Not Normal					
Shapiro-Wilk (NDs = DL/2)	0.76	0.905	Data Not Normal					
Shapiro-Wilk (Normal ROS Estimates)	0.987	0.905	Data Appear Normal					
Lilliefors (Detects Only)	0.183	0.283	Data Appear Normal					
Lilliefors (NDs = DL)	0.321	0.192	Data Not Normal					
Lilliefors (NDs = DL/2)	0.304	0.192	Data Not Normal					
Lilliefors (Normal ROS Estimates)	0.0842	0.192	Data Appear Normal					
Gamma GOF Test Results								

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
	No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
Correlation Coefficient R	0.963	0.798	0.878	0.995				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Anderson-Darling (Detects Only)	0.405	0.715						
Kolmogorov-Smirnov (Detects Only)	0.178	0.294	Detected Data Appear Gamma Distributed					
Anderson-Darling (NDs = DL)	3.872	0.741						
Kolmogorov-Smirnov (NDs = DL)	0.313	0.194	Data Not Gamma Distributed					
Anderson-Darling (NDs = DL/2)	2.579	0.744						
Kolmogorov-Smirnov (NDs = DL/2)	0.313	0.194	Data Not Gamma Distributed					
Anderson-Darling (Gamma ROS Estimates)	0.119	0.74						
Kolmogorov-Smirnov (Gamma ROS Est.)	0.095	0.193	Data Appear Gamma Distributed					
Lognormal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Log ROS				
Correlation Coefficient R	0.962	0.771	0.866	0.997				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.904	0.818	Data Appear Lognormal					
Shapiro-Wilk (NDs = DL)	0.59	0.905	Data Not Lognormal					
Shapiro-Wilk (NDs = DL/2)	0.727	0.905	Data Not Lognormal					
Shapiro-Wilk (Lognormal ROS Estimates)	0.986	0.905	Data Appear Lognormal					
Lilliefors (Detects Only)	0.171	0.283	Data Appear Lognormal					
Lilliefors (NDs = DL)	0.302	0.192	Data Not Lognormal					
Lilliefors (NDs = DL/2)	0.314	0.192	Data Not Lognormal					
Lilliefors (Lognormal ROS Estimates)	0.0791	0.192	Data Appear Lognormal					
Note: Substitution methods such as DL or DL/2 are not recommended.								
Fluoride (m-57a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	1	20	2	18	90.00%		
	Number	Minimum	Maximum	Mean	Median	SD		
Statistics (Non-Detects Only)	18	0.4	0.8	0.444	0.4	0.129		

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%			
Statistics (Non-Detects Only)	2	0.42	0.53	0.475	0.475	0.0778			
Statistics (All: NDs treated as DL value)	20	0.4	0.8	0.448	0.4	0.124			
Statistics (All: NDs treated as DL/2 value)	20	0.2	0.53	0.248	0.2	0.101			
Statistics (Normal ROS Imputed Data)	20	-0.573	0.53	-0.0443	-0.0504	0.284			
Statistics (Gamma ROS Imputed Data)	20	N/A	N/A	N/A	N/A	N/A			
Statistics (Lognormal ROS Imputed Data)	20	0.0515	0.53	0.187	0.155	0.121			
	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV			
Statistics (Non-Detects Only)	N/A	N/A	N/A	N/A	N/A	N/A			
Statistics (NDs = DL)	19.11	16.28	0.0234	-0.83	0.217	-0.261			
Statistics (NDs = DL/2)	8.791	7.506	0.0282	-1.454	0.323	-0.222			
Statistics (Gamma ROS Estimates)	N/A	N/A	N/A	N/A	N/A	N/A			
Statistics (Lognormal ROS Estimates)	--	--	--	-1.849	0.601	-0.325			
Normal GOF Test Results									
	No NDs	NDs = DL	NDs = DL/2	Normal ROS					
Correlation Coefficient R	1	0.649	0.725	0.998					
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)						
Shapiro-Wilk (NDs = DL)	0.432	0.905	Data Not Normal						
Shapiro-Wilk (NDs = DL/2)	0.532	0.905	Data Not Normal						
Shapiro-Wilk (Normal ROS Estimates)	0.993	0.905	Data Appear Normal						
Lilliefors (Detects Only)	N/A	N/A							
Lilliefors (NDs = DL)	0.449	0.192	Data Not Normal						
Lilliefors (NDs = DL/2)	0.482	0.192	Data Not Normal						
Lilliefors (Normal ROS Estimates)	0.0562	0.192	Data Appear Normal						
Gamma GOF Test Results									
	No NDs	NDs = DL	NDs = DL/2	Gamma ROS					
Correlation Coefficient R	N/A	0.709	0.801	0.987					
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)						
Anderson-Darling (Detects Only)	N/A	N/A							
Kolmogorov-Smirnov (Detects Only)	N/A	N/A							
Anderson-Darling (NDs = DL)	5.427	0.741							

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Kolmogorov-Smirnov (NDs = DL)	0.457	0.194	Data Not Gamma Distributed					
Anderson-Darling (NDs = DL/2)	4.955	0.743						
Kolmogorov-Smirnov (NDs = DL/2)	0.49	0.194	Data Not Gamma Distributed					
Anderson-Darling (Gamma ROS Estimates)	N/A	0.74						
Kolmogorov-Smirnov (Gamma ROS Est.)	N/A	0.193						
Lognormal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Log ROS				
Correlation Coefficient R	1	0.662	0.725	N/A				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (NDs = DL)	0.448	0.905	Data Not Lognormal					
Shapiro-Wilk (NDs = DL/2)	0.527	0.905	Data Not Lognormal					
Shapiro-Wilk (Lognormal ROS Estimates)	0.993	0.905	Data Appear Lognormal					
Lilliefors (Detects Only)	N/A	N/A						
Lilliefors (NDs = DL)	0.454	0.192	Data Not Lognormal					
Lilliefors (NDs = DL/2)	0.485	0.192	Data Not Lognormal					
Lilliefors (Lognormal ROS Estimates)	0.0562	0.192	Data Appear Lognormal					
Note: Substitution methods such as DL or DL/2 are not recommended.								
Fluoride (m-58a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	1	20	1	19	95.00%		
Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!								
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).								
The data set for variable Fluoride (m-58a) was not processed!								
Fluoride (m-62a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Raw Statistics	21	1	20	0	20	100.00%		
Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!								
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!								
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).								
The data set for variable Fluoride (m-62a) was not processed!								
Lead (m-56a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	5	16	0	16	100.00%		
Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!								
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!								
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).								
The data set for variable Lead (m-56a) was not processed!								
Lead (m-57a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	5	16	2	14	87.50%		
	Number	Minimum	Maximum	Mean	Median	SD		
Statistics (Non-Detects Only)	14	5.0000E-4	0.01	0.0015	5.0000E-4	0.00253		
Statistics (Non-Detects Only)	2	2.1000E-4	8.6000E-4	5.3500E-4	5.3500E-4	4.5962E-4		
Statistics (All: NDs treated as DL value)	16	2.1000E-4	0.01	0.00138	5.0000E-4	0.00238		
Statistics (All: NDs treated as DL/2 value)	16	2.1000E-4	0.005	7.2313E-4	2.5000E-4	0.00118		
Statistics (Normal ROS Imputed Data)	16	-2.297E-4	8.6000E-4	2.5655E-4	2.5112E-4	2.5757E-4		
Statistics (Gamma ROS Imputed Data)	16	N/A	N/A	N/A	N/A	N/A		
Statistics (Lognormal ROS Imputed Data)	16	8.0909E-5	8.6000E-4	2.7210E-4	2.2959E-4	1.8427E-4		

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
Statistics (Non-Detects Only)	N/A	N/A	N/A	N/A	N/A	N/A		
Statistics (NDs = DL)	1.005	0.858	0.00137	-7.16	0.909	-0.127		
Statistics (NDs = DL/2)	1.071	0.912	6.7516E-4	-7.767	0.878	-0.113		
Statistics (Gamma ROS Estimates)	N/A	N/A	N/A	N/A	N/A	N/A		
Statistics (Lognormal ROS Estimates)	--	--	--	-8.367	0.559	-0.0668		
Normal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Normal ROS				
Correlation Coefficient R	1	0.649	0.659	0.978				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (NDs = DL)	0.452	0.887	Data Not Normal					
Shapiro-Wilk (NDs = DL/2)	0.462	0.887	Data Not Normal					
Shapiro-Wilk (Normal ROS Estimates)	0.971	0.887	Data Appear Normal					
Lilliefors (Detects Only)	N/A	N/A						
Lilliefors (NDs = DL)	0.376	0.213	Data Not Normal					
Lilliefors (NDs = DL/2)	0.332	0.213	Data Not Normal					
Lilliefors (Normal ROS Estimates)	0.133	0.213	Data Appear Normal					
Gamma GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
Correlation Coefficient R	N/A	0.86	0.865	0.437				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Anderson-Darling (Detects Only)	N/A	N/A						
Kolmogorov-Smirnov (Detects Only)	N/A	N/A						
Anderson-Darling (NDs = DL)	2.243	0.763						
Kolmogorov-Smirnov (NDs = DL)	0.322	0.221	Data Not Gamma Distributed					
Anderson-Darling (NDs = DL/2)	2.326	0.762						
Kolmogorov-Smirnov (NDs = DL/2)	0.347	0.221	Data Not Gamma Distributed					
Anderson-Darling (Gamma ROS Estimates)	N/A	0.736						
Kolmogorov-Smirnov (Gamma ROS Est.)	N/A	0.214						
Lognormal GOF Test Results								

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
	No NDs	NDs = DL	NDs = DL/2	Log ROS				
Correlation Coefficient R	1	0.874	0.845	N/A				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (NDs = DL)	0.787	0.887	Data Not Lognormal					
Shapiro-Wilk (NDs = DL/2)	0.724	0.887	Data Not Lognormal					
Shapiro-Wilk (Lognormal ROS Estimates)	0.971	0.887	Data Appear Lognormal					
Lilliefors (Detects Only)	N/A	N/A						
Lilliefors (NDs = DL)	0.311	0.213	Data Not Lognormal					
Lilliefors (NDs = DL/2)	0.351	0.213	Data Not Lognormal					
Lilliefors (Lognormal ROS Estimates)	0.133	0.213	Data Appear Lognormal					
Note: Substitution methods such as DL or DL/2 are not recommended.								
Lead (m-58a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	5	16	4	12	75.00%		
	Number	Minimum	Maximum	Mean	Median	SD		
Statistics (Non-Detects Only)	12	1.0000E-4	0.01	0.00159	5.0000E-4	0.00274		
Statistics (Non-Detects Only)	4	5.6000E-4	0.0011	7.5750E-4	6.8500E-4	2.4824E-4		
Statistics (All: NDs treated as DL value)	16	1.0000E-4	0.01	0.00138	5.3000E-4	0.00238		
Statistics (All: NDs treated as DL/2 value)	16	5.0000E-5	0.005	7.8625E-4	3.7500E-4	0.00118		
Statistics (Normal ROS Imputed Data)	16	-4.574E-4	0.0011	2.3653E-4	2.2485E-4	3.8572E-4		
Statistics (Gamma ROS Imputed Data)	16	5.6000E-4	0.01	0.00769	0.01	0.00413		
Statistics (Lognormal ROS Imputed Data)	16	1.6156E-4	0.0011	4.2867E-4	3.7674E-4	2.3561E-4		
	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
Statistics (Non-Detects Only)	13.53	3.548	5.6000E-5	-7.223	0.31	-0.0429		
Statistics (NDs = DL)	0.958	0.82	0.00144	-7.189	0.99	-0.138		
Statistics (NDs = DL/2)	1.026	0.875	7.6623E-4	-7.709	1.031	-0.134		
Statistics (Gamma ROS Estimates)	1.42	1.196	0.00541	-5.26	1.179	-0.224		
Statistics (Lognormal ROS Estimates)	--	--	--	-7.869	0.479	-0.0609		
Normal GOF Test Results								

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
	No NDs	NDs = DL	NDs = DL/2	Normal ROS				
Correlation Coefficient R	0.94	0.657	0.708	0.978				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.878	0.748	Data Appear Normal					
Shapiro-Wilk (NDs = DL)	0.462	0.887	Data Not Normal					
Shapiro-Wilk (NDs = DL/2)	0.531	0.887	Data Not Normal					
Shapiro-Wilk (Normal ROS Estimates)	0.965	0.887	Data Appear Normal					
Lilliefors (Detects Only)	0.25	0.375	Data Appear Normal					
Lilliefors (NDs = DL)	0.36	0.213	Data Not Normal					
Lilliefors (NDs = DL/2)	0.285	0.213	Data Not Normal					
Lilliefors (Normal ROS Estimates)	0.195	0.213	Data Appear Normal					
Gamma GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
Correlation Coefficient R	0.975	0.867	0.89	0.557				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Anderson-Darling (Detects Only)	0.366	0.657						
Kolmogorov-Smirnov (Detects Only)	0.285	0.395	Detected Data Appear Gamma Distributed					
Anderson-Darling (NDs = DL)	1.903	0.765						
Kolmogorov-Smirnov (NDs = DL)	0.269	0.222	Data Not Gamma Distributed					
Anderson-Darling (NDs = DL/2)	1.087	0.763						
Kolmogorov-Smirnov (NDs = DL/2)	0.233	0.221	Data Not Gamma Distributed					
Anderson-Darling (Gamma ROS Estimates)	3.752	0.756						
Kolmogorov-Smirnov (Gamma ROS Est.)	0.477	0.219	Data Not Gamma Distributed					
Lognormal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Log ROS				
Correlation Coefficient R	0.956	0.9	0.943	0.978				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.905	0.748	Data Appear Lognormal					
Shapiro-Wilk (NDs = DL)	0.841	0.887	Data Not Lognormal					

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Shapiro-Wilk (NDs = DL/2)	0.911	0.887	Data Appear Lognormal					
Shapiro-Wilk (Lognormal ROS Estimates)	0.964	0.887	Data Appear Lognormal					
Lilliefors (Detects Only)	0.254	0.375	Data Appear Lognormal					
Lilliefors (NDs = DL)	0.276	0.213	Data Not Lognormal					
Lilliefors (NDs = DL/2)	0.223	0.213	Data Not Lognormal					
Lilliefors (Lognormal ROS Estimates)	0.195	0.213	Data Appear Lognormal					
Note: Substitution methods such as DL or DL/2 are not recommended.								
Lead (m-62a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	5	16	0	16	100.00%		
Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!								
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!								
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).								
The data set for variable Lead (m-62a) was not processed!								
Lithium (m-56a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	4	17	0	17	100.00%		
Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!								
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!								
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).								
The data set for variable Lithium (m-56a) was not processed!								
Lithium (m-57a)								

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	4	17	0	17	100.00%		
Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!								
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!								
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).								
The data set for variable Lithium (m-57a) was not processed!								
Lithium (m-58a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	4	17	0	17	100.00%		
Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!								
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!								
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).								
The data set for variable Lithium (m-58a) was not processed!								
Lithium (m-62a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	4	17	0	17	100.00%		
Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!								
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!								
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).								
The data set for variable Lithium (m-62a) was not processed!								

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Mercury (m-56a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	5	16	0	16	100.00%		
Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!								
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!								
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).								
The data set for variable Mercury (m-56a) was not processed!								
Mercury (m-57a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	5	16	0	16	100.00%		
Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!								
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!								
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).								
The data set for variable Mercury (m-57a) was not processed!								
Mercury (m-58a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	5	16	0	16	100.00%		
Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!								
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!								
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).								
The data set for variable Mercury (m-58a) was not processed!								

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Mercury (m-62a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	5	16	0	16	100.00%		
Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!								
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!								
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).								
The data set for variable Mercury (m-62a) was not processed!								
Molybdenum (m-56a)								
Raw Statistics								
Number of Valid Observations	20							
Number of Missing Observations	1							
Number of Distinct Observations	17							
Minimum	0.0057							
Maximum	0.029							
Mean of Raw Data	0.0125							
Standard Deviation of Raw Data	0.00577							
Khat	6.319							
Theta hat	0.00199							
Kstar	5.404							
Theta star	0.00232							
Mean of Log Transformed Data	-4.46							
Standard Deviation of Log Transformed Data	0.397							
Normal GOF Test Results								
Correlation Coefficient R	0.903							
Shapiro Wilk Test Statistic	0.825							
Shapiro Wilk Critical (0.05) Value	0.905							

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Approximate Shapiro Wilk P Value		0.0015						
Lilliefors Test Statistic		0.219						
Lilliefors Critical (0.05) Value		0.192						
Data not Normal at (0.05) Significance Level								
Gamma GOF Test Results								
Correlation Coefficient R		0.958						
A-D Test Statistic		0.736						
A-D Critical (0.05) Value		0.744						
K-S Test Statistic		0.175						
K-S Critical(0.05) Value		0.194						
Data appear Gamma Distributed at (0.05) Significance Level								
Lognormal GOF Test Results								
Correlation Coefficient R		0.971						
Shapiro Wilk Test Statistic		0.948						
Shapiro Wilk Critical (0.05) Value		0.905						
Approximate Shapiro Wilk P Value		0.347						
Lilliefors Test Statistic		0.15						
Lilliefors Critical (0.05) Value		0.192						
Data appear Lognormal at (0.05) Significance Level								
Molybdenum (m-57a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	1	20	19	1	5.00%		
	Number	Minimum	Maximum	Mean	Median	SD		
Statistics (Non-Detects Only)	1	0.0025	0.0025	0.0025	0.0025	N/A		
Statistics (Non-Detects Only)	19	0.0011	0.022	0.00586	0.0046	0.00462		
Statistics (All: NDs treated as DL value)	20	0.0011	0.022	0.00569	0.0044	0.00456		
Statistics (All: NDs treated as DL/2 value)	20	0.0011	0.022	0.00563	0.0044	0.00462		
Statistics (Normal ROS Imputed Data)	20	-0.00183	0.022	0.00547	0.0044	0.00482		
Statistics (Gamma ROS Imputed Data)	20	0.0011	0.022	0.00607	0.00465	0.00459		
Statistics (Lognormal ROS Imputed Data)	20	0.0011	0.022	0.00563	0.0044	0.00461		

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
Statistics (Non-Detects Only)	2.59	2.216	0.00226	-5.345	0.637	-0.119		
Statistics (NDs = DL)	2.552	2.202	0.00223	-5.378	0.637	-0.118		
Statistics (NDs = DL/2)	2.306	1.994	0.00244	-5.412	0.689	-0.127		
Statistics (Gamma ROS Estimates)	2.617	2.258	0.00232	-5.308	0.642	-0.121		
Statistics (Lognormal ROS Estimates)	--	--	--	-5.408	0.68	-0.126		
Normal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Normal ROS				
Correlation Coefficient R	0.831	0.828	0.839	0.869				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.715	0.901	Data Not Normal					
Shapiro-Wilk (NDs = DL)	0.71	0.905	Data Not Normal					
Shapiro-Wilk (NDs = DL/2)	0.727	0.905	Data Not Normal					
Shapiro-Wilk (Normal ROS Estimates)	0.784	0.905	Data Not Normal					
Lilliefors (Detects Only)	0.222	0.197	Data Not Normal					
Lilliefors (NDs = DL)	0.227	0.192	Data Not Normal					
Lilliefors (NDs = DL/2)	0.221	0.192	Data Not Normal					
Lilliefors (Normal ROS Estimates)	0.206	0.192	Data Not Normal					
Gamma GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
Correlation Coefficient R	0.93	0.93	0.938	0.949				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Anderson-Darling (Detects Only)	0.619	0.75						
Kolmogorov-Smirnov (Detects Only)	0.171	0.2	Detected Data Appear Gamma Distributed					
Anderson-Darling (NDs = DL)	0.624	0.75						
Kolmogorov-Smirnov (NDs = DL)	0.17	0.196	Data Appear Gamma Distributed					
Anderson-Darling (NDs = DL/2)	0.507	0.751						
Kolmogorov-Smirnov (NDs = DL/2)	0.155	0.196	Data Appear Gamma Distributed					
Anderson-Darling (Gamma ROS Estimates)	0.487	0.749						
Kolmogorov-Smirnov (Gamma ROS Est.)	0.161	0.195	Data Appear Gamma Distributed					

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Lognormal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Log ROS				
Correlation Coefficient R	0.97	0.973	0.977	0.979				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.96	0.901	Data Appear Lognormal					
Shapiro-Wilk (NDs = DL)	0.964	0.905	Data Appear Lognormal					
Shapiro-Wilk (NDs = DL/2)	0.964	0.905	Data Appear Lognormal					
Shapiro-Wilk (Lognormal ROS Estimates)	0.969	0.905	Data Appear Lognormal					
Lilliefors (Detects Only)	0.128	0.197	Data Appear Lognormal					
Lilliefors (NDs = DL)	0.126	0.192	Data Appear Lognormal					
Lilliefors (NDs = DL/2)	0.116	0.192	Data Appear Lognormal					
Lilliefors (Lognormal ROS Estimates)	0.112	0.192	Data Appear Lognormal					
Note: Substitution methods such as DL or DL/2 are not recommended.								
Molybdenum (m-58a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	1	20	17	3	15.00%		
	Number	Minimum	Maximum	Mean	Median	SD		
Statistics (Non-Detects Only)	3	0.0018	0.01	0.00477	0.0025	0.00455		
Statistics (Non-Detects Only)	17	0.0014	0.02	0.00308	0.0018	0.00442		
Statistics (All: NDs treated as DL value)	20	0.0014	0.02	0.00334	0.0018	0.00436		
Statistics (All: NDs treated as DL/2 value)	20	9.0000E-4	0.02	0.00298	0.0018	0.00413		
Statistics (Normal ROS Imputed Data)	20	1.2267E-4	0.02	0.00287	0.0018	0.00411		
Statistics (Gamma ROS Imputed Data)	20	0.0014	0.02	0.00412	0.0018	0.00478		
Statistics (Lognormal ROS Imputed Data)	20	0.00131	0.02	0.00288	0.0018	0.00409		
	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
Statistics (Non-Detects Only)	1.677	1.42	0.00184	-6.109	0.627	-0.103		
Statistics (NDs = DL)	1.638	1.426	0.00204	-6.039	0.669	-0.111		
Statistics (NDs = DL/2)	1.682	1.463	0.00177	-6.142	0.652	-0.106		
Statistics (Gamma ROS Estimates)	1.421	1.241	0.0029	-5.883	0.797	-0.135		

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Statistics (Lognormal ROS Estimates)	--	--	--	-6.147	0.588	-0.0957		
Normal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Normal ROS				
Correlation Coefficient R	0.581	0.652	0.615	0.596				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.368	0.892	Data Not Normal					
Shapiro-Wilk (NDs = DL)	0.449	0.905	Data Not Normal					
Shapiro-Wilk (NDs = DL/2)	0.408	0.905	Data Not Normal					
Shapiro-Wilk (Normal ROS Estimates)	0.388	0.905	Data Not Normal					
Lilliefors (Detects Only)	0.435	0.207	Data Not Normal					
Lilliefors (NDs = DL)	0.426	0.192	Data Not Normal					
Lilliefors (NDs = DL/2)	0.396	0.192	Data Not Normal					
Lilliefors (Normal ROS Estimates)	0.423	0.192	Data Not Normal					
Gamma GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
Correlation Coefficient R	0.761	0.834	0.787	0.921				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Anderson-Darling (Detects Only)	3.58	0.753						
Kolmogorov-Smirnov (Detects Only)	0.382	0.212	Data Not Gamma Distributed					
Anderson-Darling (NDs = DL)	3.693	0.756						
Kolmogorov-Smirnov (NDs = DL)	0.383	0.197	Data Not Gamma Distributed					
Anderson-Darling (NDs = DL/2)	3.007	0.756						
Kolmogorov-Smirnov (NDs = DL/2)	0.343	0.197	Data Not Gamma Distributed					
Anderson-Darling (Gamma ROS Estimates)	2.961	0.759						
Kolmogorov-Smirnov (Gamma ROS Est.)	0.352	0.198	Data Not Gamma Distributed					
Lognormal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Log ROS				
Correlation Coefficient R	0.746	0.795	0.843	0.749				

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.583	0.892	Data Not Lognormal					
Shapiro-Wilk (NDs = DL)	0.648	0.905	Data Not Lognormal					
Shapiro-Wilk (NDs = DL/2)	0.737	0.905	Data Not Lognormal					
Shapiro-Wilk (Lognormal ROS Estimates)	0.589	0.905	Data Not Lognormal					
Lilliefors (Detects Only)	0.33	0.207	Data Not Lognormal					
Lilliefors (NDs = DL)	0.322	0.192	Data Not Lognormal					
Lilliefors (NDs = DL/2)	0.286	0.192	Data Not Lognormal					
Lilliefors (Lognormal ROS Estimates)	0.331	0.192	Data Not Lognormal					
Note: Substitution methods such as DL or DL/2 are not recommended.								
Molybdenum (m-62a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	2	19	17	2	10.53%		
	Number	Minimum	Maximum	Mean	Median	SD		
Statistics (Non-Detects Only)	2	0.0026	0.0028	0.0027	0.0027	1.4142E-4		
Statistics (Non-Detects Only)	17	0.0019	0.011	0.00303	0.0023	0.00216		
Statistics (All: NDs treated as DL value)	19	0.0019	0.011	0.00299	0.0023	0.00204		
Statistics (All: NDs treated as DL/2 value)	19	0.0013	0.011	0.00285	0.0023	0.00211		
Statistics (Normal ROS Imputed Data)	19	0.0019	0.011	0.00297	0.0023	0.00205		
Statistics (Gamma ROS Imputed Data)	19	0.0019	0.011	0.00376	0.0023	0.003		
Statistics (Lognormal ROS Imputed Data)	19	0.0019	0.011	0.00296	0.0023	0.00205		
	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
Statistics (Non-Detects Only)	4.322	3.599	7.0086E-4	-5.919	0.428	-0.0723		
Statistics (NDs = DL)	4.784	4.063	6.2602E-4	-5.919	0.403	-0.0682		
Statistics (NDs = DL/2)	3.933	3.347	7.2537E-4	-5.992	0.458	-0.0765		
Statistics (Gamma ROS Estimates)	2.672	2.285	0.00141	-5.781	0.578	-0.1		
Statistics (Lognormal ROS Estimates)	--	--	--	-5.933	0.405	-0.0683		
Normal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Normal ROS				
Correlation Coefficient R	0.678	0.671	0.707	0.662				

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.488	0.892	Data Not Normal					
Shapiro-Wilk (NDs = DL)	0.479	0.901	Data Not Normal					
Shapiro-Wilk (NDs = DL/2)	0.531	0.901	Data Not Normal					
Shapiro-Wilk (Normal ROS Estimates)	0.468	0.901	Data Not Normal					
Lilliefors (Detects Only)	0.343	0.207	Data Not Normal					
Lilliefors (NDs = DL)	0.341	0.197	Data Not Normal					
Lilliefors (NDs = DL/2)	0.337	0.197	Data Not Normal					
Lilliefors (Normal ROS Estimates)	0.361	0.197	Data Not Normal					
Gamma GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
Correlation Coefficient R	0.793	0.781	0.814	0.883				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Anderson-Darling (Detects Only)	2.601	0.742						
Kolmogorov-Smirnov (Detects Only)	0.325	0.21	Data Not Gamma Distributed					
Anderson-Darling (NDs = DL)	2.702	0.743						
Kolmogorov-Smirnov (NDs = DL)	0.295	0.199	Data Not Gamma Distributed					
Anderson-Darling (NDs = DL/2)	2.089	0.745						
Kolmogorov-Smirnov (NDs = DL/2)	0.301	0.199	Data Not Gamma Distributed					
Anderson-Darling (Gamma ROS Estimates)	2.884	0.749						
Kolmogorov-Smirnov (Gamma ROS Est.)	0.324	0.2	Data Not Gamma Distributed					
Lognormal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Log ROS				
Correlation Coefficient R	0.803	0.809	0.875	0.786				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.667	0.892	Data Not Lognormal					
Shapiro-Wilk (NDs = DL)	0.677	0.901	Data Not Lognormal					
Shapiro-Wilk (NDs = DL/2)	0.791	0.901	Data Not Lognormal					
Shapiro-Wilk (Lognormal ROS Estimates)	0.641	0.901	Data Not Lognormal					
Lilliefors (Detects Only)	0.31	0.207	Data Not Lognormal					

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Lilliefors (NDs = DL)	0.27	0.197	Data Not Lognormal					
Lilliefors (NDs = DL/2)	0.272	0.197	Data Not Lognormal					
Lilliefors (Lognormal ROS Estimates)	0.333	0.197	Data Not Lognormal					
Note: Substitution methods such as DL or DL/2 are not recommended.								
Total Radium (m-56a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	4	17	12	5	29.41%		
	Number	Minimum	Maximum	Mean	Median	SD		
Statistics (Non-Detects Only)	5	0.4	1.2	0.78	0.7	0.295		
Statistics (Non-Detects Only)	12	0.5	1.9	1.158	1.3	0.558		
Statistics (All: NDs treated as DL value)	17	0.4	1.9	1.047	0.9	0.517		
Statistics (All: NDs treated as DL/2 value)	17	0.2	1.9	0.932	0.6	0.592		
Statistics (Normal ROS Imputed Data)	17	-0.202	1.9	0.935	0.6	0.612		
Statistics (Gamma ROS Imputed Data)	17	0.148	1.9	0.964	0.6	0.568		
Statistics (Lognormal ROS Imputed Data)	17	0.272	1.9	0.968	0.6	0.559		
	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
Statistics (Non-Detects Only)	4.086	3.12	0.283	0.0196	0.549	27.92		
Statistics (NDs = DL)	4.21	3.506	0.249	-0.0775	0.521	-6.732		
Statistics (NDs = DL/2)	2.521	2.115	0.37	-0.281	0.692	-2.46		
Statistics (Gamma ROS Estimates)	2.763	2.315	0.349	-0.229	0.681	-2.978		
Statistics (Lognormal ROS Estimates)	--	--	--	-0.197	0.599	-3.031		
Normal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Normal ROS				
Correlation Coefficient R	0.936	0.955	0.934	0.955				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.847	0.859	Data Not Normal					
Shapiro-Wilk (NDs = DL)	0.892	0.892	Data Not Normal					
Shapiro-Wilk (NDs = DL/2)	0.854	0.892	Data Not Normal					
Shapiro-Wilk (Normal ROS Estimates)	0.906	0.892	Data Appear Normal					

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Lilliefors (Detects Only)	0.258	0.243	Data Not Normal					
Lilliefors (NDs = DL)	0.219	0.207	Data Not Normal					
Lilliefors (NDs = DL/2)	0.301	0.207	Data Not Normal					
Lilliefors (Normal ROS Estimates)	0.237	0.207	Data Not Normal					
Gamma GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
Correlation Coefficient R	0.914	0.957	0.936	0.939				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Anderson-Darling (Detects Only)	0.972	0.735						
Kolmogorov-Smirnov (Detects Only)	0.264	0.246	Data Not Gamma Distributed					
Anderson-Darling (NDs = DL)	0.685	0.743						
Kolmogorov-Smirnov (NDs = DL)	0.198	0.21	Data Appear Gamma Distributed					
Anderson-Darling (NDs = DL/2)	0.857	0.747						
Kolmogorov-Smirnov (NDs = DL/2)	0.256	0.211	Data Not Gamma Distributed					
Anderson-Darling (Gamma ROS Estimates)	0.849	0.746						
Kolmogorov-Smirnov (Gamma ROS Est.)	0.228	0.211	Data Not Gamma Distributed					
Lognormal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Log ROS				
Correlation Coefficient R	0.92	0.965	0.96	0.948				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.819	0.859	Data Not Lognormal					
Shapiro-Wilk (NDs = DL)	0.911	0.892	Data Appear Lognormal					
Shapiro-Wilk (NDs = DL/2)	0.91	0.892	Data Appear Lognormal					
Shapiro-Wilk (Lognormal ROS Estimates)	0.887	0.892	Data Not Lognormal					
Lilliefors (Detects Only)	0.25	0.243	Data Not Lognormal					
Lilliefors (NDs = DL)	0.174	0.207	Data Appear Lognormal					
Lilliefors (NDs = DL/2)	0.218	0.207	Data Not Lognormal					
Lilliefors (Lognormal ROS Estimates)	0.229	0.207	Data Not Lognormal					
Note: Substitution methods such as DL or DL/2 are not recommended.								

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Total Radium (m-57a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	4	17	5	12	70.59%		
	Number	Minimum	Maximum	Mean	Median	SD		
Statistics (Non-Detects Only)	12	0.4	0.9	0.658	0.7	0.116		
Statistics (Non-Detects Only)	5	0.5	1.5	0.88	0.7	0.415		
Statistics (All: NDs treated as DL value)	17	0.4	1.5	0.724	0.7	0.251		
Statistics (All: NDs treated as DL/2 value)	17	0.2	1.5	0.491	0.35	0.335		
Statistics (Normal ROS Imputed Data)	17	-0.391	1.5	0.32	0.254	0.5		
Statistics (Gamma ROS Imputed Data)	17	0.01	1.5	0.402	0.282	0.412		
Statistics (Lognormal ROS Imputed Data)	17	0.191	1.5	0.504	0.397	0.34		
	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
Statistics (Non-Detects Only)	6.104	2.575	0.144	-0.212	0.452	-2.133		
Statistics (NDs = DL)	11.3	9.343	0.064	-0.369	0.295	-0.8		
Statistics (NDs = DL/2)	3.563	2.973	0.138	-0.858	0.511	-0.595		
Statistics (Gamma ROS Estimates)	0.695	0.611	0.578	-1.783	1.74	-0.976		
Statistics (Lognormal ROS Estimates)	--	--	--	-0.849	0.565	-0.666		
Normal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Normal ROS				
Correlation Coefficient R	0.951	0.853	0.819	0.978				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.896	0.762	Data Appear Normal					
Shapiro-Wilk (NDs = DL)	0.753	0.892	Data Not Normal					
Shapiro-Wilk (NDs = DL/2)	0.687	0.892	Data Not Normal					
Shapiro-Wilk (Normal ROS Estimates)	0.957	0.892	Data Appear Normal					
Lilliefors (Detects Only)	0.268	0.343	Data Appear Normal					
Lilliefors (NDs = DL)	0.361	0.207	Data Not Normal					
Lilliefors (NDs = DL/2)	0.31	0.207	Data Not Normal					
Lilliefors (Normal ROS Estimates)	0.106	0.207	Data Appear Normal					
Gamma GOF Test Results								

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
	No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
Correlation Coefficient R	0.985	0.9	0.918	0.986				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Anderson-Darling (Detects Only)	0.317	0.68						
Kolmogorov-Smirnov (Detects Only)	0.258	0.358	Detected Data Appear Gamma Distributed					
Anderson-Darling (NDs = DL)	1.285	0.739						
Kolmogorov-Smirnov (NDs = DL)	0.328	0.209	Data Not Gamma Distributed					
Anderson-Darling (NDs = DL/2)	1.513	0.744						
Kolmogorov-Smirnov (NDs = DL/2)	0.311	0.21	Data Not Gamma Distributed					
Anderson-Darling (Gamma ROS Estimates)	0.534	0.781						
Kolmogorov-Smirnov (Gamma ROS Est.)	0.161	0.218	Data Appear Gamma Distributed					
Lognormal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Log ROS				
Correlation Coefficient R	0.976	0.92	0.917	0.981				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.94	0.762	Data Appear Lognormal					
Shapiro-Wilk (NDs = DL)	0.87	0.892	Data Not Lognormal					
Shapiro-Wilk (NDs = DL/2)	0.852	0.892	Data Not Lognormal					
Shapiro-Wilk (Lognormal ROS Estimates)	0.96	0.892	Data Appear Lognormal					
Lilliefors (Detects Only)	0.226	0.343	Data Appear Lognormal					
Lilliefors (NDs = DL)	0.308	0.207	Data Not Lognormal					
Lilliefors (NDs = DL/2)	0.294	0.207	Data Not Lognormal					
Lilliefors (Lognormal ROS Estimates)	0.0985	0.207	Data Appear Lognormal					
Note: Substitution methods such as DL or DL/2 are not recommended.								
Total Radium (m-58a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	4	17	8	9	52.94%		
	Number	Minimum	Maximum	Mean	Median	SD		

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Statistics (Non-Detects Only)	9	0.6	0.9	0.689	0.7	0.0928		
Statistics (Non-Detects Only)	8	0.7	2.6	1.4	1.05	0.729		
Statistics (All: NDs treated as DL value)	17	0.6	2.6	1.024	0.7	0.609		
Statistics (All: NDs treated as DL/2 value)	17	0.3	2.6	0.841	0.45	0.727		
Statistics (Normal ROS Imputed Data)	17	-1.592	2.6	0.323	0.0561	1.217		
Statistics (Gamma ROS Imputed Data)	17	0.01	2.6	0.681	0.21	0.85		
Statistics (Lognormal ROS Imputed Data)	17	0.155	2.6	0.829	0.489	0.74		
	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
Statistics (Non-Detects Only)	4.536	2.918	0.309	0.222	0.505	2.272		
Statistics (NDs = DL)	4.328	3.604	0.236	-0.0967	0.464	-4.803		
Statistics (NDs = DL/2)	1.869	1.579	0.45	-0.464	0.751	-1.62		
Statistics (Gamma ROS Estimates)	0.402	0.37	1.694	-2.019	2.36	-1.169		
Statistics (Lognormal ROS Estimates)	--	--	--	-0.529	0.848	-1.603		
Normal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Normal ROS				
Correlation Coefficient R	0.934	0.827	0.872	0.988				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.856	0.818	Data Appear Normal					
Shapiro-Wilk (NDs = DL)	0.686	0.892	Data Not Normal					
Shapiro-Wilk (NDs = DL/2)	0.757	0.892	Data Not Normal					
Shapiro-Wilk (Normal ROS Estimates)	0.966	0.892	Data Appear Normal					
Lilliefors (Detects Only)	0.254	0.283	Data Appear Normal					
Lilliefors (NDs = DL)	0.345	0.207	Data Not Normal					
Lilliefors (NDs = DL/2)	0.234	0.207	Data Not Normal					
Lilliefors (Normal ROS Estimates)	0.116	0.207	Data Appear Normal					
Gamma GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
Correlation Coefficient R	0.965	0.912	0.966	0.943				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Anderson-Darling (Detects Only)	0.531	0.719						

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Kolmogorov-Smirnov (Detects Only)	0.262	0.295	Detected Data Appear Gamma Distributed					
Anderson-Darling (NDs = DL)	1.877	0.742						
Kolmogorov-Smirnov (NDs = DL)	0.304	0.21	Data Not Gamma Distributed					
Anderson-Darling (NDs = DL/2)	1.189	0.751						
Kolmogorov-Smirnov (NDs = DL/2)	0.255	0.212	Data Not Gamma Distributed					
Anderson-Darling (Gamma ROS Estimates)	1.193	0.819						
Kolmogorov-Smirnov (Gamma ROS Est.)	0.269	0.224	Data Not Gamma Distributed					
Lognormal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Log ROS				
Correlation Coefficient R	0.955	0.888	0.933	0.987				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.891	0.818	Data Appear Lognormal					
Shapiro-Wilk (NDs = DL)	0.782	0.892	Data Not Lognormal					
Shapiro-Wilk (NDs = DL/2)	0.852	0.892	Data Not Lognormal					
Shapiro-Wilk (Lognormal ROS Estimates)	0.962	0.892	Data Appear Lognormal					
Lilliefors (Detects Only)	0.242	0.283	Data Appear Lognormal					
Lilliefors (NDs = DL)	0.272	0.207	Data Not Lognormal					
Lilliefors (NDs = DL/2)	0.253	0.207	Data Not Lognormal					
Lilliefors (Lognormal ROS Estimates)	0.116	0.207	Data Appear Lognormal					
Note: Substitution methods such as DL or DL/2 are not recommended.								
Total Radium (m-62a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	5	16	13	3	18.75%		
	Number	Minimum	Maximum	Mean	Median	SD		
Statistics (Non-Detects Only)	3	0.7	0.8	0.733	0.7	0.0577		
Statistics (Non-Detects Only)	13	0.5	2	1.077	1	0.421		
Statistics (All: NDs treated as DL value)	16	0.5	2	1.013	0.9	0.401		
Statistics (All: NDs treated as DL/2 value)	16	0.35	2	0.944	0.9	0.473		
Statistics (Normal ROS Imputed Data)	16	0.31	2	0.959	0.9	0.455		
Statistics (Gamma ROS Imputed Data)	16	0.394	2	0.968	0.9	0.445		

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Statistics (Lognormal ROS Imputed Data)	16	0.468	2	0.976	0.9	0.435		
	K hat	K Star	Theta hat	Log Mean	Log Stdev	Log CV		
Statistics (Non-Detects Only)	6.931	5.383	0.155	2.3393E-4	0.41	1752		
Statistics (NDs = DL)	7.228	5.915	0.14	-0.0583	0.389	-6.66		
Statistics (NDs = DL/2)	3.993	3.286	0.236	-0.188	0.547	-2.906		
Statistics (Gamma ROS Estimates)	5.098	4.184	0.19	-0.134	0.472	-3.514		
Statistics (Lognormal ROS Estimates)	--	--	--	-0.116	0.446	-3.837		
Normal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Normal ROS				
Correlation Coefficient R	0.976	0.963	0.974	0.974				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.953	0.866	Data Appear Normal					
Shapiro-Wilk (NDs = DL)	0.929	0.887	Data Appear Normal					
Shapiro-Wilk (NDs = DL/2)	0.942	0.887	Data Appear Normal					
Shapiro-Wilk (Normal ROS Estimates)	0.947	0.887	Data Appear Normal					
Lilliefors (Detects Only)	0.125	0.234	Data Appear Normal					
Lilliefors (NDs = DL)	0.173	0.213	Data Appear Normal					
Lilliefors (NDs = DL/2)	0.138	0.213	Data Appear Normal					
Lilliefors (Normal ROS Estimates)	0.139	0.213	Data Appear Normal					
Gamma GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
Correlation Coefficient R	0.988	0.989	0.985	0.989				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Anderson-Darling (Detects Only)	0.245	0.735						
Kolmogorov-Smirnov (Detects Only)	0.14	0.237	Detected Data Appear Gamma Distributed					
Anderson-Darling (NDs = DL)	0.245	0.74						
Kolmogorov-Smirnov (NDs = DL)	0.136	0.215	Data Appear Gamma Distributed					
Anderson-Darling (NDs = DL/2)	0.363	0.742						
Kolmogorov-Smirnov (NDs = DL/2)	0.155	0.216	Data Appear Gamma Distributed					
Anderson-Darling (Gamma ROS Estimates)	0.321	0.741						

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Kolmogorov-Smirnov (Gamma ROS Est.)	0.155	0.216	Data Appear Gamma Distributed					
Lognormal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Log ROS				
Correlation Coefficient R	0.978	0.988	0.974	0.98				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.952	0.866	Data Appear Lognormal					
Shapiro-Wilk (NDs = DL)	0.97	0.887	Data Appear Lognormal					
Shapiro-Wilk (NDs = DL/2)	0.934	0.887	Data Appear Lognormal					
Shapiro-Wilk (Lognormal ROS Estimates)	0.946	0.887	Data Appear Lognormal					
Lilliefors (Detects Only)	0.168	0.234	Data Appear Lognormal					
Lilliefors (NDs = DL)	0.111	0.213	Data Appear Lognormal					
Lilliefors (NDs = DL/2)	0.185	0.213	Data Appear Lognormal					
Lilliefors (Lognormal ROS Estimates)	0.141	0.213	Data Appear Lognormal					
Note: Substitution methods such as DL or DL/2 are not recommended.								
Selenium (m-56a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	5	16	4	12	75.00%		
	Number	Minimum	Maximum	Mean	Median	SD		
Statistics (Non-Detects Only)	12	5.0000E-4	0.01	0.00163	5.0000E-4	0.00272		
Statistics (Non-Detects Only)	4	3.3000E-4	6.2000E-4	5.2000E-4	5.6500E-4	1.2936E-4		
Statistics (All: NDs treated as DL value)	16	3.3000E-4	0.01	0.00136	5.3000E-4	0.00238		
Statistics (All: NDs treated as DL/2 value)	16	2.5000E-4	0.005	7.4250E-4	3.1500E-4	0.00117		
Statistics (Normal ROS Imputed Data)	16	2.0883E-4	6.2000E-4	4.0495E-4	4.0150E-4	1.0766E-4		
Statistics (Gamma ROS Imputed Data)	16	3.3000E-4	0.01	0.00763	0.01	0.00424		
Statistics (Lognormal ROS Imputed Data)	16	2.5547E-4	6.2000E-4	4.0356E-4	3.8982E-4	1.0048E-4		
	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
Statistics (Non-Detects Only)	17.88	4.635	2.9091E-5	-7.59	0.288	-0.0379		
Statistics (NDs = DL)	1.019	0.87	0.00133	-7.169	0.867	-0.121		
Statistics (NDs = DL/2)	1.173	0.995	6.3296E-4	-7.689	0.832	-0.108		

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Statistics (Gamma ROS Estimates)	1.19	1.009	0.00641	-5.351	1.341	-0.251		
Statistics (Lognormal ROS Estimates)	--	--	--	-7.842	0.237	-0.0302		
Normal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Normal ROS				
Correlation Coefficient R	0.889	0.633	0.657	0.968				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.805	0.748	Data Appear Normal					
Shapiro-Wilk (NDs = DL)	0.431	0.887	Data Not Normal					
Shapiro-Wilk (NDs = DL/2)	0.461	0.887	Data Not Normal					
Shapiro-Wilk (Normal ROS Estimates)	0.94	0.887	Data Appear Normal					
Lilliefors (Detects Only)	0.371	0.375	Data Appear Normal					
Lilliefors (NDs = DL)	0.372	0.213	Data Not Normal					
Lilliefors (NDs = DL/2)	0.354	0.213	Data Not Normal					
Lilliefors (Normal ROS Estimates)	0.2	0.213	Data Appear Normal					
Gamma GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
Correlation Coefficient R	0.839	0.85	0.855	0.536				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Anderson-Darling (Detects Only)	0.634	0.657	Detected Data appear Approximate Gamma Distribution					
Kolmogorov-Smirnov (Detects Only)	0.404	0.394						
Anderson-Darling (NDs = DL)	2.8	0.763						
Kolmogorov-Smirnov (NDs = DL)	0.387	0.221	Data Not Gamma Distributed					
Anderson-Darling (NDs = DL/2)	1.97	0.76						
Kolmogorov-Smirnov (NDs = DL/2)	0.262	0.22	Data Not Gamma Distributed					
Anderson-Darling (Gamma ROS Estimates)	3.832	0.76						
Kolmogorov-Smirnov (Gamma ROS Est.)	0.48	0.22	Data Not Gamma Distributed					
Lognormal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Log ROS				
Correlation Coefficient R	0.867	0.822	0.87	0.966				

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (Detects Only)	0.766	0.748	Data Appear Lognormal					
Shapiro-Wilk (NDs = DL)	0.695	0.887	Data Not Lognormal					
Shapiro-Wilk (NDs = DL/2)	0.763	0.887	Data Not Lognormal					
Shapiro-Wilk (Lognormal ROS Estimates)	0.935	0.887	Data Appear Lognormal					
Lilliefors (Detects Only)	0.389	0.375	Data Not Lognormal					
Lilliefors (NDs = DL)	0.349	0.213	Data Not Lognormal					
Lilliefors (NDs = DL/2)	0.233	0.213	Data Not Lognormal					
Lilliefors (Lognormal ROS Estimates)	0.2	0.213	Data Appear Lognormal					
Note: Substitution methods such as DL or DL/2 are not recommended.								
Selenium (m-57a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	5	16	2	14	87.50%		
	Number	Minimum	Maximum	Mean	Median	SD		
Statistics (Non-Detects Only)	14	5.0000E-4	0.01	0.00151	5.0000E-4	0.00252		
Statistics (Non-Detects Only)	2	2.9000E-4	6.9000E-4	4.9000E-4	4.9000E-4	2.8284E-4		
Statistics (All: NDs treated as DL value)	16	2.9000E-4	0.01	0.00138	5.0000E-4	0.00238		
Statistics (All: NDs treated as DL/2 value)	16	2.5000E-4	0.005	7.2063E-4	2.7000E-4	0.00118		
Statistics (Normal ROS Imputed Data)	16	3.2547E-5	6.9000E-4	3.1934E-4	3.1531E-4	1.5169E-4		
Statistics (Gamma ROS Imputed Data)	16	N/A	N/A	N/A	N/A	N/A		
Statistics (Lognormal ROS Imputed Data)	16	1.6600E-4	6.9000E-4	3.2613E-4	3.0635E-4	1.2132E-4		
	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
Statistics (Non-Detects Only)	N/A	N/A	N/A	N/A	N/A	N/A		
Statistics (NDs = DL)	1.033	0.881	0.00134	-7.142	0.876	-0.123		
Statistics (NDs = DL/2)	1.111	0.944	6.4870E-4	-7.749	0.848	-0.109		
Statistics (Gamma ROS Estimates)	N/A	N/A	N/A	N/A	N/A	N/A		
Statistics (Lognormal ROS Estimates)	--	--	--	-8.082	0.329	-0.0407		
Normal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Normal ROS				

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Correlation Coefficient R	1	0.644	0.65	0.967				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (NDs = DL)	0.445	0.887	Data Not Normal					
Shapiro-Wilk (NDs = DL/2)	0.451	0.887	Data Not Normal					
Shapiro-Wilk (Normal ROS Estimates)	0.954	0.887	Data Appear Normal					
Lilliefors (Detects Only)	N/A	N/A						
Lilliefors (NDs = DL)	0.376	0.213	Data Not Normal					
Lilliefors (NDs = DL/2)	0.345	0.213	Data Not Normal					
Lilliefors (Normal ROS Estimates)	0.191	0.213	Data Appear Normal					
Gamma GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
Correlation Coefficient R	N/A	0.856	0.857	0.439				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Anderson-Darling (Detects Only)	N/A	N/A						
Kolmogorov-Smirnov (Detects Only)	N/A	N/A						
Anderson-Darling (NDs = DL)	2.388	0.763						
Kolmogorov-Smirnov (NDs = DL)	0.301	0.221	Data Not Gamma Distributed					
Anderson-Darling (NDs = DL/2)	2.334	0.761						
Kolmogorov-Smirnov (NDs = DL/2)	0.306	0.221	Data Not Gamma Distributed					
Anderson-Darling (Gamma ROS Estimates)	N/A	0.736						
Kolmogorov-Smirnov (Gamma ROS Est.)	N/A	0.214						
Lognormal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Log ROS				
Correlation Coefficient R	1	0.858	0.841	N/A				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (NDs = DL)	0.754	0.887	Data Not Lognormal					
Shapiro-Wilk (NDs = DL/2)	0.714	0.887	Data Not Lognormal					
Shapiro-Wilk (Lognormal ROS Estimates)	0.954	0.887	Data Appear Lognormal					
Lilliefors (Detects Only)	N/A	N/A						
Lilliefors (NDs = DL)	0.262	0.213	Data Not Lognormal					

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Lilliefors (NDs = DL/2)	0.291	0.213	Data Not Lognormal					
Lilliefors (Lognormal ROS Estimates)	0.191	0.213	Data Appear Lognormal					
Note: Substitution methods such as DL or DL/2 are not recommended.								
Selenium (m-58a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	5	16	1	15	93.75%		
Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!								
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).								
The data set for variable Selenium (m-58a) was not processed!								
Selenium (m-62a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	5	16	2	14	87.50%		
	Number	Minimum	Maximum	Mean	Median	SD		
Statistics (Non-Detects Only)	14	5.0000E-4	0.01	0.0015	5.0000E-4	0.00253		
Statistics (Non-Detects Only)	2	7.1000E-4	7.8000E-4	7.4500E-4	7.4500E-4	4.9497E-5		
Statistics (All: NDs treated as DL value)	16	5.0000E-4	0.01	0.00141	5.0000E-4	0.00237		
Statistics (All: NDs treated as DL/2 value)	16	2.5000E-4	0.005	7.4938E-4	2.5000E-4	0.00118		
Statistics (Normal ROS Imputed Data)	16	2.3901E-4	7.8000E-4	4.9705E-4	4.9510E-4	1.3722E-4		
Statistics (Gamma ROS Imputed Data)	16	N/A	N/A	N/A	N/A	N/A		
Statistics (Lognormal ROS Imputed Data)	16	3.7713E-4	7.8000E-4	5.4204E-4	5.3197E-4	1.0252E-4		
	K hat	K Star	Theta hat	Log Mean	Log Stdv	Log CV		
Statistics (Non-Detects Only)	N/A	N/A	N/A	N/A	N/A	N/A		
Statistics (NDs = DL)	1.093	0.93	0.00129	-7.09	0.84	-0.119		
Statistics (NDs = DL/2)	1.137	0.966	6.5904E-4	-7.697	0.861	-0.112		
Statistics (Gamma ROS Estimates)	N/A	N/A	N/A	N/A	N/A	N/A		
Statistics (Lognormal ROS Estimates)	--	--	--	-7.536	0.184	-0.0245		

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Normal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Normal ROS				
Correlation Coefficient R	1	0.638	0.666	0.987				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (NDs = DL)	0.436	0.887	Data Not Normal					
Shapiro-Wilk (NDs = DL/2)	0.472	0.887	Data Not Normal					
Shapiro-Wilk (Normal ROS Estimates)	0.979	0.887	Data Appear Normal					
Lilliefors (Detects Only)	N/A	N/A						
Lilliefors (NDs = DL)	0.381	0.213	Data Not Normal					
Lilliefors (NDs = DL/2)	0.336	0.213	Data Not Normal					
Lilliefors (Normal ROS Estimates)	0.131	0.213	Data Appear Normal					
Gamma GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Gamma ROS				
Correlation Coefficient R	N/A	0.85	0.864	0.461				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Anderson-Darling (Detects Only)	N/A	N/A						
Kolmogorov-Smirnov (Detects Only)	N/A	N/A						
Anderson-Darling (NDs = DL)	2.593	0.762						
Kolmogorov-Smirnov (NDs = DL)	0.315	0.221	Data Not Gamma Distributed					
Anderson-Darling (NDs = DL/2)	2.031	0.761						
Kolmogorov-Smirnov (NDs = DL/2)	0.306	0.221	Data Not Gamma Distributed					
Anderson-Darling (Gamma ROS Estimates)	N/A	0.736						
Kolmogorov-Smirnov (Gamma ROS Est.)	N/A	0.214						
Lognormal GOF Test Results								
	No NDs	NDs = DL	NDs = DL/2	Log ROS				
Correlation Coefficient R	1	0.822	0.86	N/A				
	Test value	Crit. (0.05)	Conclusion with Alpha(0.05)					
Shapiro-Wilk (NDs = DL)	0.685	0.887	Data Not Lognormal					

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Shapiro-Wilk (NDs = DL/2)	0.744	0.887	Data Not Lognormal					
Shapiro-Wilk (Lognormal ROS Estimates)	0.979	0.887	Data Appear Lognormal					
Lilliefors (Detects Only)	N/A	N/A						
Lilliefors (NDs = DL)	0.291	0.213	Data Not Lognormal					
Lilliefors (NDs = DL/2)	0.319	0.213	Data Not Lognormal					
Lilliefors (Lognormal ROS Estimates)	0.131	0.213	Data Appear Lognormal					
Note: Substitution methods such as DL or DL/2 are not recommended.								
Thallium (m-56a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	1	20	1	19	95.00%		
Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!								
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).								
The data set for variable Thallium (m-56a) was not processed!								
Thallium (m-57a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	1	20	0	20	100.00%		
Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!								
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!								
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).								
The data set for variable Thallium (m-57a) was not processed!								
Thallium (m-58a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		

Appendix B Goodness of Fit Statistics

Raw Statistics	21	5	16	1	15	93.75%		
Raw Statistics	21	1	20	0	20	100.00%		
Warning: All observations are Non-Detects (NDs), therefore all statistics and estimates should also be NDs!								
Specifically, sample mean, UCLs, UPLs, and other statistics are also NDs lying below the largest detection limit!								
The Project Team may decide to use alternative site specific values to estimate environmental parameters (e.g., EPC, BTV).								
The data set for variable Thallium (m-58a) was not processed!								
Thallium (m-62a)								
	Num Obs	Num Miss	Num Valid	Detects	NDs	% NDs		
Raw Statistics	21	2	19	1	18	94.74%		
Warning: Only one distinct data value was detected! ProUCL (or any other software) should not be used on such a data set!								
It is suggested to use alternative site specific values determined by the Project Team to estimate environmental parameters (e.g., EPC, BTV).								
The data set for variable Thallium (m-62a) was not processed!								

APPENDIX I

ADWR WELLS 55 REGISTRY DATABASE REVIEWS FOR 2020

Registry No. (55-)	GWSI Site ID	Cadastral	Owner Name	Well Type	Well Depth (ft)	Casing Depth (ft)	Case Dia (in)	Drill Date	Applicaition Date	Water Level (ft)	Pump Capacity (GPM)	Pump Data Available	Completion Report	Log Received
923973		A18019020000	ARIZONA PUBLIC SERVICE	OTHER	40			3/3/2020	3/2/2020			NO	A	X
923582		A18019024BBB	ARIZONA PUBLIC SERVICE	MONITOR	77	75	3	11/22/2019	11/6/2019			NO		X
923598		A18019014DDA	ARIZONA PUBLIC SERVICE	OTHER	62			11/19/2019	11/12/2019	9		NO	A	X
923618		A18019024BBB	ARIZONA PUBLIC SERVICE	MONITOR	53		3	11/19/2019	11/18/2019			NO		X
923346		A18019025BAD	ARIZONA PUBLIC SERVICE	MONITOR	50			9/18/2019	9/9/2019			NO		X
922954		A18019023CCD	ARIZONA PUBLIC SERVICE	MONITOR	86	70	4	5/22/2019	5/10/2019	46		NO		X
922955		A18019023CCC	ARIZONA PUBLIC SERVICE	MONITOR	96	82	4	5/17/2019	5/10/2019	46		NO		X
922300		A18020030CBC	ARIZONA PUBLIC SERVICE	MONITOR	60	49	4	11/26/2018	11/7/2018	29		NO		X
922301		A18019025DDB	ARIZONA PUBLIC SERVICE	MONITOR	50	45		11/15/2018	11/7/2018	34		NO		X
922299		A18019025DAB	ARIZONA PUBLIC SERVICE	MONITOR	25	19	4	11/14/2018	11/7/2018	14		NO		X
921392		A18019026BB0	ARIZONA PUBLIC SERVICE	OTHER	51		6	2/27/2018	2/28/2018			NO		X
921059		A18019026BBA	ARIZONA PUBLIC SERVICE	MONITOR	62	60	2	11/16/2017	11/8/2017	36		NO		X
921058		A18019026BBA	ARIZONA PUBLIC SERVICE	MONITOR	62	60	2	11/15/2017	11/8/2017	37		NO		X
921042		A18019022DDB	ARIZONA PUBLIC SERVICE (APS)	OTHER	66			11/5/2017	11/3/2017	60		NO	A	X
921016		A18019022DDB	ARIZONA PUBLIC SERVICE - APS	MONITOR	126	119	4	11/4/2017	10/25/2017	50		NO		X
920353		A18019021CCB	ARIZONA PUBLIC SERVICE (APS)	MONITOR	69	60	4	2/11/2017	2/3/2017	23		NO		X
919789		A18019026AAD	ARIZONA PUBLIC SERVICE (APS)	MONITOR	60	60	4	8/29/2016	8/11/2016	42		NO		X
919788		A18019023CCC	ARIZONA PUBLIC SERVICE (APS)	MONITOR	60	60	4	8/26/2016	8/11/2016	40		NO		X
919787		A18019023BCC	ARIZONA PUBLIC SERVICE (APS)	MONITOR	60	60	4	8/25/2016	8/11/2016	40		NO		X
919786		A18019023BAD	ARIZONA PUBLIC SERVICES (APS)	MONITOR	60	60	4	8/24/2016	8/11/2016	40		NO		X
919790		A18019024CDD	ARIZONA PUBLIC SERVICE (APS)	MONITOR	60	60	4	8/23/2016	8/11/2016	42		NO		X
919791		A18019023DAB	ARIZONA PUBLIC SERVICE (APS)	MONITOR	120	118	4	8/19/2016	8/11/2016	42		NO		X
918638		A18019025CDC	ARIZONA PUBLIC SERVICE	MONITOR	57	55	5	11/18/2015	9/11/2015	38		NO		X
918658		A18019023CBD	ARIZONA PUBLIC SERVICE	MONITOR	97	84	5	11/17/2015	9/14/2015	42		NO		X
918648		A18019013BCA	ARIZONA PUBLIC SERVICE	MONITOR	420	415	5	11/13/2015	9/11/2015	195		NO		X
918649		A18019013BAC	ARIZONA PUBLIC SERVICE	MONITOR	450	445	5	11/1/2015	9/11/2015	225		NO		X
918647		A18019013CBB	ARIZONA PUBLIC SERVICE	MONITOR	425	423	5	10/21/2015	9/11/2015	197		NO		X
918659		A18019023CBC	ARIZONA PUBLIC SERVICE	MONITOR	100	85	5	10/13/2015	9/14/2015	42		NO		X
918646		A18019013CAB	ARIZONA PUBLIC SERVICE	MONITOR	370	365	5	10/12/2015	9/11/2015			NO		X
918660		A18019023CBC	ARIZONA PUBLIC SERVICE	MONITOR	100	85	5	10/8/2015	9/14/2015	41		NO		X
918661		A18019023CBC	ARIZONA PUBLIC SERVICE	MONITOR	100	85	5	10/7/2015	9/14/2015	41		NO		X
918701		A18019013DDB	ARIZONA PUBLIC SERVICES	MONITOR	60	55	5	10/3/2015	9/30/2015			NO		X
918657		A18019024BBC	ARIZONA PUBLIC SERVICE	MONITOR	83	70	4	9/21/2015	9/14/2015			NO		X
918645		A18020030CAC	ARIZONA PUBLIC SERVICE	MONITOR	13			9/19/2015	9/11/2015			NO		X
918640		A18019025ADD	ARIZONA PUBLIC SERVICE	MONITOR	14	12	4	9/18/2015	9/11/2015			NO		X
918641		A18020030CBB	ARIZONA PUBLIC SERVICE	MONITOR	32	29	4	9/18/2015	9/11/2015			NO		X
918639		A18019036ADB	ARIZONA PUBLIC SERVICE	MONITOR	35	20	4	9/16/2015	9/11/2015			NO		X
917710		A18019023000	ARIZONA DEPARTMENT OF TRANSPORTATION	OTHER	40			12/11/2014	1/14/2015	30		NO	A	X
917606		A18019023ACC	ARIZONA DEPARTMENT OF TRANSPORTATION	MONITOR	60	60	2	12/10/2014	12/8/2014	30		NO	A	X
917536		A18019025000	ARIZONA PUBLIC SERVICE COMPANY	OTHER	61		8	11/20/2014	11/13/2014	32		NO	A	X
917515		A18019022D00	BNSF RAILWAYS	OTHER	100		8	11/4/2014	11/6/2014	24		NO	A	X
221780		A18019023CCD	ARIZONA PUBLIC SERVICE COMPANY	MONITOR	62	60	4	11/7/2012	10/15/2012	42		NO		X
221778		A18019023CDC	ARIZONA PUBLIC SERVICE COMPANY	MONITOR	62	60	4	11/6/2012	10/12/2012	42		NO		X

Registry No. (55-)	GWSI Site ID	Cadastral	Owner Name	Well Type	Well Depth (ft)	Casing Depth (ft)	Case Dia (in)	Drill Date	Applicaiton Date	Water Level (ft)	Pump Capacity (GPM)	Pump Data Available	Completion Report	Log Received
221779		A18019023CDC	ARIZONA PUBLIC SERVICE COMPANY	MONITOR	62	60	4	11/6/2012	10/12/2012	42		NO		X
913769		A18019025BAA	ARIZONA PUBLIC SERVICE COMPANY	MONITOR	68	30		11/12/2011	11/3/2011	28		NO		X
913772		A18019022DDB	ARIZONA PUBLIC SERVICE COMPANY	OTHER	183			11/12/2011	11/3/2011			NO	A	X
913771		A18019025DBA	ARIZONA PUBLIC SERVICE COMPANY	MONITOR				11/11/2011	11/3/2011			NO		X
220454		A18019022DDO	ARIZONA PUBLIC SERVICE COMPANY	OTHER	0	0	0	11/10/2011	3/21/2011	40		NO		X
913770		A18019023CAB	ARIZONA PUBLIC SERVICE COMPANY	MONITOR	122	59		11/10/2011	11/3/2011	39		NO		X
220453		A18019023COO	ARIZONA PUBLIC SERVICE COMPANY	OTHER	0	0	0	11/9/2011	3/22/2011	42		NO		X
215540		A18019023CCA	ARIZONA PUBLIC SERVICE COMPANY	MONITOR				6/12/2009	4/26/2007			NO		X
620723	345410110153201	A17020006DBA	JOSEPH CITY IRRIGATION COMPANY	NON-EXEMPT	300	240	14	4/17/2009	6/14/1982	19	744	YES	X	X
910324		A17020006BAD	ARIZONA PUBLIC SERVICE COMPANY	NON-EXEMPT	400	240	21	4/10/2009	1/19/2009	29		NO		X
910623		A18019023ACC	ARIZONA DEPARTMENT OF TRANSPORTATION	MONITOR	41	41	2	4/1/2009	4/8/2009	25		NO	A	X
910624		A18019023000	ARIZONA DEPARTMENT OF TRANSPORTATION	OTHER	40		8	4/1/2009	4/8/2009	25		NO	A	X
910280		A18019016CBD	ROSS ROGERS	MONITOR	32	32	4	1/29/2009	1/15/2009	18		NO		X
910281		A18019016CBD	ROSS ROGERS	MONITOR	32	32	4	1/29/2009	1/15/2009	18		NO		X
910282		A18019016CBD	ROSS ROGERS	MONITOR	32	32	4	1/29/2009	1/15/2009	18		NO		X
910283		A18019016CBD	ROSS ROGERS	MONITOR	32	32	4	1/29/2009	1/15/2009	18		NO		X
910284		A18019016CBD	ROSS ROGERS	MONITOR	32	32	4	1/29/2009	1/15/2009	18		NO		X
910285		A18019016CBD	ROSS ROGERS	MONITOR	32	32	4	1/29/2009	1/15/2009	18		NO		X
910286		A18019016CBD	ROSS ROGERS	MONITOR	32	32	4	1/29/2009	1/15/2009	18		NO		X
910287		A18019016CBD	ROSS ROGERS	MONITOR	32	32	4	1/29/2009	1/15/2009	18		NO		X
910288		A18019016CBD	ROSS ROGERS	MONITOR	32	32	4	1/29/2009	1/15/2009	18		NO		X
910289		A18019016CBD	ROSS ROGERS	MONITOR	32	32	4	1/29/2009	1/15/2009	18		NO		X
910290		A18019016CBD	ROSS ROGERS	MONITOR	32	32	4	1/29/2009	1/15/2009	18		NO		
910291		A18019016CBD	ROSS ROGERS	MONITOR	32	32	4	1/29/2009	1/15/2009	18		NO		X
910292		A18019016CBD	ROSS ROGERS	MONITOR	32	32	4	1/29/2009	1/15/2009	18		NO		X
910293		A18019016CBD	ROSS ROGERS	MONITOR	32	32	4	1/29/2009	1/15/2009	18		NO		X
910294		A18019016CBD	ROSS ROGERS	MONITOR	32	32	4	1/29/2009	1/15/2009	18		NO		X
910295		A18019016CBD	ROSS ROGERS	MONITOR	32	32	4	1/29/2009	1/15/2009	18		NO		X
910296		A18019016CBD	ROSS ROGERS	MONITOR	32	32	4	1/29/2009	1/15/2009	18		NO		X
910297		A18019016CBD	ROSS ROGERS	MONITOR	32	32	4	1/29/2009	1/15/2009	18		NO		X
910298		A18019016CBD	ROSS ROGERS	MONITOR	32	32	4	1/29/2009	1/15/2009	18		NO		X
910300		A18019016CBD	ROSS ROGERS	MONITOR	32	32	4	1/29/2009	1/15/2009	18		NO		X
910301		A18019016CBD	ROSS ROGERS	MONITOR	32	32	4	1/29/2009	1/15/2009	18		NO		X
910305		A18019016CBD	ROSS ROGERS	MONITOR	32	32	4	1/29/2009	1/15/2009	18		NO		X
910306		A18019016CBD	ROSS ROGERS	MONITOR	32	32	4	1/29/2009	1/15/2009	18		NO		X
910307		A18019016CBD	ROSS ROGERS	MONITOR	32	32	4	1/29/2009	1/15/2009	18		NO		X
910308		A18019016CBD	ROSS ROGERS	MONITOR	32	32	4	1/29/2009	1/15/2009	18		NO		X
910312		A18019016CBD	ROSS ROGERS	MONITOR	32	32		1/29/2009	1/16/2009	18		NO		X
910313		A18019016CBD	ROSS ROGERS	MONITOR	32	32		1/29/2009	1/16/2009	18		NO		X
910314		A18019016CBD	ROSS ROGERS	MONITOR	30	30		1/29/2009	1/16/2009	18		NO		X
910315		A18019016CBD	ROSS ROGERS	MONITOR	32	32	4	1/29/2009	1/16/2009	18		NO		X
910316		A18019016CBD	ROSS ROGERS	MONITOR	32	32	4	1/29/2009	1/16/2009	18		NO		X
910317		A18019016CBD	ROSS ROGERS	MONITOR	32	32	4	1/29/2009	1/16/2009	18		NO		X

Registry No. (55-)	GWSI Site ID	Cadastral	Owner Name	Well Type	Well Depth (ft)	Casing Depth (ft)	Case Dia (in)	Drill Date	Applicaition Date	Water Level (ft)	Pump Capacity (GPM)	Pump Data Available	Completion Report	Log Received
910318		A18019016CBD	ROSS ROGERS	MONITOR	32	32	4	1/29/2009	1/16/2009	18		NO		X
910319		A18019016CBD	ROSS ROGERS	MONITOR	32	32		1/29/2009	1/16/2009	18		NO		X
910320		A18019016CBD	ROSS ROGERS	MONITOR	32	32	4	1/29/2009	1/16/2009	18		NO		X
910321		A18019016BCD	ROSS ROGERS	MONITOR	32	32		1/29/2009	1/16/2009	18		NO		X
910302		A18019016CBD	ROSS ROGERS	MONITOR	30	30		1/25/2009	1/15/2009	18		NO		X
910303		A18019016CBD	ROSS ROGERS	MONITOR	30	30		1/25/2009	1/15/2009	18		NO		X
910304		A18019016CBD	ROSS ROGERS	MONITOR	30	30		1/25/2009	1/15/2009	18		NO		X
910279		A18019016CBD	ROSS ROGERS	MONITOR	32	32	4	1/19/2009	1/15/2009	18		NO		X
910248		A18019015CDA	LOVE'S COUNTRY STORES	MONITOR	20	20		1/14/2009	1/9/2009			NO		X
910010		A18019023DDD	ARIZONA PUBLIC SERVICE CO	MONITOR	180	170	5	12/4/2008	11/6/2008	45		NO		X
910012		A18019035AAA	ARIZONA PUBLIC SERVICE CO	MONITOR	46	40	8	11/24/2008	11/6/2008	34		NO		X
910011		A18019026DBA	ARIZONA PUBLIC SERVICE CO	MONITOR	70	60	8	11/23/2008	11/6/2008	38		NO		X
910008		A18019026DAB	ARIZONA PUBLIC SERVICE CO	MONITOR	90	65	5	11/22/2008	11/6/2008	30		NO		X
910007		A18019025CDC	ARIZONA PUBLIC SERVICE CO	MONITOR	60		10	11/21/2008	11/6/2008			NO		X
910013		A18019025BDA	ARIZONA PUBLIC SERVICE CO	MONITOR	80	70	5	11/21/2008	11/6/2008	34		NO		X
910009		A18019023DDD	ARIZONA PUBLIC SERVICE CO	MONITOR	75	70	5	11/20/2008	11/6/2008	45		NO		X
909987		A18020030BBA	ARIZONA PUBLIC SERVICE COMPANY CHOLLA POWER PLANT	MONITOR	290	280	5	11/18/2008	10/30/2008			NO		X
909988		A18020030BBA	ARIZONA PUBLIC SERVICE COMPANY CHOLLA POWER PLANT	MONITOR	385	380	5	11/15/2008	10/30/2008	140		NO		X
909803		A18019028CCC	ARIZONA PUBLIC SERVICE COMPANY CHOLLA POWER PLANT	MONITOR	510	500	5	11/6/2008	9/25/2008	29		NO		X
909801		A18019022CCC	ARIZONA PUBLIC SERVICE COMPANY CHOLLA POWER PLANT	MONITOR	535	530	5	10/30/2008	9/25/2008	30		NO		X
909802		A17020006CBB	ARIZONA PUBLIC SERVICE COMPANY CHOLLA POWER PLANT	MONITOR	410	400	5	10/7/2008	9/25/2008	64		NO		X
909797		A17020006CBC	ARIZONA PUBLIC SERVICE COMPANY CHOLLA POWER PLANT	MONITOR	400	400	5	10/3/2008	9/24/2008	28		NO		X
217762		A18019016CCA	DELWIN OR EVELYN SOLOMON	NON-EXEMPT	400	400	8	9/18/2008	5/8/2008	45	400	NO	X	X
909093		A18019016CBD	THRIFTWAY MARKETING	MONITOR	20	20	2	5/31/2008	5/23/2008			NO		X
909096		A18019016DAC	THRIFTWAY MARKETING	MONITOR	35	35	2	5/31/2008	5/23/2008	20		NO		X
909103		A18019016CBD	THRIFTWAY MARKETING	OTHER	20	20		5/31/2008	5/23/2008			NO		X
909105		A18019016CBD	THRIFTWAY MARKETING	OTHER	18	18	2	5/31/2008	5/23/2008			NO		X
909106		A18019016CBD	THRIFTWAY MARKETING	OTHER	18	18	2	5/31/2008	5/23/2008			NO		X
909089		A18019016CBD	THRIFTWAY MARKETING	MONITOR	35	35	2	5/30/2008	5/23/2008	20		NO		X
909094		A18019016DAC	THRIFTWAY MARKETING	MONITOR	35	35	2	5/30/2008	5/23/2008	20		NO		X
909098		A18019016DAC	THRIFTWAY MARKETING	MONITOR	32	32		5/29/2008	5/23/2008	20		NO		X
909099		A18019016CBD	THRIFTWAY MARKETING	MONITOR	32	32	2	5/29/2008	5/23/2008	20		NO		X
909100		A18019016CBD	THRIFTWAY MARKETINGT	MONITOR	32	32	2	5/29/2008	5/23/2008	20		NO		X
909605		A18019016DAC	THRIFTWAY MARKETING	MONITOR	32	30	2	5/29/2008	8/20/2008	20		NO		X
909085		A18019022CBC	AZTEC LAND & CATTLE CO LTD.	OTHER	90		7	5/28/2008	5/23/2008			NO	A	X
909086		A18019016BCD	THRIFTWAY MARKETING	MONITOR	32	30	2	5/28/2008	5/23/2008	20		NO		X
909090		A18019016CBD	THRIFTWAY MARKETING	MONITOR	32	30	2	5/28/2008	5/23/2008	20		NO		X
909091		A18019016CBD	THRIFTWAY MARKETING	MONITOR	32	30	2	5/28/2008	5/23/2008	20		NO		X
909092		A18019016CBD	THRIFTWAY MARKETING	MONITOR	35	35	2	5/28/2008	5/23/2008	20		NO		X
909088		A18019016CBD	THRIFTWAY MARKETING	MONITOR	30	30	2	5/27/2008	5/23/2008	20		NO		X
908742		A17019002CCD	ARIZONA PUBLIC SERVICE CORP.	NON-EXEMPT	500	490	21	4/22/2008	3/27/2008	91		NO		X
908486		A18019016DBC	SPARTA INVESTMENTS	MONITOR	30	30	8	3/3/2008	2/8/2008	25		NO		X
907660		A17019002BBB	ARIZONA PUBLIC SERVICE COMPANY	NON-EXEMPT	500	490	21	2/7/2008	8/23/2007	67		NO		X

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908367		A17019002DCC	ARIZONA PUBLIC SERVICE	MONITOR	505	500	5	1/14/2008	1/18/2008	90		NO		X
907835		A17019004CBC	ARIZONA PUBLIC SERVICE CO	MONITOR	500	500	5	11/7/2007	9/21/2007	108		NO		X
907572		A17019004ADC	ARIZONA PUBLIC SERVICE CO	NON-EXEMPT	530	520	21	10/15/2007	8/7/2007	89		NO		X
907990		A17019002ADD	ARIZONA PUBLIC SERVICE CO	OTHER	360		8	10/9/2007	10/17/2007			NO		X
907883		A17019002ADD	ARIZONA PUBLIC SERVICE CO	MONITOR	360		8	10/8/2007	9/28/2007			NO		X
907834		A17019002CCD	ARIZONA PUBLIC SERVICE CO	MONITOR	500	500	5	9/26/2007	9/21/2007	90		NO		X
907565		A18019034DBA	ARIZONA PUBLIC SERVICE CO	MONITOR	500	500	5	9/22/2007	8/7/2007			NO		X
907567		A18019036BCC	ARIZONA PUBLIC SERVICE CO	MONITOR	500	500	5	9/19/2007	8/7/2007	38		NO		X
907561		A18019026CCC	ARIZONA PUBLIC SERVICE CO	MONITOR	500	500	8	9/7/2007	8/7/2007	35		NO		X
907678		A18019016CBD	SPARTA INVESTMENTS	MONITOR	31	30	8	8/29/2007	8/27/2007	25		NO		X
907679		A18019016CBD	SPARTA INVESTMENTS	MONITOR	31	30	8	8/29/2007	8/27/2007	25		NO		X
907680		A18019016CBD	SPARTA INVESTMENTS	MONITOR	31	30	8	8/29/2007	8/27/2007	25		NO		X
907571		A17019002BBB	ARIZONA PUBLIC SERVICE CO	MONITOR	500	500	5	8/28/2007	8/7/2007			NO		X
907676		A18019016CBD	SPARTA INVESTMENTS	MONITOR	16	16	8	8/28/2007	8/27/2007	0		NO		X
907677		A18019016CBD	SPARRA INVESTMENTS	MONITOR	40	40	2	8/28/2007	8/27/2007	25		NO		X
907681		A18019016CBD	SPARTA INVESTMENTS	MONITOR	16	16	8	8/28/2007	8/27/2007	0		NO		X
907562		A17019002AAA	ARIZONA PUBLIC SERVICE CO	MONITOR	251	250	5	8/23/2007	8/7/2007			NO		X
907563		A17019002AAA	ARIZONA PUBLIC SERVICE CO	MONITOR	502	500	9	8/23/2007	8/7/2007	66		NO		X
906365		A18019036BBA	ARIZONA PUBLIC SERVICE COMPANY	NON-EXEMPT	500	470	17	8/11/2007	2/1/2007	34		YES		X
906364		A18019035AAB	ARIZONA PUBLIC SERVICE CORPORATION	NON-EXEMPT	481	470	20	7/15/2007	2/1/2007	30		YES		X
215541		A18019023CCD	ARIZONA PUBLIC SERVICE COMPANY	MONITOR	50	50	5	6/13/2007	4/26/2007	38		NO		X
901893		A18019016CCB	ADOT, ATTN: J.J. LIU	MONITOR	30	30	2	3/23/2005	3/16/2005	20		NO	A	X
205719		A18019023CCA	ARIZONA PUBLIC SERVICE COMPANY	MONITOR	47	45	4	3/9/2005	10/29/2004	34		NO		X
205720		A18019023CCA	ARIZONA PUBLIC SERVICE CO	MONITOR	47	45	2	3/9/2005	10/29/2004	35		NO	A	X
599261		A18019017CDD	JOSEPH CITY SANITARY DISTRICT	MONITOR	30	30	6	8/5/2003	7/1/2003	6		NO		X
593169		A18019034DBC	MILTON H DESPAIN	EXEMPT	115	50	6	9/7/2002	6/20/2002	43		NO		X
588012		A18019016CAC	HARTLEY TURLEY	MONITOR	45	45	4	3/8/2002	7/19/2001	26		NO		X
588013		A18019016CAC	HARTLEY TURLEY	MONITOR	40	40	4	3/6/2002	7/19/2001	9		NO	A	X
580185		A17020006BAA	BOYD L WESTOVER	EXEMPT	173	38	6	8/15/2000	3/16/2000	26		NO		X
579541		A18020030CAC	ARIZONA PUBLIC SERVICE	MONITOR	60	50	2	3/28/2000	2/8/2000	27		NO		X
579543		A18020030CBD	ARIZONA PUBLIC SERVICE	MONITOR	85	75	2	3/27/2000	2/8/2000	25		NO		X
579540		A18020030CAC	ARIZONA PUBLIC SERVICE	MONITOR	40	30	2	3/23/2000	2/8/2000	42		NO		X
579544		A18020030CBD	ARIZONA PUBLIC SERVICE	MONITOR	85	75	2	3/23/2000	2/8/2000	37		NO		X
579542		A18020030CBD	ARIZONA PUBLIC SERVICE	MONITOR	62	52	2	3/22/2000	2/8/2000			NO		X
579546		A18020030CBD	ARIZONA PUBLIC SERVICE	MONITOR	83	73	2	3/21/2000	2/8/2000	46		NO		X
579545		A18020030CBD	ARIZONA PUBLIC SERVICE	MONITOR	104	90	2	3/20/2000	2/8/2000	90		NO		X
569370		A17019003BBB	EL PASO NATURAL GAS CO. LLC., A KINDER MORGAN COMPANY	OTHER	500	130	8	9/27/1998	6/19/1998			NO		X
566237		A18019018BCD	DELWIN OR EVELYN SOLOMON	EXEMPT	400	155	10	5/13/1998	12/4/1997	14		NO		X
560489		A18020030CCC	AZ PUBLIC SERVICE,	MONITOR	30	0	4	2/11/1997	11/26/1996	29	0	NO	N	X
553267		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	49	49	5	12/21/1995	11/30/1995	2	25	NO	X	X
553269		A18020030CCC	AZ PUBLIC SERVICE,	MONITOR	45	45	4	12/19/1995	11/30/1995	9	0	NO	N	X
553271		A18019023CDD	AZ PUBLIC SERVICE,	MONITOR	45	20	4	12/18/1995	11/30/1995	29	0	NO	N	X
547254		A18019025000	ARIZONA PUBLIC SERVICE COMPANY	OTHER	50	0	0	6/14/1995	6/2/1995	0	0	NO	N	X

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547253		A18020030000	ARIZONA PUBLIC SERVICE COMPANY	OTHER	37	0	0	6/7/1995	6/2/1995	0	0	NO	N	X
547036		A18019023CDD	ARIZONA PUBLIC SERVICE CO	MONITOR	46	45	4	1/11/1995	12/30/1994	25	0	NO	A	X
547035		A18019023CDD	ARIZONA PUBLIC SERVICE CO	MONITOR	46	45	4	1/10/1995	12/30/1994	25	0	NO	A	X
547033		A18019023CDD	APS,	OTHER	25	0	0	1/9/1995	12/30/1994	25	0	NO	N	X
547034		A18019023CDD	APS,	MONITOR	46	45	4	1/9/1995	12/30/1994	25	0	NO	N	X
546245		A18019023CDA	APS,	OTHER	187	187	6	12/9/1994	10/28/1994	0	0	NO	N	X
541684		A18019015BCC	EL PASO NATURAL GAS,	OTHER	500	180	8	12/17/1993	12/3/1993	0	0	NO	N	X
541134	345512110151701	A18020031ACC	KEMPTON, CARL,	EXEMPT	160	100	6	11/8/1993	10/20/1993	115	0	NO	C	X
540672		A18019022DDDB	AZ PUBLIC SERVICE,	MONITOR	45	45	4	9/24/1993	9/15/1993	18	0	NO	N	X
540668		A18019023CDD	AZ PUBLIC SERVICE,	MONITOR	45	45	4	9/23/1993	9/15/1993	23	0	NO	N	X
540041		A18019016DCC	RADIAN CORP,	MONITOR	20	20	4	9/16/1993	8/17/1993	15	0	NO	N	X
540042		A18019016DCA	RADIAN CORP,	MONITOR	20	20	4	9/16/1993	8/17/1993	13	0	NO	N	X
540040		A18019016DCC	RADIAN CORP,	MONITOR	20	20	4	9/15/1993	8/17/1993	14	0	NO	N	X
539986		A18020031BBB	HUNT, BOYCE,B	EXEMPT	130	30	61	9/7/1993	7/16/1993	105	0	NO	C	X
539863		A18019013CCD	AZ PUBLIC SERVICE,	EXEMPT	35	35	5	7/25/1993	7/12/1993	25	0	NO		X
539864		A18019013CCD	AZ PUBLIC SERVICE,	EXEMPT	40	40	5	7/24/1993	7/12/1993	25	0	NO		X
539861		A18019013CCD	AZ PUBLIC SERVICE,	EXEMPT	40	40	5	7/23/1993	7/12/1993	25	0	NO		X
539862		A18019013CCD	AZ PUBLIC SERVICE,	EXEMPT	40	40	5	7/22/1993	7/12/1993	25	0	NO		X
539860		A18019013CCD	AZ PUBLIC SERVICE,	EXEMPT	40	40	5	7/21/1993	7/12/1993	25	0	NO		X
539099		A18019013CCD	AZ PUBLIC SERVICE,	EXEMPT	40	20	5	7/9/1993	5/12/1993	5	0	NO	C	X
539097		A18019013CCD	AZ PUBLIC SERVICE,	EXEMPT	40	20	5	7/8/1993	5/12/1993	5	0	NO	C	X
539098		A18019013CCD	AZ PUBLIC SERVICE,	EXEMPT	40	20	5	7/8/1993	5/12/1993	5	0	NO	C	X
539100		A18019013CCD	AZ PUBLIC SERVICE,	EXEMPT	20	0	0	7/7/1993	5/12/1993	5	0	NO	C	X
539101		A18019013CCD	AZ PUBLIC SERVICE,	EXEMPT	12	0	0	7/7/1993	5/12/1993	1	0	NO	C	X
539102		A18019013CCD	AZ PUBLIC SERVICE,	EXEMPT	21	0	0	7/7/1993	5/12/1993	5	0	NO	C	X
539104		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	40	20	5	6/2/1993	5/12/1993	1	0	NO	C	X
539103		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	40	20	5	6/1/1993	5/12/1993	1	0	NO	C	X
539096		A18019013CCD	AZ PUBLIC SERVICE,	EXEMPT	40	20	5	5/28/1993	5/12/1993	5	0	NO	C	X
539095		A18019013CCD	AZ PUBLIC SERVICE,	EXEMPT	40	20	5	5/27/1993	5/12/1993	5	0	NO	C	X
539119		A18019013CCD	AZ PUBLIC SERVICE,	MONITOR	20	10	2	5/19/1993	5/12/1993	1	0	NO	N	X
539120		A18019013CCD	AZ PUBLIC SERVICE,	MONITOR	20	10	2	5/19/1993	5/12/1993	1	0	NO	N	X
539121		A18019013CCD	AZ PUBLIC SERVICE,	MONITOR	20	10	2	5/19/1993	5/12/1993	1	0	NO	N	X
537495		A18020031CDC	WESTOVER, BOYD,L	EXEMPT	125	125	0	2/2/1993	12/1/1992	6	0	NO	C	X
536059		A18020030CBA	AZ PUBLIC SERVICE,	MONITOR	40	0	0	7/28/1992	7/16/1992	33	0	NO	N	X
536055		A18020030CBA	AZ PUBLIC SERVICE,	MONITOR	40	18	4	7/23/1992	7/16/1992	33	0	NO	N	X
536058		A18020030CBA	AZ PUBLIC SERVICE,	MONITOR	30	0	0	7/22/1992	7/16/1992	30	0	NO	N	X
536057		A18020030CBA	AZ PUBLIC SERVICE,	MONITOR	51	0	0	7/21/1992	7/16/1992	50	0	NO	N	X
536056		A18020030CBA	AZ PUBLIC SERVICE,	MONITOR	21	0	0	7/20/1992	7/16/1992	20	0	NO	N	X
533817		A18020030CBA	AZ PUBLIC SERVICE,	MONITOR	141	140	5	2/15/1992	11/26/1991	30	0	NO	N	X
533820		A18020030CAA	AZ PUBLIC SERVICE,	MONITOR	96	20	5	2/15/1992	11/26/1991	30	0	NO	N	X
533814		A18019013CCA	AZ PUBLIC SERVICE,	MONITOR	62	62	5	1/27/1992	11/26/1991	4	0	NO	N	X
533811		A18019013CCA	AZ PUBLIC SERVICE,	MONITOR	259	258	5	1/22/1992	11/26/1991	114	0	NO	N	X
533812		A18019013CCA	AZ PUBLIC SERVICE,	MONITOR	293	292	5	1/12/1992	11/26/1991	83	0	NO	N	X

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533816		A18019023AAA	AZ PUBLIC SERVICE,	MONITOR	240	238	5	12/19/1991	11/26/1991	80	0	NO	N	X
533813		A18019023AAA	AZ PUBLIC SERVICE,	MONITOR	280	279	5	12/16/1991	11/26/1991	80	0	NO	N	X
529605		A18019016DCB	RADIAN CORP,	MONITOR	15	10	2	5/29/1991	5/20/1991	13	0	NO	N	X
529604		A18019016DCB	RADIAN CORP,	MONITOR	18	10	2	5/28/1991	5/20/1991	13	0	NO	N	X
529606		A18019016DCC	RADIAN CORP,	MONITOR	25	20	2	5/28/1991	5/20/1991	13	0	NO	N	X
529607		A18019016DCA	RADIAN CORP,	MONITOR	15	10	2	5/28/1991	5/20/1991	13	0	NO	N	X
524566		A18019023000	AZ PUBLIC SERVICE,	OTHER	185	40	6	6/8/1989	5/17/1989	0	0	NO	N	X
519638		A18019023CDD	AZ PUBLIC SERVICE,	MONITOR	12	10	1	12/2/1987	11/13/1987	0	0	NO	N	X
519639		A18019023CDD	AZ PUBLIC SERVICE,	MONITOR	12	10	1	12/2/1987	11/13/1987	4	0	NO	N	X
519640		A18019023CDD	AZ PUBLIC SERVICE,	MONITOR	12	10	1	12/2/1987	11/13/1987	4	0	NO	N	X
518943		A18019015BC0	EL PASO NATURAL GAS,	OTHER	500	190	8	10/15/1987	9/2/1987	0	0	NO	N	X
511169		A18019023B00	HARCO CORP,	OTHER	205	205	10	5/23/1985	5/17/1985	0	0	NO	N	X
506587		A18019030CBD	AZ PUBLIC SERVICE,	OTHER	40	35	5	11/4/1983	11/1/1983	3	0	NO	N	X
506586		A18019023ABB	ARIZONA PUBLIC SERVICE COMPANY	OTHER	58	58	5	11/2/1983	11/1/1983	36	0	NO	N	X
506371		A18019023DAB	AZ PUBLIC SERVICE,	EXEMPT	54	47	5	11/1/1983	9/21/1983	37	0	NO	N	X
506369		A18019023AAC	AZ PUBLIC SERVICE,	EXEMPT	39	0	0	10/26/1983	9/21/1983	0	0	NO	N	X
506370		A18019023ADA	AZ PUBLIC SERVICE,	EXEMPT	159	58	5	10/26/1983	9/21/1983	29	0	NO	N	X
506366		A18019024BBB	AZ PUBLIC SERVICE,	EXEMPT	118	65	5	10/21/1983	9/21/1983	26	0	NO	N	X
506368		A18019013CDD	AZ PUBLIC SERVICE,	EXEMPT	93	75	5	10/19/1983	9/21/1983	32	0	NO	N	X
506367		A18019013DBD	AZ PUBLIC SERVICE,	EXEMPT	93	84	5	10/14/1983	9/21/1983	45	0	NO	N	X
506365		A18019023AAA	AZ PUBLIC SERVICE,	EXEMPT	54	54	5	10/11/1983	9/21/1983	20	0	NO	N	X
506364		A18019023AAA	AZ PUBLIC SERVICE,	EXEMPT	108	104	5	10/7/1983	9/21/1983	22	0	NO	N	X
506372		A18019023ACA	AZ PUBLIC SERVICE,	EXEMPT	94	65	5	10/4/1983	9/21/1983	32	0	NO	N	X
505119		A18019016DDC	RANDALL, A BLAINE,	NON-EXEMPT	450	280	12	8/15/1983	4/5/1983	40	800	NO	X	X
502100		A18019016DDC	BARRETT,W W	EXEMPT	280	245	5	9/22/1982	2/23/1982	35	35	NO	X	X
502294		A18019016DCD	GC RICE 3N, LLC	EXEMPT	270	229	6	4/1/1982	3/16/1982	20	0	NO	X	X
638034		A18020031BDC	HUNT,D	EXEMPT	130	40	9	10/20/1980	6/14/1982	33	25	NO		
085748		A18019022ACC	RANDALL,D S	EXEMPT	365	365	8	8/29/1980	9/24/1980	74	0	NO		
086141		A18019023CBB	ARIZONA PUBLIC SERVICE COMPANY	NON-EXEMPT	88	88	14	1/1/1980	9/24/1997	25	0	NO	A	
086142		A18019023CBB	ARIZONA PUBLIC SERVICE COMPANY	NON-EXEMPT	87	87	14	1/1/1980	9/24/1997	25	0	NO	A	
086143		A18019023CBB	ARIZONA PUBLIC SERVICE COMPANY	NON-EXEMPT	90	90	14	1/1/1980	9/24/1997	25	0	NO	A	
086144		A18019023CBB	ARIZONA PUBLIC SERVICE COMPANY	NON-EXEMPT	83	83	14	1/1/1980	9/24/1997	25	0	NO	A	
086145		A18019023CBB	ARIZONA PUBLIC SERVICE COMPANY	NON-EXEMPT	80	80	14	1/1/1980	9/24/1997	25	0	NO	A	
086146		A18019023CBB	ARIZONA PUBLIC SERVICE COMPANY	NON-EXEMPT	86	86	14	1/1/1980	9/24/1997	25	0	NO	A	
086147		A18019023CBB	ARIZONA PUBLIC SERVICE COMPANY	NON-EXEMPT	85	85	14	1/1/1980	9/24/1997	25	0	NO	A	
086148		A18019023CBB	ARIZONA PUBLIC SERVICE COMPANY	NON-EXEMPT	83	83	14	1/1/1980	9/24/1997	25	0	NO	A	
086149		A18019023CBB	ARIZONA PUBLIC SERVICE COMPANY	NON-EXEMPT	90	90	14	1/1/1980	9/24/1997	25	0	NO	A	
086150		A18019023CBB	ARIZONA PUBLIC SERVICE COMPANY	NON-EXEMPT	87	87	14	1/1/1980	9/24/1997	25	0	NO	A	
086151		A18019023CBB	ARIZONA PUBLIC SERVICE COMPANY	NON-EXEMPT	63	63	14	1/1/1980	9/24/1997	25	0	NO	A	
086152		A18019023CBB	ARIZONA PUBLIC SERVICE COMPANY	NON-EXEMPT	42	42	14	1/1/1980	9/24/1997	0	0	NO	A	
086153		A18019023CBB	ARIZONA PUBLIC SERVICE COMPANY	NON-EXEMPT	45	45	14	1/1/1980	9/24/1997	45	0	NO	A	
613176		A18019014DAC	AZ PUBLIC SERVICE,	EXEMPT	80	53	1	8/21/1979	6/10/1982	77	0	NO		
613213		A18020030CBA	AZ PUBLIC SERVICE,	EXEMPT	120	88	1	5/19/1979	6/10/1982	55	0	NO		

Registry No. (55-)	GWSI Site ID	Cadastral	Owner Name	Well Type	Well Depth (ft)	Casing Depth (ft)	Case Dia (in)	Drill Date	Applicaiton Date	Water Level (ft)	Pump Capacity (GPM)	Pump Data Available	Completion Report	Log Received
613214		A18020030CBA	AZ PUBLIC SERVICE,	EXEMPT	120	88	2	5/16/1979	6/10/1982	96	0	NO		
613223		A18019025ADA	AZ PUBLIC SERVICE,	EXEMPT	80	58	1	5/8/1979	6/10/1982	57	0	NO		
613215		A18020030CBA	AZ PUBLIC SERVICE,	EXEMPT	116	88	1	5/7/1979	6/10/1982	77	0	NO		
613218		A18020030BCC	AZ PUBLIC SERVICE,	EXEMPT	100	79	1	5/1/1979	6/10/1982	59	0	NO		
613219		A18019030BCC	AZ PUBLIC SERVICE,	EXEMPT	103	81	1	4/18/1979	6/10/1982	80	0	NO		
613204		A18019025ABA	AZ PUBLIC SERVICE,	EXEMPT	50	28	1	4/8/1979	6/10/1982	0	0	NO		
613205		A18019024DCD	AZ PUBLIC SERVICE,	EXEMPT	57	35	1	4/8/1979	6/10/1982	0	0	NO		
613202		A18020030DDA	AZ PUBLIC SERVICE,	EXEMPT	50	28	1	4/7/1979	6/10/1982	0	31	NO		
613203		A18019025AAC	AZ PUBLIC SERVICE,	EXEMPT	50	28	1	4/7/1979	6/10/1982	39	0	NO		
613201		A18020019CCA	AZ PUBLIC SERVICE,	EXEMPT	54	32	1	4/6/1979	6/10/1982	0	0	NO		
613210		A18020030CDA	AZ PUBLIC SERVICE,	EXEMPT	50	28	1	4/6/1979	6/10/1982	0	0	NO		
613211		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	70	43	1	4/6/1979	6/10/1982	58	0	NO		
613209		A18020030CDB	AZ PUBLIC SERVICE,	EXEMPT	51	29	1	4/5/1979	6/10/1982	0	0	NO		
613212		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	51	29	1	4/5/1979	6/10/1982	18	0	NO		
613220		A18019025ADD	AZ PUBLIC SERVICE,	EXEMPT	60	38	1	4/4/1979	6/10/1982	51	0	NO		
613221		A18019025ADD	AZ PUBLIC SERVICE,	EXEMPT	50	28	1	4/4/1979	6/10/1982	21	0	NO		
613217		A18020030CBB	AZ PUBLIC SERVICE,	EXEMPT	37	19	1	4/3/1979	6/10/1982	21	0	NO		
613222		A18019025ADD	AZ PUBLIC SERVICE,	EXEMPT	50	28	1	4/3/1979	6/10/1982	13	0	NO		
613206		A18020030DCB	AZ PUBLIC SERVICE,	EXEMPT	60	38	1	3/27/1979	6/10/1982	0	0	NO		
613208		A18020030CDA	AZ PUBLIC SERVICE,	EXEMPT	60	38	1	3/27/1979	6/10/1982	0	0	NO		
613207		A18020030DCB	AZ PUBLIC SERVICE,	EXEMPT	60	38	1	3/26/1979	6/10/1982	53	0	NO		
613216		A18020030CBB	AZ PUBLIC SERVICE,	EXEMPT	70	43	1	3/26/1979	6/10/1982	11	0	NO		
613180		A18019014DCD	AZ PUBLIC SERVICE,	EXEMPT	54	31	1	3/23/1979	6/10/1982	33	0	NO		
613173		A18019024BBB	AZ PUBLIC SERVICE,	EXEMPT	50	28	1	3/22/1979	6/10/1982	19	0	NO		
613172		A18019024BBB	AZ PUBLIC SERVICE,	EXEMPT	50	18	1	3/21/1979	6/10/1982	9	0	NO		
613174		A18019014DAA	AZ PUBLIC SERVICE,	EXEMPT	80	48	1	3/20/1979	6/10/1982	52	0	NO		
613175		A18019014DDb	AZ PUBLIC SERVICE,	EXEMPT	81	41	1	3/12/1979	6/10/1982	30	0	NO		
613178		A18019014DCD	AZ PUBLIC SERVICE,	EXEMPT	67	38	1	3/11/1979	6/10/1982	39	0	NO		
613179		A18019014DCD	AZ PUBLIC SERVICE,	EXEMPT	67	38	1	3/11/1979	6/10/1982	41	0	NO		
613177		A18019013CAA	AZ PUBLIC SERVICE,	EXEMPT	62	40	1	3/9/1979	6/10/1982	32	0	NO		
613181		A18019013CAD	AZ PUBLIC SERVICE,	EXEMPT	57	25	1	3/8/1979	6/10/1982	30	0	NO		
613183		A18019013CCA	AZ PUBLIC SERVICE,	EXEMPT	70	43	1	3/8/1979	6/10/1982	40	0	NO		
613184		A18019013CCA	AZ PUBLIC SERVICE,	EXEMPT	50	28	1	3/7/1979	6/10/1982	32	0	NO		
613191		A18019023AAB	AZ PUBLIC SERVICE,	EXEMPT	58	37	0	3/6/1979	6/10/1982	5	0	NO		
613192		A18019023ABA	AZ PUBLIC SERVICE,	EXEMPT	50	27	1	2/27/1979	6/10/1982	12	0	NO		
613182		A18019013CAD	AZ PUBLIC SERVICE,	EXEMPT	53	28	1	2/26/1979	6/10/1982	33	0	NO		
613185		A18019013CCA	AZ PUBLIC SERVICE,	EXEMPT	50	28	1	2/25/1979	6/10/1982	18	0	NO		
613186		A18019013CCC	AZ PUBLIC SERVICE,	EXEMPT	50	28	1	2/25/1979	6/10/1982	3	0	NO		
613187		A18019013CCC	AZ PUBLIC SERVICE,	EXEMPT	50	25	1	2/24/1979	6/10/1982	0	0	NO		
613188		A18019013CCC	AZ PUBLIC SERVICE,	EXEMPT	55	21	1	2/23/1979	6/10/1982	21	0	NO		
613189		A18019013CCC	AZ PUBLIC SERVICE,	EXEMPT	55	31	1	2/22/1979	6/10/1982	7	0	NO		
613190		A18019024BBB	AZ PUBLIC SERVICE,	EXEMPT	60	33	1	2/21/1979	6/10/1982	0	0	NO		
613165		A18019023AAA	AZ PUBLIC SERVICE,	EXEMPT	177	88	1	11/1/1978	6/10/1982	62	0	NO		

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613166		A18019023AAA	AZ PUBLIC SERVICE,	EXEMPT	164	88	1	11/1/1978	6/10/1982	20	0	NO		
613167		A18019023AAB	AZ PUBLIC SERVICE,	EXEMPT	137	88	1	11/1/1978	6/10/1982	54	0	NO		
613163		A18019024BBB	AZ PUBLIC SERVICE,	EXEMPT	77	50	1	10/31/1978	6/10/1982	77	0	NO		
613164		A18019023AAA	AZ PUBLIC SERVICE,	EXEMPT	44	28	1	10/31/1978	6/10/1982	28	0	NO		
613168		A18019023AAB	AZ PUBLIC SERVICE,	EXEMPT	50	33	2	10/31/1978	6/10/1982	1	0	NO		
613093	345526110200601	A18019028CDC	AZ PUBLIC SERVICE,	NON-EXEMPT	245	58	12	10/27/1978	6/10/1982	14	800	YES	X	
613424		A18019032AAA	AZTEC LAND CO LLC	EXEMPT	854	136	11	8/1/1978	6/9/1982	25	0	NO		
613425		A17019005ADD	AZTEC LAND CO LLC	EXEMPT	845	112	10	7/21/1978	6/9/1982	42	0	NO		
613095	345415110200801	A17019004BDB	AZ PUBLIC SERVICE,	NON-EXEMPT	430	85	24	7/1/1978	6/10/1982	30	900	YES	X	
613412	345342110204801	A17019005DCD	AZTEC LAND CO LLC	NON-EXEMPT	365	259	24	7/1/1978	6/9/1982	69	500	YES		
613408	345500110210301	A18019032BDD	AZTEC LAND CO LLC	NON-EXEMPT	500	314	24	6/13/1978	6/9/1982	98	1050	YES	X	
613409	345424110221301	A17019006BAB	AZTEC LAND CO LLC	NON-EXEMPT	500	363	24	4/10/1978	6/9/1982	179	500	YES		
613094	345340110193001	A17019004DDC	AZ PUBLIC SERVICE,	NON-EXEMPT	550	61	24	3/5/1978	6/10/1982	87	1000	YES		
613407	345415110210301	A17019005BDA	AZTEC LAND CO LLC	NON-EXEMPT	490	279	24	1/1/1978	6/9/1982	64	850	YES	X	
613418		A18019035DDD	AZTEC LAND CO LLC	EXEMPT	560	120	11	12/31/1977	6/9/1982	65	0	NO	X	X
613404	345444110192501	A18019033DAD	AZTEC LAND CO LLC	NON-EXEMPT	410	269	24	10/26/1977	6/9/1982	26	600	YES		
628496	345720110212601	A18019017CBC	JOSEPH CITY WATER,	NON-EXEMPT	400	300	10	10/1/1977	5/13/1982	50	600	YES		
613422		A18019030DCD	AZTEC LAND CO LLC	EXEMPT	670	288	10	6/1/1977	6/9/1982	72	0	NO		
613411	345354110162701	A17019001DBD	AZTEC LAND CO LLC	NON-EXEMPT	500	400	24	4/1/1977	6/9/1982	65	450	YES		
613143		A18019021CCB	AZ PUBLIC SERVICE,	EXEMPT	1005	267	10	1/1/1977	6/10/1982	8	0	NO		
613402	345344110165101	A17019001CDC	AZTEC LAND CO LLC	NON-EXEMPT	470	279	24	1/1/1977	6/9/1982	69	1000	YES		
613413		A18019027BBB	AZTEC LAND CO LLC	EXEMPT	840	285	10	1/1/1977	6/9/1982	14	0	NO		
613414		A17019005BBB	AZTEC LAND CO LLC	EXEMPT	1020	282	10	1/1/1977	6/9/1982	111	0	NO		
613415		A17019001ADD	AZTEC LAND CO LLC	EXEMPT	755	50	10	1/1/1977	6/9/1982	45	0	NO		
613417		A18019027DDD	AZTEC LAND CO LLC	EXEMPT	900	163	10	1/1/1977	6/9/1982	14	0	NO		
613421		A18019035DDD	AZTEC LAND CO LLC	EXEMPT	520	57	10	1/1/1977	6/9/1982	33	0	NO		
613403	345411110161601	A17019001ADA	AZTEC LAND CO LLC	NON-EXEMPT	390	278	24	11/1/1976	6/9/1982	39	700	YES	X	
620724		A18019017ADC	JOSEPH CITY IRRIG CO,	NON-EXEMPT	425	275	12	1/1/1975	6/14/1982	90	1200	YES		
613400	345413110184401	A17019003ACB	AZTEC LAND CO LLC	NON-EXEMPT	550	260	24	7/17/1974	6/9/1982	105	638	YES	X	X
613154		A18019022DCA	AZ PUBLIC SERVICE,	EXEMPT	100	100	6	9/7/1973	6/10/1982	5	0	NO		
613153		A18019026DAB	AZ PUBLIC SERVICE,	EXEMPT	92	80	6	9/4/1973	6/10/1982	40	0	NO		
613152		A18019025CDC	ARIZONA PUBLIC SERVICE CHOLLA POWER PLANT	EXEMPT	56	49	6	8/30/1973	6/10/1982	32	0	NO	A	
613151		A18019026CAA	AZ PUBLIC SERVICE,	EXEMPT	57	53	6	8/28/1973	6/10/1982	40	0	NO		
613150		A18019035BDB	AZ PUBLIC SERVICE,	EXEMPT	57	50	6	8/23/1973	6/10/1982	45	0	NO		
628495	345722110212901	A18019017CBC	JOSEPH CITY WATER,	NON-EXEMPT	390	290	10	9/7/1972	5/13/1982	50	600	YES		
601814	345733110213501	A18019018DAA	PORTER,H D	NON-EXEMPT	322	250	8	1/1/1970	1/18/1982	20	10	NO		
613091	345345110175201	A17019002DBC	AZ PUBLIC SERVICE,	NON-EXEMPT	487	320	16	8/1/1967	6/10/1982	55	750	YES		
608472	345637110191901	A18019022CBC	LARRY E. & AVA RACHELE BALDWIN	NON-EXEMPT	440	343	10	3/17/1967	5/10/1982	10	1000	NO		
613090	345434110170501	A18019036CCD	AZ PUBLIC SERVICE,	NON-EXEMPT	350	60	24	3/8/1962	6/10/1982	37	2000	YES		
613089	345434110171201	A18019036CCC	AZ PUBLIC SERVICE,	NON-EXEMPT	350	55	10	12/1/1961	6/10/1982	27	950	YES	X	
613088		A18019026ACB	AZ PUBLIC SERVICE,	NON-EXEMPT	595	695	30	1/1/1961	6/10/1982	0	1200	YES		
613148		A18019026ACB	AZ PUBLIC SERVICE,	EXEMPT	595	595	0	1/1/1961	6/10/1982	0	0	NO		
613145		A18019026CBB	AZ PUBLIC SERVICE,	EXEMPT	570	0	0	1/1/1959	6/10/1982	30	0	NO		

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613149	345613110180601	A18019026BBA	AZ PUBLIC SERVICE,	EXEMPT	570	185	12	1/1/1959	6/10/1982	0	0	NO		
600527		A18019016000	RANDALL, A BLAINE,	NON-EXEMPT	450	150	12	1/1/1958	12/16/1981	50	1200	NO	N	N
620722	345414110153601	A17020006ACB	JOSEPH CITY IRRIGATION COMPANY	NON-EXEMPT	403	8	14	2/1/1948	6/14/1982	32	1009	YES	X	X
600375	345445110192501	A18019033DAA	AZTEC LAND CO. LLC.	EXEMPT	100	40	6	6/10/1946	9/28/1981	20	12	NO	N	N
603796		A18019016CAA	CORNELIS E. & KRISTI J. JANSEN	NON-EXEMPT	450	0	0	1/1/1946	9/10/1981	0	75	YES		
628494	345727110200501	A18019016000	JOSEPH CITY WATER,	NON-EXEMPT	460	300	10	1/1/1946	5/13/1982	70	300	NO		
802290		A18019017DAA	F B HANSEN	EXEMPT	440	400	6	1/1/1946	5/20/1985	50	30	NO		
600376		A18019017DAA	F B HANSEN	EXEMPT	450	120	8	1/1/1945	9/28/1981	90	20	NO	N	N
628497	345726110200601	A18019016000	JOSEPH CITY WATER,	NON-EXEMPT	500	300	10	1/1/1942	5/13/1982	70	300	NO		
627252		A17020006AAC	ATCHISON-TOPEKA,	NON-EXEMPT	80	80	6	2/27/1940	6/10/1982	0	0	NO		
805293		A18019017BD0	DOUGLAS AND PATRICIA POGUE	EXEMPT	0	0	0	12/31/1937	11/1/1988	0	0	NO		
609539		A18019016CD0	NEAL,T R	NON-EXEMPT	200	0	3	1/1/1936	5/25/1982	19	0	NO		
609540		A18019016CD0	NEAL,T R	NON-EXEMPT	200	0	8	1/1/1934	5/25/1982	19	500	NO		
086109		A18019023000	ARIZONA PUBLIC SERVICE	NON-EXEMPT	0	0	0		10/29/1980	0	0	NO		
086110		A18019023000	AZ PUBLIC SERVICE	NON-EXEMPT	0	0	0		10/29/1980	0	0	NO		
086111		A18019023000	AZ PUBLIC SERVICE	NON-EXEMPT	0	0	0		10/29/1980	0	0	NO		
086112		A18019023000	AZ PUBLIC SERVICE	NON-EXEMPT	0	0	0		10/29/1980	0	0	NO		
205717		A18019022DDb	ARIZONA PUBLIC SERVICE COMPANY	MONITOR					10/29/2004			NO		
205718		A18019022DCD	ARIZONA PUBLIC SERVICE COMPANY	MONITOR					10/29/2004			NO		
214839		A18019023CBD	KLEINFELDER, INC	OTHER								NO		
220206		A18019023CDB	ARIZONA PUBLIC SERVICE	OTHER					10/15/2010			NO		
232663		A17019003BBB	EL PASO NATURAL GAS	OTHER					7/25/2020			NO		
482933		A18019008CCD	ARIZONA PUBLIC SERVICE	NON-EXEMPT					7/23/2020			NO		
502455		A18019016DDC	RANDALL,D	NON-EXEMPT	0	0	0		3/25/1982	0	0	NO		
533815		A18019013CCD	AZ PUBLIC SERVICE,	MONITOR	0	0	0		11/26/1991	0	0	NO	N	
533818		A18019013CCD	AZ PUBLIC SERVICE,	MONITOR	0	0	0		11/26/1991	0	0	NO	N	
533819		A18019013CCD	AZ PUBLIC SERVICE,	MONITOR	0	0	0		11/26/1991	0	0	NO	N	
539105		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	0	0	0		5/12/1993	0	0	NO		
539106		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	0	0	0		5/12/1993	0	0	NO		
539107		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	0	0	0		5/12/1993	0	0	NO		
539108		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	0	0	0		5/12/1993	0	0	NO		
539109		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	0	0	0		5/12/1993	0	0	NO		
539110		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	0	0	0		5/12/1993	0	0	NO		
539111		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	0	0	0		5/12/1993	0	0	NO		
539112		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	0	0	0		5/12/1993	0	0	NO		
539113		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	0	0	0		5/12/1993	0	0	NO		
539114		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	0	0	0		5/12/1993	0	0	NO		
539115		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	0	0	0		5/12/1993	0	0	NO		
539116		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	0	0	0		5/12/1993	0	0	NO		
539117		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	0	0	0		5/12/1993	0	0	NO		
539118		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	0	0	0		5/12/1993	0	0	NO		
539859		A18019013CCD	AZ PUBLIC SERVICE,	EXEMPT	0	0	0		7/12/1993	0	0	NO		
540669		A18019023CDD	AZ PUBLIC SERVICE,	MONITOR	0	0	0		9/15/1993	0	0	NO	N	

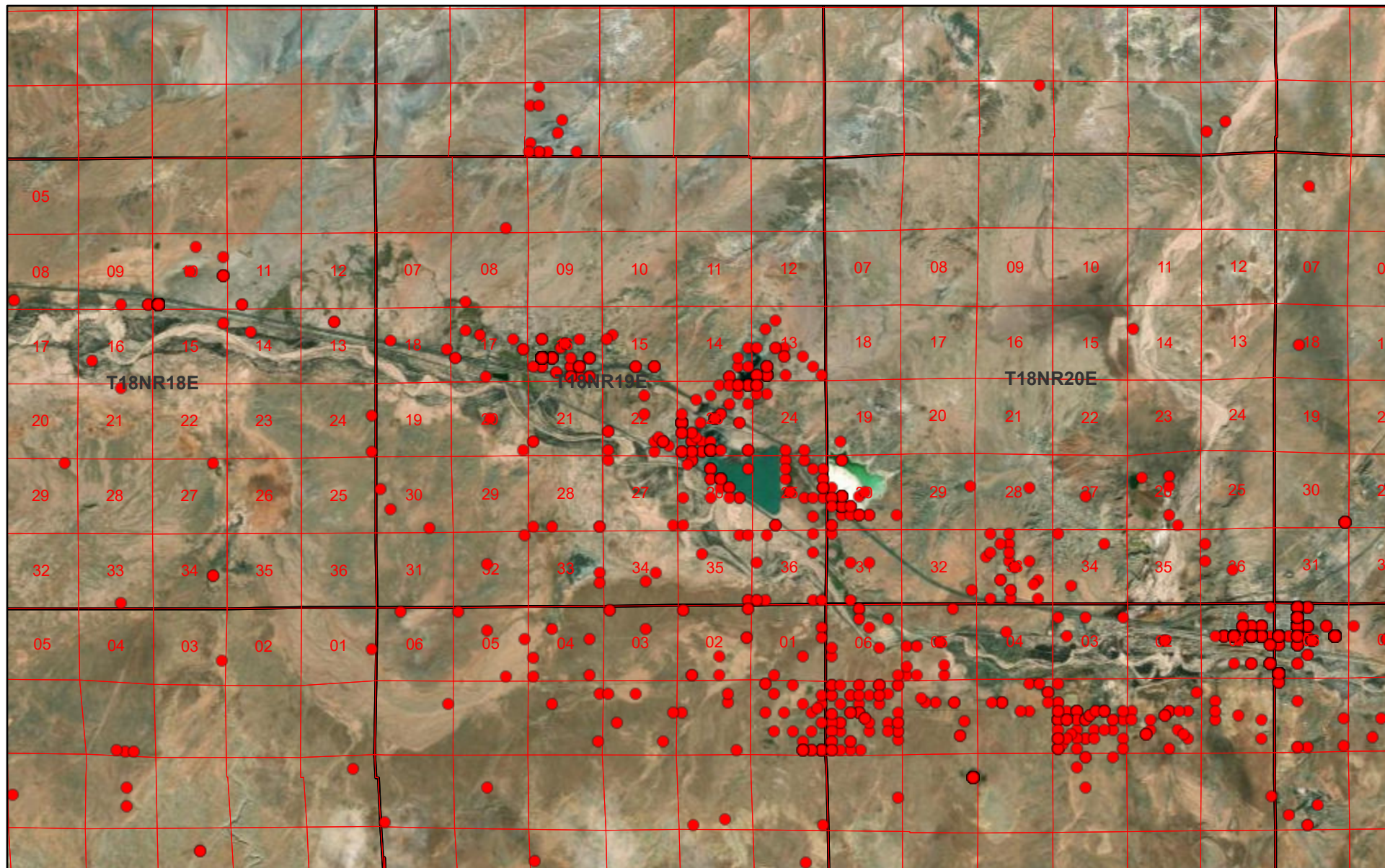
Registry No. (55-)	GWSI Site ID	Cadastral	Owner Name	Well Type	Well Depth (ft)	Casing Depth (ft)	Case Dia (in)	Drill Date	Applicaition Date	Water Level (ft)	Pump Capacity (GPM)	Pump Data Available	Completion Report	Log Received
540670		A18019023CDD	ARIZONA PUBLIC SERVICE CO	MONITOR	0	0	0		9/15/1993	0	0	NO	N	
540671		A18019023CDD	ARIZONA PUBLIC SERVICE CO	MONITOR	0	0	0		9/15/1993	0	0	NO	N	
547037		A18019023CDD	APS,	MONITOR	0	0	0		12/30/1994	0	0	NO	N	
547038		A18019023CDD	APS,	MONITOR	0	0	0		12/30/1994	0	0	NO	N	
547039		A18019023CDD	APS,	MONITOR	0	0	0		12/30/1994	0	0	NO	N	
553268		A18020030CCA	AZ PUBLIC SERVICE,	MONITOR	0	0	0		11/30/1995	0	0	NO	N	
553270		A18019036AAB	AZ PUBLIC SERVICE,	MONITOR	0	0	0		11/30/1995	0	0	NO	N	
573582		A17020006BAA	BOYD L WESTOVER	EXEMPT					3/4/1999			NO		
582885		A18020030CAC	ARIZONA PUBLIC SERVICE	MONITOR					8/15/2000			NO		
582886		A18020030CBD	ARIZONA PUBLIC SERVICE	MONITOR					8/15/2000			NO		
582887		A18020030CBD	ARIZONA PUBLIC SERVICE	MONITOR					8/15/2000			NO		
582888		A18020030CBD	ARIZONA PUBLIC SERVICE	MONITOR					8/15/2000			NO		
588000		A18019016CAC	HARTLEY TURLEY	OTHER					7/19/2001			NO		
588014		A18019016CAC	HARTLEY TURLEY	MONITOR					7/19/2001			NO	A	
588015		A18019016CAC	HARTLEY TURLEY	MONITOR					7/19/2001			NO	A	
588016		A18019016CAC	HARTLEY TURLEY	MONITOR					7/19/2001			NO	A	
588017		A18019016CAC	HARTLEY TURLEY	MONITOR					7/19/2001			NO		
588018		A18019016CAC	HARTLEY TURLEY	MONITOR					7/19/2001			NO		
588019		A18019016CAC	HARTLEY TURLEY	MONITOR					7/19/2001			NO		
588020		A18019016CAC	HARTLEY TURLEY	MONITOR					7/19/2001			NO		
588021		A18019016CAC	HARTLEY TURLEY	MONITOR					7/19/2001			NO		
593851		A18019016CAC	HARTLEY TURLEY	MONITOR					7/30/2002			NO	A	
594796		A18019023CDD	ARIZONA PUBLIC SERVICE COMPANY	MONITOR					9/27/2002			NO		
594797		A18019023CDD	ARIZONA PUBLIC SERVICE COMPANY	OTHER					9/27/2002			NO		
595839		A18019016CAC	HARTLEY TURLEY	MONITOR	15	11			11/18/2002	20		NO	A	X
595846		A18019016CAC	HARTLEY TURLEY	MONITOR	15	14	1		11/18/2002	20		NO	A	X
595849		A18019016CAC	HARTLEY TURLEY	MONITOR	10	10	4		11/18/2002	20		NO	A	X
613098		A18019020DDD	AZ PUBLIC SERVICE,	NON-EXEMPT	0	0	8		6/10/1982	0	0	NO		
613099		A17020006DDD	AZ PUBLIC SERVICE,	NON-EXEMPT	0	0	0		6/10/1982	0	0	NO		
613125		A18019026BAD	AZ PUBLIC SERVICE,	EXEMPT	45	0	2		6/10/1982	24	0	NO		
613126		A18019026BAD	AZ PUBLIC SERVICE,	EXEMPT	6	0	2		6/10/1982	2	0	NO		
613127		A18019026BAD	AZ PUBLIC SERVICE,	EXEMPT	8	0	0		6/10/1982	0	0	NO		
613128		A18019026BAD	AZ PUBLIC SERVICE,	EXEMPT	10	0	0		6/10/1982	1	0	NO		
613129		A18019026BAD	AZ PUBLIC SERVICE,	EXEMPT	12	0	0		6/10/1982	2	0	NO		
613130		A18019026BDA	AZ PUBLIC SERVICE,	EXEMPT	15	0	0		6/10/1982	15	0	NO		
613131		A18019026ACB	AZ PUBLIC SERVICE,	EXEMPT	45	0	0		6/10/1982	20	0	NO		
613132		A18019026ACB	AZ PUBLIC SERVICE,	EXEMPT	8	0	0		6/10/1982	2	0	NO		
613133		A18019026BDA	AZ PUBLIC SERVICE,	EXEMPT	18	0	0		6/10/1982	17	0	NO		
613134		A18019026ACB	AZ PUBLIC SERVICE,	EXEMPT	45	0	0		6/10/1982	17	0	NO		
613135		A18019026ACB	AZ PUBLIC SERVICE,	EXEMPT	10	0	0		6/10/1982	8	0	NO		
613136		A18019026ACB	AZ PUBLIC SERVICE,	EXEMPT	6	0	0		6/10/1982	1	0	NO		
613137		A18019026ACB	AZ PUBLIC SERVICE,	EXEMPT	8	0	0		6/10/1982	1	0	NO		
613138		A18019026ACB	AZ PUBLIC SERVICE,	EXEMPT	18	0	0		6/10/1982	0	0	NO		

Registry No. (55-)	GWSI Site ID	Cadastral	Owner Name	Well Type	Well Depth (ft)	Casing Depth (ft)	Case Dia (in)	Drill Date	Applicaition Date	Water Level (ft)	Pump Capacity (GPM)	Pump Data Available	Completion Report	Log Received
613139		A18019026ACC	AZ PUBLIC SERVICE,	EXEMPT	14	0	0		6/10/1982	12	0	NO		
613140		A18019026ACD	AZ PUBLIC SERVICE,	EXEMPT	45	0	0		6/10/1982	18	0	NO		
613141		A18019026ACD	AZ PUBLIC SERVICE,	EXEMPT	18	0	0		6/10/1982	16	0	NO		
613142		A18019026ACD	AZ PUBLIC SERVICE,	EXEMPT	35	0	0		6/10/1982	13	0	NO		
613144		A18019028DDD	AZ PUBLIC SERVICE,	EXEMPT	374	0	12		6/10/1982	13	0	NO		
613146	345339110202401	A17019004CCC	AZ PUBLIC SERVICE,	EXEMPT	0	0	0		6/10/1982	0	0	NO		
613147		A18019028DDD	AZ PUBLIC SERVICE,	EXEMPT	0	0	0		6/10/1982	0	0	NO		
613169		A18019023AAA	AZ PUBLIC SERVICE,	EXEMPT	154	114	1		6/10/1982	29	0	NO		
613170		A18019023AAA	AZ PUBLIC SERVICE,	EXEMPT	102	87	1		6/10/1982	27	0	NO		
613171		A18019023AAA	AZ PUBLIC SERVICE,	EXEMPT	292	277	2		6/10/1982	74	0	NO		
613193		A18019025DAA	AZ PUBLIC SERVICE,	EXEMPT	26	16	1		6/10/1982	16	0	NO		
613194		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	56	41	1		6/10/1982	17	0	NO		
613195		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	77	57	1		6/10/1982	18	0	NO		
613196		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	146	133	2		6/10/1982	27	0	NO		
613197		A18020030CDA	AZ PUBLIC SERVICE,	EXEMPT	92	52	1		6/10/1982	70	0	NO		
613198		A18020030CDA	AZ PUBLIC SERVICE,	EXEMPT	191	175	2		6/13/1982	69	0	NO		
613199		A18019025ADA	AZ PUBLIC SERVICE,	EXEMPT	112	32	1		6/10/1982	97	0	NO		
613200		A18019025AAD	AZ PUBLIC SERVICE,	EXEMPT	132	32	1		6/10/1982	117	0	NO		
629256	345714110201901	A18019016CCA	DELWIN OR EVELYN SOLOMON	NON-EXEMPT	425	0	10		6/17/1982	20	1000	YES	A	
650086		A18019022ABC	LANE,J E	NON-EXEMPT	750	750	10		7/14/1982	50	200	YES		
808461		A18019017BCA	MARCI A. & JOSEPH M. ZABADAL	EXEMPT					5/16/2003			NO		
905032		A18019016ACD	SPARTA INVESTMENTS INC.	MONITOR					6/16/2006			NO		
905034		A18019016DCA	SPARTA INVESTMENTS, INC.	MONITOR					6/16/2006			NO		
905035		A18019016DCA	SPARTA INVESTMENTS, INC.	MONITOR					6/16/2006			NO		
905036		A18019016DCA	SPARTA INVESTMENTS, INC.	MONITOR					6/16/2006			NO		
905037		A18019016DCA	SPARTA INVESTMENTS, INC.	MONITOR					6/16/2006			NO		
905038		A18019016DCA	SPARTA INVESTMENTS, INC.	MONITOR					6/16/2006			NO		
906362	345435110171001	A18019036CCC	ARIZONA PUBLIC SERVICE COMPANY	NON-EXEMPT					2/1/2007			YES		
906363		A18019036DDC	ARIZONA PUBLIC SERVICE CORPORATION	NON-EXEMPT					2/1/2007			YES		
906812	345433110162101	A18019036DDD	ARIZONA PUBLIC SERVICE COMPANY	NON-EXEMPT					4/12/2007			YES		
906917		A18019023CCD	ARIZONA PUBLIC SERVICE CO	OTHER					5/4/2007			NO		
907167		A18019023DDD	ARIZONA PUBLIC SERVICE COMPANY	NON-EXEMPT					6/11/2007			YES		
909087		A18019016BCD	THRIFTWAY MARKETING	MONITOR					5/23/2008			NO		
909097		A18019016DAC	THRIFTWAY MARKETING	MONITOR					5/23/2008			NO		
909102		A18019016CBD	THRIFTWAY MARKETING	MONITOR					5/23/2008			NO		
910249		A18019015CDA	LOVE'S COUNTRY STORES	MONITOR	22				1/9/2009			NO		X
910250		A18019015CDA	LOVE'S COUNTY STORES	MONITOR	20				1/9/2009			NO		X
910278		A18019016CBD	ROSS ROGERS	MONITOR					1/15/2009			NO		I
912800		A18019013CAB	ARIZONA PUBLIC SERVICE COMPANY	MONITOR					12/27/2010			NO		I
913983		A18019023CBB	ARIZONA PUBLIC SERVICE COMPANY	MONITOR					1/16/2012			NO		
913984		A18019023CBB	ARIZONA PUBLIC SERVICE COMPANY	MONITOR					1/16/2012			NO		
913985		A18019023CBB	ARIZONA PUBLIC SERVICE COMPANY	MONITOR					1/16/2012			NO		
913993		A18019013DDD	ARIZONA PUBLIC SERVICE COMPANY	MONITOR					1/18/2012			NO		

Registry No. (55-)	GWSI Site ID	Cadastral	Owner Name	Well Type	Well Depth (ft)	Casing Depth (ft)	Case Dia (in)	Drill Date	Applicaiton Date	Water Level (ft)	Pump Capacity (GPM)	Pump Data Available	Completion Report	Log Received
917009		A18019023DCC	APS - CHOLLA POWER PLANT	OTHER					6/4/2014			NO	A	X
918651		A18019023AAB	ARIZONA PUBLIC SERVICE	MONITOR					9/11/2015			NO		
921060		A18019023CCC	ARIZONA PUBLIC SERVICE	MONITOR					11/8/2017			NO		
921061		A18019023CCC	ARIZONA PUBLIC SERVICE	MONITOR					11/8/2017			NO		
923204		A18019015DCA	LOVES TRAVEL STOP AND COUNTRY STORES, INC	MONITOR					7/24/2019			NO		
923205		A18019015DCA	LOVES TRAVEL STOP & COUNTRY STORE, INC.	MONITOR					7/24/2019			NO		
923206		A18019015DCA	LOVES TRAVEL STOP & COUNRY STORE, INC.	MONITOR					7/24/2019			NO		
923207		A18019015DCA	LOVES TRAVEL SHOP & COUNTRY STORE, INC.	MONITOR					7/24/2019			NO		

Note: Wells registered as of October 15, 2020

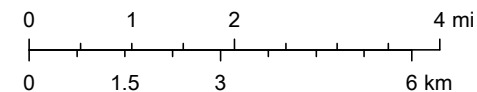
ADWR Well Registry_10152020



October 15, 2020

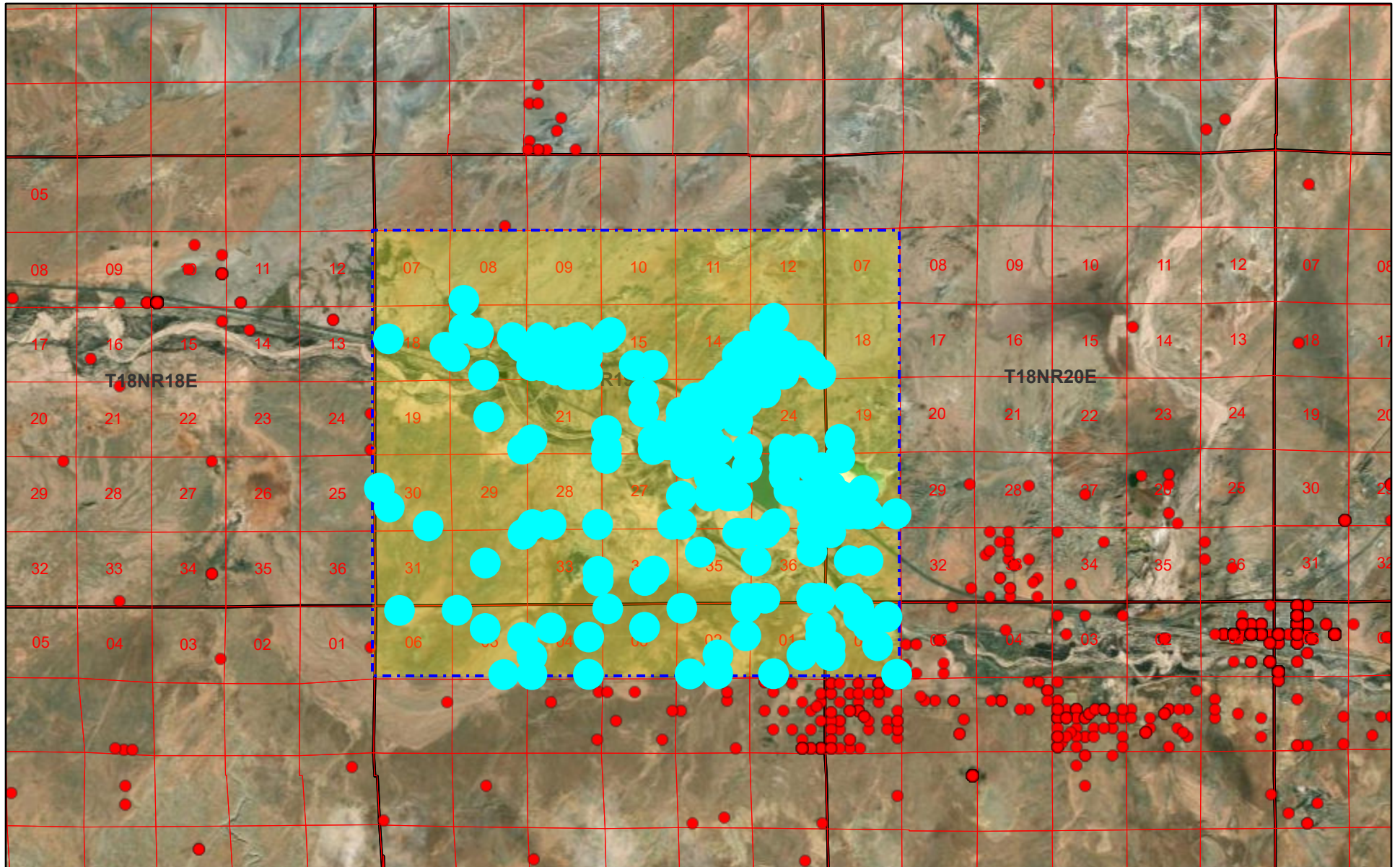
- Well Registry
- Township
- Section
- County

1:144,448



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS,

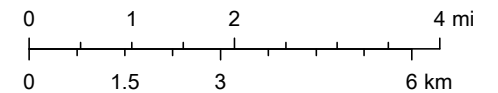
ADWR Well Registry_10152020



October 15, 2020

- Well Registry
- ▭ Township
- ▭ Section
- - - County

1:144,448



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS,

Registry No. (55-)	GWSI Site ID	Cadastral	Owner Name	Well Type	Well Depth (ft)	Casing Depth (ft)	Case Dia (in)	Drill Date	Applicaiton Date	Water Level (ft)	Pump Capacity (GPM)	Pump Data Available	Completion Report	Log Received
593169		A18019034DBC	MILTON H DESPAIN	EXEMPT	115	50	6	9/7/2002	6/20/2002	43		NO		X
553267		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	49	49	5	12/21/1995	11/30/1995	2	25	NO	X	X
541134	345512110151701	A18020031ACC	KEMPTON, CARL,	EXEMPT	160	100	6	11/8/1993	10/20/1993	115	0	NO	C	X
539986		A18020031BBB	HUNT, BOYCE,B	EXEMPT	130	30	61	9/7/1993	7/16/1993	105	0	NO	C	X
539863		A18019013CCD	AZ PUBLIC SERVICE,	EXEMPT	35	35	5	7/25/1993	7/12/1993	25	0	NO		X
539864		A18019013CCD	AZ PUBLIC SERVICE,	EXEMPT	40	40	5	7/24/1993	7/12/1993	25	0	NO		X
539861		A18019013CCD	AZ PUBLIC SERVICE,	EXEMPT	40	40	5	7/23/1993	7/12/1993	25	0	NO		X
539862		A18019013CCD	AZ PUBLIC SERVICE,	EXEMPT	40	40	5	7/22/1993	7/12/1993	25	0	NO		X
539860		A18019013CCD	AZ PUBLIC SERVICE,	EXEMPT	40	40	5	7/21/1993	7/12/1993	25	0	NO		X
539099		A18019013CCD	AZ PUBLIC SERVICE,	EXEMPT	40	20	5	7/9/1993	5/12/1993	5	0	NO	C	X
539097		A18019013CCD	AZ PUBLIC SERVICE,	EXEMPT	40	20	5	7/8/1993	5/12/1993	5	0	NO	C	X
539098		A18019013CCD	AZ PUBLIC SERVICE,	EXEMPT	40	20	5	7/8/1993	5/12/1993	5	0	NO	C	X
539100		A18019013CCD	AZ PUBLIC SERVICE,	EXEMPT	20	0	0	7/7/1993	5/12/1993	5	0	NO	C	X
539101		A18019013CCD	AZ PUBLIC SERVICE,	EXEMPT	12	0	0	7/7/1993	5/12/1993	1	0	NO	C	X
539102		A18019013CCD	AZ PUBLIC SERVICE,	EXEMPT	21	0	0	7/7/1993	5/12/1993	5	0	NO	C	X
539104		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	40	20	5	6/2/1993	5/12/1993	1	0	NO	C	X
539103		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	40	20	5	6/1/1993	5/12/1993	1	0	NO	C	X
539096		A18019013CCD	AZ PUBLIC SERVICE,	EXEMPT	40	20	5	5/28/1993	5/12/1993	5	0	NO	C	X
539095		A18019013CCD	AZ PUBLIC SERVICE,	EXEMPT	40	20	5	5/27/1993	5/12/1993	5	0	NO	C	X
537495		A18020031CDC	WESTOVER, BOYD,L	EXEMPT	125	125	0	2/2/1993	12/1/1992	6	0	NO	C	X
506371		A18019023DAB	AZ PUBLIC SERVICE,	EXEMPT	54	47	5	11/1/1983	9/21/1983	37	0	NO	N	X
506369		A18019023AAC	AZ PUBLIC SERVICE,	EXEMPT	39	0	0	10/26/1983	9/21/1983	0	0	NO	N	X
506370		A18019023ADA	AZ PUBLIC SERVICE,	EXEMPT	159	58	5	10/26/1983	9/21/1983	29	0	NO	N	X
506366		A18019024BBB	AZ PUBLIC SERVICE,	EXEMPT	118	65	5	10/21/1983	9/21/1983	26	0	NO	N	X
506368		A18019013CDD	AZ PUBLIC SERVICE,	EXEMPT	93	75	5	10/19/1983	9/21/1983	32	0	NO	N	X
506367		A18019013DBD	AZ PUBLIC SERVICE,	EXEMPT	93	84	5	10/14/1983	9/21/1983	45	0	NO	N	X
506365		A18019023AAA	AZ PUBLIC SERVICE,	EXEMPT	54	54	5	10/11/1983	9/21/1983	20	0	NO	N	X
506364		A18019023AAA	AZ PUBLIC SERVICE,	EXEMPT	108	104	5	10/7/1983	9/21/1983	22	0	NO	N	X
506372		A18019023ACA	AZ PUBLIC SERVICE,	EXEMPT	94	65	5	10/4/1983	9/21/1983	32	0	NO	N	X
638034		A18020031BDC	HUNT,D	EXEMPT	130	40	9	10/20/1980	6/14/1982	33	25	NO		
085748		A18019022ACC	RANDALL,D S	EXEMPT	365	365	8	8/29/1980	9/24/1980	74	0	NO		
613176		A18019014DAC	AZ PUBLIC SERVICE,	EXEMPT	80	53	1	8/21/1979	6/10/1982	77	0	NO		
613213		A18020030CBA	AZ PUBLIC SERVICE,	EXEMPT	120	88	1	5/19/1979	6/10/1982	55	0	NO		
613214		A18020030CBA	AZ PUBLIC SERVICE,	EXEMPT	120	88	2	5/16/1979	6/10/1982	96	0	NO		
613223		A18019025ADA	AZ PUBLIC SERVICE,	EXEMPT	80	58	1	5/8/1979	6/10/1982	57	0	NO		
613215		A18020030CBA	AZ PUBLIC SERVICE,	EXEMPT	116	88	1	5/7/1979	6/10/1982	77	0	NO		
613218		A18020030BCC	AZ PUBLIC SERVICE,	EXEMPT	100	79	1	5/1/1979	6/10/1982	59	0	NO		
613204		A18019025ABA	AZ PUBLIC SERVICE,	EXEMPT	50	28	1	4/8/1979	6/10/1982	0	0	NO		
613205		A18019024DCD	AZ PUBLIC SERVICE,	EXEMPT	57	35	1	4/8/1979	6/10/1982	0	0	NO		
613202		A18020030DDA	AZ PUBLIC SERVICE,	EXEMPT	50	28	1	4/7/1979	6/10/1982	0	31	NO		
613203		A18019025AAC	AZ PUBLIC SERVICE,	EXEMPT	50	28	1	4/7/1979	6/10/1982	39	0	NO		
613201		A18020019CCA	AZ PUBLIC SERVICE,	EXEMPT	54	32	1	4/6/1979	6/10/1982	0	0	NO		
613210		A18020030CDA	AZ PUBLIC SERVICE,	EXEMPT	50	28	1	4/6/1979	6/10/1982	0	0	NO		

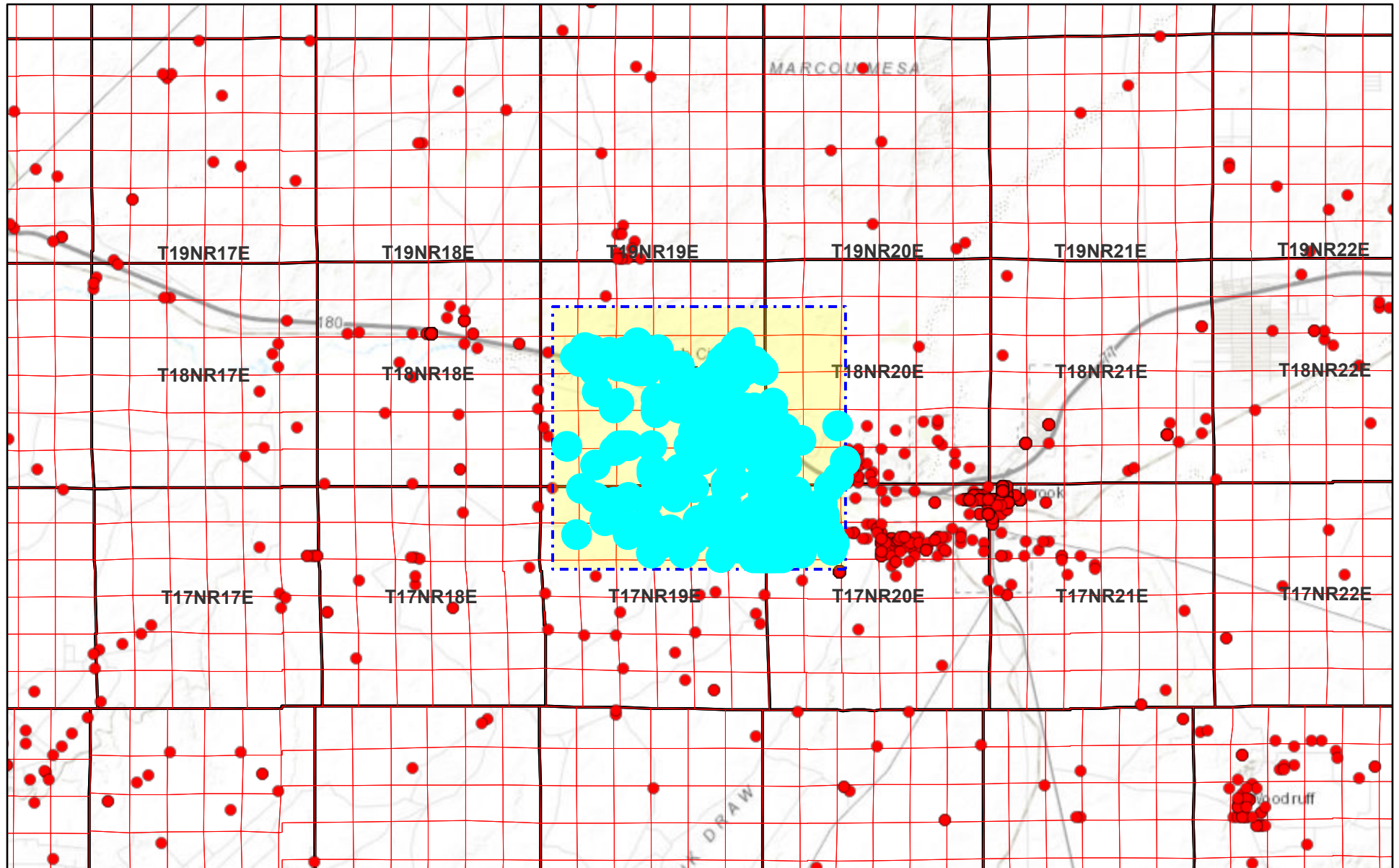
Registry No. (55-)	GWSI Site ID	Cadastral	Owner Name	Well Type	Well Depth (ft)	Casing Depth (ft)	Case Dia (in)	Drill Date	Applicaiton Date	Water Level (ft)	Pump Capacity (GPM)	Pump Data Available	Completion Report	Log Received
613211		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	70	43	1	4/6/1979	6/10/1982	58	0	NO		
613209		A18020030CDB	AZ PUBLIC SERVICE,	EXEMPT	51	29	1	4/5/1979	6/10/1982	0	0	NO		
613212		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	51	29	1	4/5/1979	6/10/1982	18	0	NO		
613220		A18019025ADD	AZ PUBLIC SERVICE,	EXEMPT	60	38	1	4/4/1979	6/10/1982	51	0	NO		
613221		A18019025ADD	AZ PUBLIC SERVICE,	EXEMPT	50	28	1	4/4/1979	6/10/1982	21	0	NO		
613217		A18020030CBB	AZ PUBLIC SERVICE,	EXEMPT	37	19	1	4/3/1979	6/10/1982	21	0	NO		
613222		A18019025ADD	AZ PUBLIC SERVICE,	EXEMPT	50	28	1	4/3/1979	6/10/1982	13	0	NO		
613206		A18020030DCB	AZ PUBLIC SERVICE,	EXEMPT	60	38	1	3/27/1979	6/10/1982	0	0	NO		
613208		A18020030CDA	AZ PUBLIC SERVICE,	EXEMPT	60	38	1	3/27/1979	6/10/1982	0	0	NO		
613207		A18020030DCB	AZ PUBLIC SERVICE,	EXEMPT	60	38	1	3/26/1979	6/10/1982	53	0	NO		
613216		A18020030CBB	AZ PUBLIC SERVICE,	EXEMPT	70	43	1	3/26/1979	6/10/1982	11	0	NO		
613180		A18019014DCD	AZ PUBLIC SERVICE,	EXEMPT	54	31	1	3/23/1979	6/10/1982	33	0	NO		
613173		A18019024BBB	AZ PUBLIC SERVICE,	EXEMPT	50	28	1	3/22/1979	6/10/1982	19	0	NO		
613172		A18019024BBB	AZ PUBLIC SERVICE,	EXEMPT	50	18	1	3/21/1979	6/10/1982	9	0	NO		
613174		A18019014DAA	AZ PUBLIC SERVICE,	EXEMPT	80	48	1	3/20/1979	6/10/1982	52	0	NO		
613175		A18019014DDB	AZ PUBLIC SERVICE,	EXEMPT	81	41	1	3/12/1979	6/10/1982	30	0	NO		
613178		A18019014DCD	AZ PUBLIC SERVICE,	EXEMPT	67	38	1	3/11/1979	6/10/1982	39	0	NO		
613179		A18019014DCD	AZ PUBLIC SERVICE,	EXEMPT	67	38	1	3/11/1979	6/10/1982	41	0	NO		
613177		A18019013CAA	AZ PUBLIC SERVICE,	EXEMPT	62	40	1	3/9/1979	6/10/1982	32	0	NO		
613181		A18019013CAD	AZ PUBLIC SERVICE,	EXEMPT	57	25	1	3/8/1979	6/10/1982	30	0	NO		
613183		A18019013CCA	AZ PUBLIC SERVICE,	EXEMPT	70	43	1	3/8/1979	6/10/1982	40	0	NO		
613184		A18019013CCA	AZ PUBLIC SERVICE,	EXEMPT	50	28	1	3/7/1979	6/10/1982	32	0	NO		
613191		A18019023AAB	AZ PUBLIC SERVICE,	EXEMPT	58	37	0	3/6/1979	6/10/1982	5	0	NO		
613192		A18019023ABA	AZ PUBLIC SERVICE,	EXEMPT	50	27	1	2/27/1979	6/10/1982	12	0	NO		
613182		A18019013CAD	AZ PUBLIC SERVICE,	EXEMPT	53	28	1	2/26/1979	6/10/1982	33	0	NO		
613185		A18019013CCA	AZ PUBLIC SERVICE,	EXEMPT	50	28	1	2/25/1979	6/10/1982	18	0	NO		
613186		A18019013CCC	AZ PUBLIC SERVICE,	EXEMPT	50	28	1	2/25/1979	6/10/1982	3	0	NO		
613187		A18019013CCC	AZ PUBLIC SERVICE,	EXEMPT	50	25	1	2/24/1979	6/10/1982	0	0	NO		
613188		A18019013CCC	AZ PUBLIC SERVICE,	EXEMPT	55	21	1	2/23/1979	6/10/1982	21	0	NO		
613189		A18019013CCC	AZ PUBLIC SERVICE,	EXEMPT	55	31	1	2/22/1979	6/10/1982	7	0	NO		
613190		A18019024BBB	AZ PUBLIC SERVICE,	EXEMPT	60	33	1	2/21/1979	6/10/1982	0	0	NO		
613165		A18019023AAA	AZ PUBLIC SERVICE,	EXEMPT	177	88	1	11/1/1978	6/10/1982	62	0	NO		
613166		A18019023AAA	AZ PUBLIC SERVICE,	EXEMPT	164	88	1	11/1/1978	6/10/1982	20	0	NO		
613167		A18019023AAB	AZ PUBLIC SERVICE,	EXEMPT	137	88	1	11/1/1978	6/10/1982	54	0	NO		
613163		A18019024BBB	AZ PUBLIC SERVICE,	EXEMPT	77	50	1	10/31/1978	6/10/1982	77	0	NO		
613164		A18019023AAA	AZ PUBLIC SERVICE,	EXEMPT	44	28	1	10/31/1978	6/10/1982	28	0	NO		
613168		A18019023AAB	AZ PUBLIC SERVICE,	EXEMPT	50	33	2	10/31/1978	6/10/1982	1	0	NO		
613418		A18019035DDD	AZTEC LAND CO LLC	EXEMPT	560	120	11	12/31/1977	6/9/1982	65	0	NO	X	X
613413		A18019027BBB	AZTEC LAND CO LLC	EXEMPT	840	285	10	1/1/1977	6/9/1982	14	0	NO		
613417		A18019027DDD	AZTEC LAND CO LLC	EXEMPT	900	163	10	1/1/1977	6/9/1982	14	0	NO		
613421		A18019035DDD	AZTEC LAND CO LLC	EXEMPT	520	57	10	1/1/1977	6/9/1982	33	0	NO		
613154		A18019022DCA	AZ PUBLIC SERVICE,	EXEMPT	100	100	6	9/7/1973	6/10/1982	5	0	NO		
613153		A18019026DAB	AZ PUBLIC SERVICE,	EXEMPT	92	80	6	9/4/1973	6/10/1982	40	0	NO		

Registry No. (55-)	GWSI Site ID	Cadastral	Owner Name	Well Type	Well Depth (ft)	Casing Depth (ft)	Case Dia (in)	Drill Date	Applicaiton Date	Water Level (ft)	Pump Capacity (GPM)	Pump Data Available	Completion Report	Log Received
613152		A18019025CDC	ARIZONA PUBLIC SERVICE CHOLLA POWER PLANT	EXEMPT	56	49	6	8/30/1973	6/10/1982	32	0	NO	A	
613151		A18019026CAA	AZ PUBLIC SERVICE,	EXEMPT	57	53	6	8/28/1973	6/10/1982	40	0	NO		
613150		A18019035BDB	AZ PUBLIC SERVICE,	EXEMPT	57	50	6	8/23/1973	6/10/1982	45	0	NO		
613148		A18019026ACB	AZ PUBLIC SERVICE,	EXEMPT	595	595	0	1/1/1961	6/10/1982	0	0	NO		
613145		A18019026CBB	AZ PUBLIC SERVICE,	EXEMPT	570	0	0	1/1/1959	6/10/1982	30	0	NO		
613149	345613110180601	A18019026BBA	AZ PUBLIC SERVICE,	EXEMPT	570	185	12	1/1/1959	6/10/1982	0	0	NO		
539105		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	0	0	0		5/12/1993	0	0	NO		
539106		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	0	0	0		5/12/1993	0	0	NO		
539107		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	0	0	0		5/12/1993	0	0	NO		
539108		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	0	0	0		5/12/1993	0	0	NO		
539109		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	0	0	0		5/12/1993	0	0	NO		
539110		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	0	0	0		5/12/1993	0	0	NO		
539111		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	0	0	0		5/12/1993	0	0	NO		
539112		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	0	0	0		5/12/1993	0	0	NO		
539113		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	0	0	0		5/12/1993	0	0	NO		
539114		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	0	0	0		5/12/1993	0	0	NO		
539115		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	0	0	0		5/12/1993	0	0	NO		
539116		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	0	0	0		5/12/1993	0	0	NO		
539117		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	0	0	0		5/12/1993	0	0	NO		
539118		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	0	0	0		5/12/1993	0	0	NO		
539859		A18019013CCD	AZ PUBLIC SERVICE,	EXEMPT	0	0	0		7/12/1993	0	0	NO		
613125		A18019026BAD	AZ PUBLIC SERVICE,	EXEMPT	45	0	2		6/10/1982	24	0	NO		
613126		A18019026BAD	AZ PUBLIC SERVICE,	EXEMPT	6	0	2		6/10/1982	2	0	NO		
613127		A18019026BAD	AZ PUBLIC SERVICE,	EXEMPT	8	0	0		6/10/1982	0	0	NO		
613128		A18019026BAD	AZ PUBLIC SERVICE,	EXEMPT	10	0	0		6/10/1982	1	0	NO		
613129		A18019026BAD	AZ PUBLIC SERVICE,	EXEMPT	12	0	0		6/10/1982	2	0	NO		
613130		A18019026BDA	AZ PUBLIC SERVICE,	EXEMPT	15	0	0		6/10/1982	15	0	NO		
613131		A18019026ACB	AZ PUBLIC SERVICE,	EXEMPT	45	0	0		6/10/1982	20	0	NO		
613132		A18019026ACB	AZ PUBLIC SERVICE,	EXEMPT	8	0	0		6/10/1982	2	0	NO		
613133		A18019026BDA	AZ PUBLIC SERVICE,	EXEMPT	18	0	0		6/10/1982	17	0	NO		
613134		A18019026ACB	AZ PUBLIC SERVICE,	EXEMPT	45	0	0		6/10/1982	17	0	NO		
613135		A18019026ACB	AZ PUBLIC SERVICE,	EXEMPT	10	0	0		6/10/1982	8	0	NO		
613136		A18019026ACB	AZ PUBLIC SERVICE,	EXEMPT	6	0	0		6/10/1982	1	0	NO		
613137		A18019026ACB	AZ PUBLIC SERVICE,	EXEMPT	8	0	0		6/10/1982	1	0	NO		
613138		A18019026ACB	AZ PUBLIC SERVICE,	EXEMPT	18	0	0		6/10/1982	0	0	NO		
613139		A18019026ACC	AZ PUBLIC SERVICE,	EXEMPT	14	0	0		6/10/1982	12	0	NO		
613140		A18019026ACD	AZ PUBLIC SERVICE,	EXEMPT	45	0	0		6/10/1982	18	0	NO		
613141		A18019026ACD	AZ PUBLIC SERVICE,	EXEMPT	18	0	0		6/10/1982	16	0	NO		
613142		A18019026ACD	AZ PUBLIC SERVICE,	EXEMPT	35	0	0		6/10/1982	13	0	NO		
613169		A18019023AAA	AZ PUBLIC SERVICE,	EXEMPT	154	114	1		6/10/1982	29	0	NO		
613170		A18019023AAA	AZ PUBLIC SERVICE,	EXEMPT	102	87	1		6/10/1982	27	0	NO		
613171		A18019023AAA	AZ PUBLIC SERVICE,	EXEMPT	292	277	2		6/10/1982	74	0	NO		
613193		A18019025DAA	AZ PUBLIC SERVICE,	EXEMPT	26	16	1		6/10/1982	16	0	NO		

Registry No. (55-)	GWSI Site ID	Cadastral	Owner Name	Well Type	Well Depth (ft)	Casing Depth (ft)	Case Dia (in)	Drill Date	Applicaiton Date	Water Level (ft)	Pump Capacity (GPM)	Pump Data Available	Completion Report	Log Received
613194		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	56	41	1		6/10/1982	17	0	NO		
613195		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	77	57	1		6/10/1982	18	0	NO		
613196		A18020030CBD	AZ PUBLIC SERVICE,	EXEMPT	146	133	2		6/10/1982	27	0	NO		
613197		A18020030CDA	AZ PUBLIC SERVICE,	EXEMPT	92	52	1		6/10/1982	70	0	NO		
613198		A18020030CDA	AZ PUBLIC SERVICE,	EXEMPT	191	175	2		6/13/1982	69	0	NO		
613199		A18019025ADA	AZ PUBLIC SERVICE,	EXEMPT	112	32	1		6/10/1982	97	0	NO		
613200		A18019025AAD	AZ PUBLIC SERVICE,	EXEMPT	132	32	1		6/10/1982	117	0	NO		

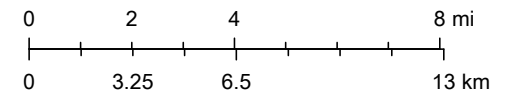
Note: Wells registered as of January 15, 2021

ADWR Well Registry_01152021



January 16, 2021

1:288,895



Bureau of Land Management, Esri, HERE, Garmin, USGS, NGA, EPA,

Arizona Department of Water Resources

APPENDIX J

WOOD REPORT DOCUMENTING CORRECTIVE MEASURES PRE-DESIGN STUDIES AT THE FAP



**PRE-DESIGN STUDIES SUMMARY REPORT
FLY ASH POND**

Coal Combustion Residuals Rule Compliance

**Arizona Public Service Company
Cholla Power Plant
Navajo County, Arizona**

Submitted to:

**Arizona Public Service Company
400 North 5th Street
Phoenix, Arizona 85004**

Submitted by:

**Wood Environment & Infrastructure Solutions, Inc.
Phoenix, Arizona**

January 31, 2021

Wood Project No. 14-2018-2040



TABLE OF CONTENTS

	Page
1.0 Introduction	1
2.0 Existing Conditions.....	1
2.1 Geology.....	1
2.2 Hydrogeology.....	2
3.0 Pre-Design Study Objectives and Descriptions	2
3.1 Arsenic Redox Evaluation.....	3
3.2 Aquifer Tests	3
3.3 Seepage Intercept System Evaluation.....	3
3.4 CPT Site Investigation.....	4
4.0 Summary of Results	4
4.1 Arsenic Redox Evaluation.....	4
4.2 Aquifer Tests	5
4.3 Seepage Intercept System Evaluation.....	5
4.3.1 Geronimo.....	5
4.3.2 Hunt.....	6
4.4 CPT Site Investigation.....	6
5.0 Updated Conceptual Site Model	6
6.0 Conclusions and Recommendations.....	7
7.0 References	9

List of Tables

Table 1	Summary of Aquifer Test Results
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List of Figures

Figure 1	CCR Units and Monitoring System Summary
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List of Appendices

Appendix A	Evaluation of Groundwater Redox Conditions at the FAP
Appendix B	Aquifer Tests at FAP Wells W-123, W-126, and MW-66A
Appendix C	Seepage Intercept System Evaluation at the FAP
Appendix D	CPT Investigation and Piezometer Installation at the FAP

1.0 INTRODUCTION

This Pre-Design Studies Summary Report (Report) was prepared on behalf of the Arizona Public Service Company (APS) by Wood Environment & Infrastructure Solutions, Inc. (Wood). This Report focuses on the Fly Ash Pond (FAP), a coal combustion residuals (CCR) surface impoundment located at the APS Cholla Power Plant (the Site) in Navajo County, Arizona (Figure 1). The Pre-Design Studies documented herein were performed pursuant to requirements specified in 40 Code of Federal Regulations Part 257 (herein referred to as the CCR Rule; Federal Register, 2018) in support of future selection of remedies for groundwater impacts located downgradient of the FAP.

In 2019, APS prepared an Assessment of Corrective Measures (ACM) (Wood, 2019) to evaluate the performance of several combined corrective measures to address groundwater impacts located downgradient of the FAP. The ACM recommended additional site characterization and Pre-Design Studies be performed at the FAP to support the selection and design of remedies. The Pre-Design Studies recommended by the ACM included aquifer testing downgradient of the FAP and an evaluation of the existing seepage intercept system at the FAP. After initial evaluation of the results of these two studies, Wood recommended performing additional studies to characterize the alluvium and shallow groundwater at the toe of the FAP.

The purpose of this report is to summarize results of four Pre-Design Studies performed at the FAP and discuss updates to the Conceptual Site Model that impact remedy selection and implementation.

2.0 EXISTING CONDITIONS

This section provides an abbreviated description of the geology and hydrogeology at the FAP relevant to the Pre-Design Studies summarized in this Report. A more complete description of the Conceptual Site Model (CSM) is presented in the *Annual Groundwater Monitoring and Corrective Action Report for 2019* (GMCAR) (Wood, 2020a).

2.1 Geology

The Colorado Plateau, on which the Site is located, is typified by horizontal layered sequences of sedimentary rock, primarily sandstones, siltstones, and claystones. The following units were encountered during the Pre-Design Studies described herein (in descending order):

- Alluvium: The quaternary surface alluviums overlie the bedrock formations in localized areas. The alluvium is unconsolidated, heterogeneous, and consists of clay, silt, sand, and gravel. The alluvium ranges in thickness from non-existent to approximately 50 feet (ft) thick downgradient of the FAP Dam.
- Moenkopi Formation: The Moenkopi Formation is the uppermost geologic unit beneath the plant and the CCR units and is present at land surface in areas where the alluvium is non-existent. The Moenkopi Formation acts as an aquitard between the shallow alluvial aquifer and the underlying Coconino Sandstone Aquifer. The Moenkopi Formation consists of three members: the Holbrook Member, Moqui Member (described below) and Wupatki Member. The Holbrook and Wupatki Members were not encountered during these studies.
 - The Moqui Member is described as the primary confining unit within the Moenkopi Formation and consists of maroon and greenish mudstone with abundant gypsum. The Moqui Member is approximately 250 to 300 ft thick near the plant but at the locations where the thickness of the Moqui Member has been established at the base of the drainage

channel immediately downgradient of the FAP (i.e., at W-124 and W-125), the member is 24 ft thick.

2.2 Hydrogeology

Two hydrostratigraphic units are conceptualized beneath the plant and associated CCR units. These units form the basis for the hydrogeologic CSM developed by Montgomery & Associates (2011 and 2017): the Lower Colorado and Tanner Wash Alluvial aquifer and the C-aquifer, which consists of the Coconino Sandstone and Schnebly Hill Formation. These units are discussed in further detail in the Groundwater Monitoring and Corrective Action Report (GMCAR; Wood, 2020). For this Report, the investigations were focused on the uppermost alluvial aquifer. At the FAP, this is considered to be the groundwater in alluvial sediments present in the vicinity of the FAP. Groundwater at the toe of the FAP dam flows west-southwest through localized shallow alluvial sediments (which are very fine grained) and then merges with the Little Colorado River Alluvium where the predominant direction of groundwater flow is to the west.

3.0 PRE-DESIGN STUDY OBJECTIVES AND DESCRIPTIONS

The Pre-Design Studies performed at the FAP in support of remedy selection were:

- Evaluation of groundwater reduction/oxidation (redox) conditions at the FAP (*Evaluation of Groundwater Redox Conditions at the FAP, Appendix A*);
- Aquifer tests downgradient of the FAP (*Aquifer Tests at the FAP Wells W-123, W-126, and MW-66A, Appendix B*);
- Evaluation of extraction wells and seepage collection systems (*Seepage Intercept System Evaluation at the FAP, Appendix C*); and
- Cone Penetrometer Test (CPT) site investigation at the toe of the FAP (*CPT Investigation and Piezometer Installation at the FAP, Appendix D*).

The objectives of the Pre-Design Studies were to evaluate:

- The relationship between arsenic concentrations and redox conditions in groundwater downgradient of the FAP;
- Local hydrogeologic properties such as hydraulic conductivity, transmissivity, aquifer thickness, and aquifer boundary conditions in the alluvial aquifer downgradient of the FAP;
- The extent of hydraulic connection within the uppermost aquifer and potential connections between the alluvial aquifer and the Moenkopi Moqui;
- The soil properties, depth to bedrock, pore pressure conditions, and potentiometric surface in the alluvium and the weathered portion of the Moqui immediately downgradient of the FAP along the toe; and
- The performance and effectiveness of seepage intercept systems.

A brief description of each Pre-Design Study investigation is provided in the sections below. Technical memoranda documenting each Pre-Design Study are provided in the Appendices.

3.1 Arsenic Redox Evaluation

The spatial distribution of arsenic in groundwater downgradient of the FAP is not consistent with other constituents of concern (e.g., fluoride, lithium, molybdenum) or boron, which is a CCR indicator constituent. Potential causes for the inconsistent spatial distribution of arsenic in groundwater were evaluated by Wood during an alternative source demonstration (ASD) for arsenic at the FAP. The ASD suggested that reducing conditions in groundwater downgradient of the FAP may be responsible for the mobilization of arsenic from aquifer sediments into groundwater, thereby causing the elevated arsenic concentrations at MW-67A. The ASD recommended further evaluation of groundwater redox conditions at the FAP (Wood, 2020b).

Accordingly, Wood assessed the redox conditions at the FAP by analyzing groundwater samples collected from FAP downgradient wells during the second quarterly CCR monitoring event of 2020 for several redox-sensitive constituents. **Appendix A** provides additional detail on the investigation activities and results.

3.2 Aquifer Tests

Primary objectives for the March 2020 aquifer tests included the following:

- Calculating aquifer properties downgradient of the FAP (e.g., hydraulic conductivity, transmissivity, storage coefficient);
- Obtaining specific capacity data for pumping wells; and
- Evaluating connectivity between wells downgradient of the FAP (i.e., radius of influence of pumping wells).

The aquifer tests were initially planned to consist of one step-rate test and one constant-rate test at both W-123 and W-126. The test program was expanded during the field mobilization to include pumping tests at MW-66A, and additional data collection activities were conducted at the Hunt Seep extraction well. **Appendix B** provides additional detail on how each aquifer test at each location was performed.

3.3 Seepage Intercept System Evaluation

The objective of this evaluation was to inspect and evaluate the equipment, operation, and performance of the Geronimo and Hunt seepage intercept systems at the FAP.

APS maintains several seepage intercept trenches and extraction wells at the FAP which capture shallow impacted groundwater before it migrates downgradient in the alluvial aquifer system. The captured groundwater is then conveyed to the plant directly for reuse in operations. In December 2019, Wood visited the active seepage intercept systems at the FAP (i.e., the Geronimo and Hunt seepage collections systems) to inspect the seepage intercept system infrastructure, record which extraction wells and seepage collection sumps were equipped with pumps and set to operate, evaluate whether accessible wellhead control equipment was functional, deploy pressure transducers at the Geronimo and Hunt seepage collection sumps, and gather information regarding how to better monitor operations in the future. Additional inspections were conducted at the FAP in February and March 2020 in which extraction well pumping rates were measured, pressure transducers were deployed at the Geronimo seepage extraction wells, a voltage logger was installed at the Hunt seepage extraction well, and water quality samples were collected from the extraction wells and seepage collection sumps. **Appendix C** discusses in further detail the data collected during the inspection activities.

3.4 CPT Site Investigation

The CPT site investigation was performed from July 13 through 21, 2020 and included advancing a total of 24 CPT soundings along the toe of the FAP; installing a total of 10 vibrating wire piezometers (VWP) at select CPT sounding locations; and collecting groundwater samples where possible at select CPT sounding locations. **Appendix D** provides additional detail on the locations of CPTs and where VWPs were installed.

The objective of the CPT investigation was to further characterize and verify subsurface conditions at the toe of the FAP with regards to: the lateral and vertical soil types in the alluvium, specifically the presence and location of a potentially coarser zone at the base of the alluvium; the depth to competent Moqui; and, the distribution and magnitude of pore pressures in the vadose and saturated portions of the alluvium.

4.0 SUMMARY OF RESULTS

The results of each of the Pre-Design Studies performed at the FAP are summarized in the sections below.

4.1 Arsenic Redox Evaluation

The results of this groundwater redox evaluation can be summarized as follows:

- Relatively high concentrations of ferrous iron (i.e., Fe^{2+}) and reduced manganese (i.e., Mn^{2+}) measured in a groundwater sample collected from MW-67A suggests that the reductive dissolution of iron and manganese oxyhydroxides present naturally in aquifer material may play a role in elevated concentrations of arsenic in the vicinity of the well. This process results in the dissolution and mobilization of arsenic bound to the oxide minerals into groundwater. The elevated concentration of ammonia in the MW-67A groundwater sample also indicates reduced conditions in groundwater near the well which are consistent with arsenic mobility in groundwater.
- The relatively low concentrations of constituents associated with reduced conditions in the M-51A, M-50A, and W-123 groundwater samples suggests that the FAP is not promoting a reduced environment which could mobilize arsenic from aquifer sediments. As indicated in the ASD, seepage from the FAP is the likely cause of the elevated arsenic concentrations observed at M-51A (Wood, 2020b).
- The elevated concentrations of Fe^{2+} and Mn^{2+} detected in the M-64A groundwater sample suggest reducing conditions at the background well. However, arsenic concentrations in the MW-64A sample are two orders of magnitude lower than the MW-67A sample. The discrepancy between the measured arsenic concentrations is likely explained by mineralogical differences of the aquifer sediments in which each well is screened, as indicated by the M-67A and M-64A lithologic logs (Attachment B).

The results of this evaluation suggest the FAP is not the cause of the elevated arsenic concentrations at MW-67A. Rather, the analytical data indicate reduced conditions in groundwater are causing the mobilization of arsenic from aquifer sediments into groundwater near MW-67A. Accordingly, the iso-concentration contour for arsenic concentrations in groundwater downgradient of the FAP has been revised and is depicted in Appendix A. A potential cause of the reduced conditions at MW-67A is the irrigation/stock pond and irrigated rangeland located hydraulically upgradient of the well. Additional information and laboratory results are provided in **Appendix A**.

4.2 Aquifer Tests

Aquifer properties calculated from the aquifer tests are summarized in the table below:

Table 1: Summary of Aquifer Test Results

Test Well	Transmissivity (gpd/ft)	Hydraulic conductivity (ft/d)
W-123	0.22	N/A
MW-66A	302	1.9
Hunt B	2,963	7.2

Notes:

N/A = not analyzed

gpd/ft = gallons per day per foot

ft/d = feet per day

The boring logs for W-123, W-126, and Hunt B suggest these wells may be completed within weathered portions of the Moenkopi Moqui. Additional investigation is necessary to determine the degree to which the Moqui is saturated at these well locations. Additional information on the analysis and results is provided in **Appendix B**.

4.3 Seepage Intercept System Evaluation

4.3.1 Geronimo

Flow totalizer data collected throughout 2020 suggest the entire Geronimo seepage intercept system collects an average of approximately 4 to 5 gallons per minute (gpm), though flow estimates using the totalizer data may be questionable due to totalizer issues resulting from scale formation. The operational schedules and pumping rates for the Geronimo seepage extraction wells are currently unknown since the system is not equipped with instrumentation that allows for evaluation of this information. The wells are either inoperable (Geronimo B) or operate intermittently with a limited radius of influence (Geronimo A), which may be caused by equipment malfunctions or by clogging of the well screen or filter pack by scale formation, respectively. Additionally, the Geronimo extraction well screen slot size of 0.010-inch (in) is not likely suitable for the fine-grained material in which the wells are screened. The water-level data collected from the Geronimo C sump suggest the northeastern intercept trench captures approximately 0.9 gpm, while flow rates for the southwestern Geronimo seepage intercept trench are currently unknown.

Water-level data collected from piezometer F-111 during operation of Geronimo A pumping indicate that there is no drawdown in the water level in F-111.

This can suggest either:

- A limited cone of depression caused by Geronimo A pumping, as indicated by no drawdown in Geronimo B or F-111;
- An upward hydraulic gradient at the toe of the FAP, as indicated by the higher water level at F-111 (which is screened 5.5 ft below the bottom of the extraction well screens); or
- A clogged well screen at F-111 that is not hydraulically connected to the surrounding formation.

4.3.2 Hunt

The majority of seepage water intercepted by the Hunt system is captured by the Hunt B extraction well; a negligible quantity of seepage water entered the Hunt A sump which is connected to a shallow French Drain system during the monitoring period. Hunt B was observed to pump at an instantaneous rate of approximately 8.5 gpm during Wood's inspection, and flow totalizer data collected throughout 2020 from the Hunt discharge pipeline indicates an average flow rate for the Hunt intercept system of approximately 6 gpm. The pumping radius of influence for Hunt B extends at least to W-126, which is located approximately 110 ft southwest of the extraction well.

Results of the water quality analysis of the purged water indicate elevated concentrations of boron, fluoride, and molybdenum detected in the Geronimo C, Hunt A, Hunt B, W-123, and W-126 samples suggests the Geronimo and Hunt seepage intercept systems capture seepage water that is also intercepted by wells W-123 and W-126.

4.4 CPT Site Investigation

The subsurface at the western portion of the toe (CPT-01 to CPT-08) is predominantly sand and silty sand with some clayey silt, and the depth to bedrock is shallow (5 to 20 feet). Also, the CPT soundings through the alluvium recorded minimal to no pore pressures, suggesting minimal to no saturation in that portion of the alluvium, with potential disconnected seepage flow paths at the base of the alluvium.

The subsurface at the middle to eastern portion of the toe (CPT-09 through CPT-27) is comprised predominantly of clay, silty clay, and silt beds, and the depth to bedrock is deeper (ranging from approximately 30 to 50 feet). In addition, all the CPTs encountered soil that behaved as stiff sand and silty sand at the base of the alluvium (See Figures 2b and 4b, Appendix D). This is interpreted to potentially be a layer with increased gravel content in the silty clay. The CPT soundings through the alluvium recorded minimal pore pressures near the surface, where it is assumed there is minimal moisture content. Then dynamic pore pressures would generally increase but fluctuate between high and low pressures, and many of the pore pressure dissipation (PPD) tests were cut short because the pore pressure was dissipating too slowly or not at all. These data and observations typically indicate variably saturated, very low permeability ($<10^{-7}$ cm/sec) clayey material.

However, for the system overall, the phreatic surfaces estimated by the PPDs and the VWP are similar and occur approximately 15 to 25 feet bgs (El. 5010 to 5020 ft msl) (Figure 4b, Appendix D), except in the vicinity of the Geronimo Seepage Intercept system. During the CPT Investigation CPT-19 and CPT-27 exhibited artesian conditions (Figure 4b, Appendix D), and historically F-111 and W-123 have very shallow depths to water (Figure 2b, Appendix D). This suggests there are semi-confined aquifer conditions in this area and may be specifically associated with the zone of coarser material at base of alluvium. This zone may be one of the predominant pathways for seepage transport. As a result, the phreatic surface locations should be considered potentiometric surface locations and most likely do not represent the water table in the alluvium but the potential head at the depth the measurement was recorded.

5.0 UPDATED CONCEPTUAL SITE MODEL

The work summarized in this memo has allowed the CSM to be updated with the results and learnings from these studies. Key updated CSM results include:

- The elevated arsenic concentrations in groundwater downgradient of the FAP at MW-67A are not associated with seepage derived from the FAP. It appears that these arsenic concentrations could

be caused by localized reducing conditions created by surface irrigation water infiltrating into the subsurface.

- The aquifer testing has resulted in an additional hydraulic conductivity value for the alluvium downgradient of the FAP to be compared to previous hydraulic conductivity values.
- Overall, the Hunt seepage intercept system is performing well, with the majority of water captured by seepage extraction well Hunt B.
- The Geronimo seepage intercept trench is performing well, however the Geronimo extraction wells are not performing to the system potential or design rates. This lack of performance is likely a function of design and installation not being appropriate for the in-situ conditions.
- The CPT site investigation results provided a more detailed understanding of the depth to bedrock, and the location and thickness of a layer of increased gravel in the alluvium that appears to be water bearing and higher permeability. The pore pressure data from this investigation have clarified areas of unsaturated alluvium and variable saturation including an area that appears to have artesian conditions.

6.0 CONCLUSIONS AND RECOMMENDATIONS

The Pre-Design Studies outlined above have advanced the characterization of local geological and geotechnical conditions and local groundwater conditions at the FAP in the following ways:

- The extent of impacts resulting from seepage from the FAP, with regards to arsenic, have been updated to not include MW-67A. Local reducing conditions appear to be causing the elevated arsenic concentrations at MW-67A, which are potentially caused by other recharge sources.
- The existing Geronimo Extraction Wells appear to not be performing effectively, either due to lack of well maintenance or inappropriate well screen design and placement for subsurface conditions. This must be considered when evaluating remedy alternatives; the Geronimo extraction wells are not good data points to compare to for evaluating how future extraction wells may perform.
- The depth to bedrock profile and a possible zone of increased gravel and increased permeability at the base of the low permeability fine grained alluvium may be a preferred seepage flow path. Additionally, targeting this zone with extraction wells may be very effective at capturing seepage from the FAP.
- The local hydrogeologic properties for the uppermost aquifer downgradient of the FAP, including updated values of hydraulic conductivity and transmissivity have been further refined to help evaluate effectiveness of different containment technologies.

The recommendations that resulted from each Pre-design Study described above are summarized below:

- Further evaluation of groundwater redox conditions in groundwater downgradient of the FAP is warranted. Therefore, Wood recommends two additional rounds of laboratory analysis of groundwater samples collected from wells M-50A, M-51A, W-123, W-126, MW-65A, MW-66A, MW-67A, M-46A, and M-64A be evaluated for dissolved iron, dissolved manganese, ammonia, nitrate, total organic carbon, and dissolved organic carbon to assess potential variations in groundwater redox conditions downgradient of the FAP.

- The results of the aquifer tests will likely refine the hydrogeologic conceptual model for the FAP and should be further evaluated in the context of past estimates of hydraulic conductivity and used as warranted to update the numerical groundwater model.
- The operation of the extraction wells should be evaluated further to determine whether the observed pumping anomalies (e.g., cyclical pumping of Geronimo A and lack of pumping of Geronimo B despite high water levels) is due to electrical, instrumentation & controls, or pump issues. The extraction well screens could also be in poor condition and require rehabilitation. If rehabilitation is not beneficial, this could be useful information if additional extraction wells are installed so as not to repeat the issue.

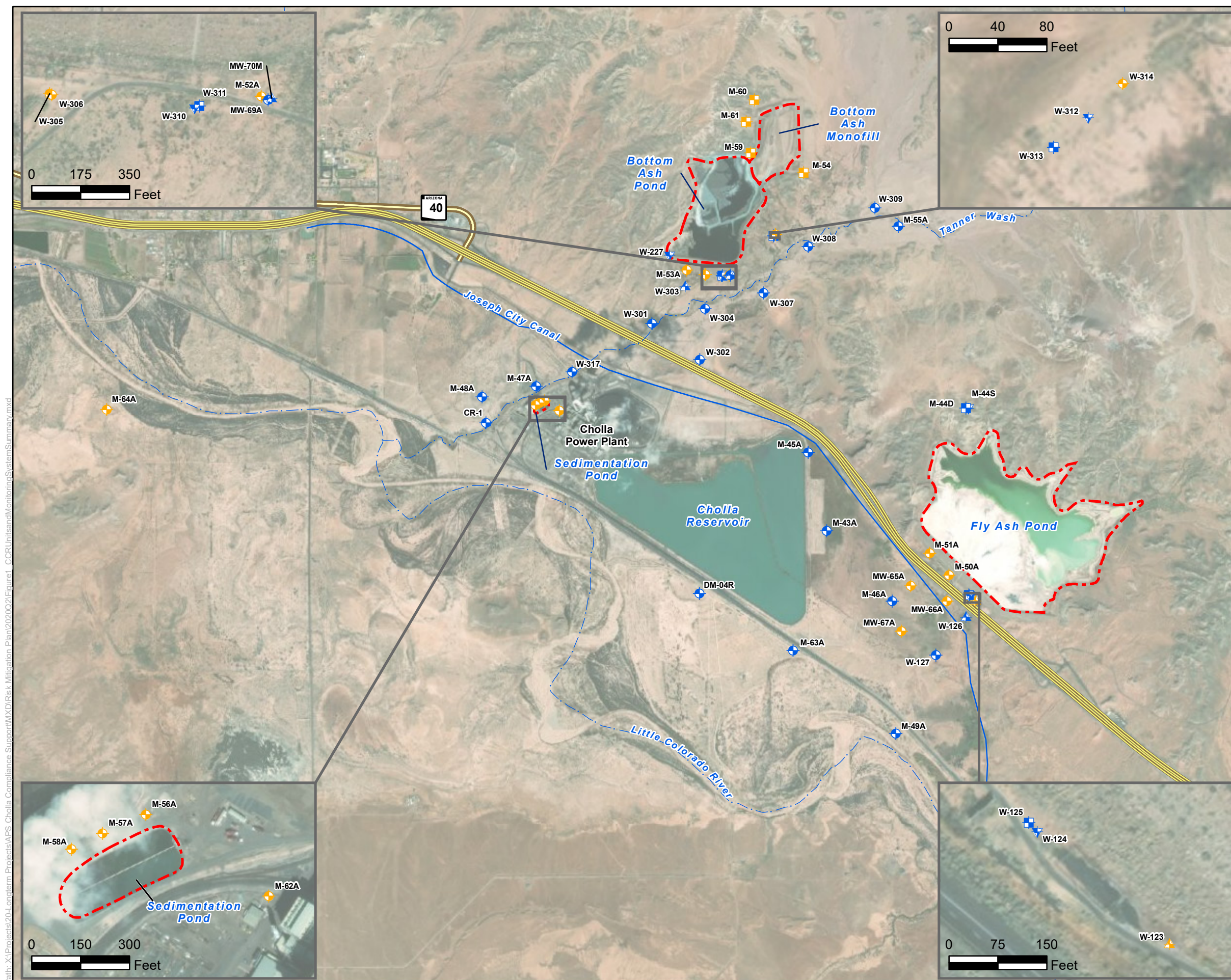
Also, to improve monitoring and performance of the existing seepage collection systems, Wood recommends the following improvements to the Geronimo and Hunt seepage intercept systems:

- Equipping the submersible pumps at collection sumps and extraction wells with durable flow meters and hour meters to better evaluate pumping rates and operational schedules.
- Installing an access port and sounding tube in the Hunt B extraction well to monitor water levels at the well.
- Removing the flow totalizers on the Hunt line and the combined Geronimo/Hunt line (if new installed as stated above). If totalizers are still desired at these locations, it would be beneficial to replace these with meters that are less susceptible to fouling from scale build-up.
- Installing an air release valve at the high point in the piping at each well before the piping goes below grade. Air bubbles can build up and cause issues in the line and possibly with pump operation.
- Installing large diameter wells in the vicinity of the Geronimo Seepage Intercept system that target the areas where artesian conditions occurred and potentially thicker zones of gravelly alluvium. These wells should be installed to perform aquifer testing and evaluate hydraulic conductivities and potential recovery. If beneficial, the wells could be converted to extraction wells based on results of the aquifer tests.

7.0 REFERENCES

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- Wood, 2020b. *Alternative Source Demonstration for Arsenic and Cobalt at the FAP*, Arizona Public Service Cholla Power Plant – Navajo County, Arizona. Prepared on behalf of Arizona Public Service. January 31, 2020.

FIGURE



Legend

CCR Monitoring Well Location

- Alluvial Monitoring Well
- Moenkopi Formation (Moqui Member) Monitoring Well
- C-Aquifer Monitoring Well

Supplementary Site Monitoring Well Location

- Alluvial Monitoring Well
- Moenkopi Formation (Moqui Member) Monitoring Well
- Moenkopi Formation (Wupatki Member) Monitoring Well
- C-Aquifer Monitoring Well

— Ephemeral Surface Water Feature

— Canal

— Approximate Extent of CCR Unit

Notes:

CCR Coal Combustion Residuals

0 1,250 2,500 Feet

N

Arizona Public Service
Cholla Power Plant
Navajo County, Arizona

FIGURE 1 CCR Units and Monitoring System Summary

Job No. 1420182040	
PM: MBH	
Date: 10/8/2020	
Scale: 1"= 2500'	

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APPENDIX A

EVALUATION OF GROUNDWATER REDOX CONDITIONS AT THE FAP

Technical Memorandum

To:	Arizona Public Service Company	File No:	14-2018-2040
From:	Dane Andersen, PG	Reviewed by:	Maren Henley, PE Bruce Wielinga
Date:	January 22, 2021		
Subject:	EVALUATION OF GROUNDWATER REDOX CONDITIONS AT THE FAP Arizona Public Service Cholla Power Plant – Navajo County, Arizona		

1.0 INTRODUCTION

This technical memorandum (Tech Memo) documents an evaluation of the reduction/oxidation (redox) processes in groundwater downgradient of the Fly Ash Pond (FAP), located at the Arizona Public Service Company (APS) Cholla Power Plant in Navajo County, Arizona (the Site). This evaluation was prepared pursuant to Coal Combustion Residuals (CCR) Rule requirements for groundwater monitoring and corrective action detailed in 40 Code of Federal Regulations Sections (§) 257.90 through 257.98 (Federal Register, 2018).

Site background, CCR groundwater monitoring system, and historical operational information are presented in the *Annual Groundwater Monitoring and Corrective Action Report for 2019* (Wood Environment & Infrastructure Solutions, Inc. [Wood], 2020a). The FAP is one of four CCR units at the Site and is a surface impoundment that receives flue gas desulfurization solids and fly ash slurry from the plant (Figure 1). The FAP occupies approximately 420 acres and was placed into service in 1978. The FAP was constructed by damming the drainage channel of an ephemeral tributary to the Little Colorado River. The unlined impoundment is primarily underlain by the Moqui member of the Moenkopi Formation; alluvial sediments are present both upgradient and downgradient of the FAP dam. The predominant groundwater flow direction at the toe of the FAP dam is the same direction of surface water flow in the former wash, i.e., to the west-southwest. Farther downgradient, groundwater merges with the Little Colorado River alluvial aquifer, where the predominant groundwater flow direction is to the west, parallel to the direction of surface water flow.

To the south of the FAP, the Joseph City Irrigation Company operates an irrigation pipeline/canal that conveys groundwater extracted from three production wells located southeast of the plant. The water is conveyed to agricultural properties in Joseph City, and near the FAP, the water is conveyed through an underground pipeline that runs parallel to and just south of I-40 (Figure 2). The pipeline discharges water to stock ponds and fields adjacent to the pipeline.

2.0 BASIS FOR INVESTIGATION

This evaluation was conducted to evaluate the relationship between arsenic concentrations and redox conditions in groundwater downgradient of the FAP. Arsenic, a constituent regulated under the CCR Rule's Appendix IV list, has been detected at concentrations exceeding the arsenic Groundwater Protection Standard of 0.010 milligrams per liter (mg/L) at FAP CCR compliance wells M-51A and MW-67A. The spatial distribution of arsenic in groundwater downgradient of the FAP is not consistent with other constituents of



concern (e.g., fluoride, lithium, molybdenum) or boron, which is a CCR indicator constituent (Wood, 2020b). For instance, arsenic concentrations decrease by an order of magnitude along the inferred groundwater flow path from M-51A towards downgradient well MW-65A, then increase by an order of magnitude from MW-65A to downgradient well MW-67A (Wood, 2020b).

Potential causes for the inconsistent spatial distribution of arsenic in groundwater were evaluated by Wood during an Alternative Source Demonstration (ASD) for arsenic at the FAP (Wood, 2020b). The ASD suggested that reducing conditions in groundwater downgradient of the FAP may be responsible for the mobilization of arsenic from aquifer sediments into groundwater, thereby causing the elevated arsenic concentrations at MW-67A (Wood, 2020b), but the ASD was inconclusive with respect to arsenic and further investigation was recommended.

Accordingly, Wood assessed the redox conditions at the FAP by analyzing groundwater samples collected from FAP downgradient wells during the second quarterly CCR monitoring event of 2020 for several redox-sensitive constituents, including:

- Dissolved and total inorganic compounds including iron, manganese, arsenic, and cobalt;
- Nitrate, ammonia, total organic carbon (TOC), dissolved organic carbon (DOC); and
- Ferrous iron (Fe^{2+}) and nitrite (NO_2^-) using field speciation methods.

These constituents can indicate the nature of redox conditions and the speciation of trace metals relevant to arsenic mobilization. Field measurements of dissolved oxygen (DO), oxidation-reduction potential (ORP), and pH were also collected to further assess the groundwater redox conditions.

3.0 DESCRIPTION OF INVESTIGATION ACTIVITIES

The monitoring wells selected for redox analyses are depicted on Figure 1. Groundwater samples were collected using dedicated low-flow sampling pumps and analyzed in May 2020 according to the sampling and analysis plan developed for the Site (Montgomery & Associates, 2015). Samples collected for dissolved inorganic compound analysis were field filtered using a 0.45-micron filter and immediately preserved with nitric acid. Each sample was labeled and placed on ice for transport to TestAmerica Laboratories, Inc., an Arizona Department of Health-certified laboratory (AZ0728) for analysis. Field speciation analyses for Fe^{2+} and NO_2^- were performed using a Hach® DR 900 colorimeter, and field measurements of DO, ORP, and pH were collected using a YSI multiparameter meter and in-line flow through cell connected to pump discharge tubing.

4.0 SAMPLING RESULTS AND ANALYSIS

Attachment A presents the laboratory analytical report for the collected samples, while Table 1 summarizes the laboratory results and field measurements¹. Figure 2 depicts concentrations of select redox constituents measured in the groundwater samples collected from the subject wells².

¹DO measurements were inadvertently recorded as percent oxygen during the May 2020 sampling event.

²M-64A is not depicted on Figure 2; reference Figure 1 for the M-64A well location and Table 1 for the M-64A redox analysis results.

4.1 General Results

Concentrations of dissolved inorganics were slightly lower than respective total (unfiltered) concentrations, indicating arsenic, cobalt, iron, and manganese are present in groundwater downgradient of the FAP predominately as dissolved constituents. The pH of the groundwater samples ranged from 7.1 to 7.5 standard units, indicating the concentrations of dissolved inorganics in the groundwater samples are not the result of mineral phase dissolution by low groundwater pH.

Dissolved arsenic was detected at concentrations one order of magnitude higher at M-51A and MW-67A than nearby FAP wells, a result which is consistent with previous sampling results for total arsenic at the FAP.

4.2 Analytical Laboratory Results for Redox Constituents

Two important constituents relative to the mobilization of arsenic in aquifer environments are iron (Fe^{2+}) and manganese (Mn^{2+}). Iron is a particularly good indicator of redox conditions, as the oxidation of Fe^{2+} to Fe^{3+} and precipitation of ferric hydroxide [$\text{Fe}(\text{OH})_3$] is very rapid under aerobic and neutral pH conditions. When present, Arsenic can sorb to Fe(III) and Mn(IV) oxides in aquifer sediments. Sorption is reversible and if reducing conditions occur, the reductive dissolution of iron and manganese oxyhydroxides results in the mobilization of Fe^{2+} and Mn^{2+} from the oxide minerals and the solubilization/release of the adsorbed arsenic (McMahon et al., 2009).

Ammonia and nitrate are also good indicators of redox conditions due to the nitrate (NO_3^- ; the most oxidized N species) and ammonia (NH_3 , a reduced N species) redox couple. Under aerobic conditions, ammonia can be rapidly oxidized to nitrate due to the activity of ammonia-oxidizing bacteria. Thus, the presence of ammonia combined with absence of nitrate can also indicate reducing conditions.

Figure 2 depicts analytical results for dissolved arsenic, dissolved iron, dissolved manganese, and ammonia from the groundwater samples collected at the FAP downgradient wells. Because each sample was field filtered and properly acidified after collection, the detected iron and manganese concentrations are considered reasonable estimates of Fe^{2+} and Mn^{2+} concentrations in each groundwater sample (Jurgens et al., 2009). The highest concentrations of dissolved iron and dissolved manganese were detected in the MW-67A groundwater sample at 7.8 and 4.9 mg/L, respectively. Dissolved iron and manganese were detected at lower concentrations in samples collected from M-46A (at 0.68 and 3.6 mg/L) and MW-66A (at 0.15 and 4.1 mg/L), respectively. The sample collected from the alluvial aquifer background well (i.e., M-64A) located more than a mile downgradient of the plant site contained dissolved iron and manganese at 5 mg/L and 1.9 mg/L, respectively. Ammonia was detected in the MW-67A, M-46A, and M-64A groundwater samples, ranging from 1.4 to 0.73 mg/L, while nitrate/nitrite was not detected in these groundwater samples above the laboratory reporting limit (RL) of 0.5 mg/L.

For groundwater samples collected from wells located immediately downgradient of the FAP (M-51A, M-50A, and W-123), dissolved iron, dissolved manganese, and ammonia were either not detected above RLs or detected at relatively low concentrations. For these wells, dissolved iron was not detected above the RL of 0.1 mg/L, detected concentrations of dissolved manganese ranged between 0.84 and 0.23 mg/L, and ammonia was not detected above the RL of 0.5 mg/L.

TOC and DOC, which can contribute to the development of reducing conditions, were measured at relatively comparable concentrations in all of the groundwater samples, ranging from 1.7 to 5.1 mg/L. The highest TOC concentrations were detected in samples collected from M-64A and M-46A.

4.3 Field Speciation Results

For the iron speciation sampling, the highest Fe^{2+} concentrations were detected in the MW-67A, M-64A, and M-46A groundwater samples, with concentrations ranging between 2.6 and 1.18 mg/L. Iron field speciation results for the remaining wells detected Fe^{2+} at concentrations ranging between 0.29 and 0.11 mg/L, while Fe^{2+} was not detected in the W-126 groundwater sample. The field speciation results for the NO_2^- sampling detected concentrations ranging from 0.001 to 0.009 mg/L in all groundwater samples except for the MW-64A sample, where NO_2^- was not detected.

The lower Fe^{2+} results measured from the speciation sampling (relative to the analytical laboratory results for dissolved iron) may be the result of the rapid oxidation of Fe^{2+} to Fe^{3+} during sample collection. Thus, the iron field speciation results for Fe^{2+} could be biased low relative to the analytical laboratory results for dissolved iron.

4.4 Field Parameters

DO concentrations at the FAP wells ranged from 0.13 to 2.30 percent oxygen during the May 2020 groundwater sampling event. Collected ORP measurements ranged from -77.7 mV to 111.7, with negative values recorded at MW-65A, MW-67A, and M-64A.

Because the data quality of field parameters (in particular DO and ORP) are not subject to the rigorous quality assurance/quality control procedures used to evaluate laboratory analytical data, the reported measurements are considered a rough approximation of the groundwater redox conditions.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The results of this groundwater redox evaluation can be summarized as follows:

- The relatively high concentrations of Fe^{2+} and Mn^{2+} in the MW-67A groundwater sample suggests that reductive dissolution of iron and manganese oxyhydroxides may play a role in elevated concentrations of arsenic in the vicinity of the well. This process results in the dissolution and mobilization of arsenic bound to the oxide minerals into groundwater. The elevated concentration of ammonia in the MW-67A groundwater sample also indicates reduced conditions in groundwater near the well which are consistent with arsenic mobility in groundwater.
- The relatively low concentrations of constituents associated with reduced conditions in the M-51A, M-50A, and W-123 groundwater samples suggests that the FAP is not promoting a reduced environment which could mobilize arsenic from aquifer sediments. As indicated in the ASD, seepage from the FAP is the likely cause of the elevated arsenic concentrations observed at M-51A (Wood, 2020b).
- The elevated concentrations of Fe^{2+} and Mn^{2+} detected in the M-64A groundwater sample suggest reducing conditions at the background well. However, arsenic concentrations in the MW-64A sample are two orders of magnitude lower than the MW-67A sample. The discrepancy between the measured arsenic concentrations is likely explained by mineralogical differences of the aquifer sediments in which each well is screened, as indicated by the M-67A and M-64A lithologic logs (Attachment B).

The results of this evaluation suggest the FAP is not the cause of the elevated arsenic concentrations at MW-67A. Rather, the analytical data indicate reduced conditions in groundwater are causing the mobilization of arsenic from aquifer sediments into groundwater near MW-67A. Accordingly, the iso-concentration contour for arsenic concentrations in groundwater downgradient of the FAP has been revised and is depicted on Figure 2. A potential cause of the reduced conditions at MW-67A is the irrigation/stock pond and irrigated rangeland located hydraulically upgradient of the well (Figure 2) (Wood, 2020b).

Further evaluation of groundwater redox conditions at the FAP is warranted to support this interpretation. Therefore, Wood recommends three additional rounds of laboratory analysis of groundwater samples collected from wells, M-50A, M-51A, W-123, W-126, MW-65A, MW-66A, MW-67A, M-46A, and M-64A for dissolved iron, dissolved manganese, ammonia, nitrate, total organic carbon, and dissolved organic carbon.

6.0 REFERENCES

- Federal Register, 2018. *40 Code of Federal Regulations Part 257 – Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule promulgated April 17, 2015 with Amendments to the National Minimum Criteria (Phase One, Part One) effective August 29, 2018.*
- Jurgens, B. C., McMahon, P. B., Chapelle, F. H., & Eberts, S. M., 2009. *An Excel workbook for identifying redox processes in ground water.*
- McMahon, P. B., Cowdery, T. K., Chapelle, F. H., & Jurgens, B. C., 2009. *Redox conditions in selected principal aquifers of the United States* (No. 2009-3041). United States Geological Survey.
- Montgomery & Associates, 2015. *Groundwater Sampling and Analysis Program, Cholla Power Plant, Joseph City, Arizona.* Prepared for APS. November 30, 2015.
- Wood Environment & Infrastructure Solutions, Inc. (Wood), 2020a. *Annual Groundwater Monitoring and Corrective Action Report for 2019. Coal Combustion Residuals Rule and Aquifer Protection Permit Compliance.* Arizona Public Service Company. Cholla Power Plant, Navajo County, Arizona. Prepared on behalf of Arizona Public Service. January 31, 2020.
- Wood, 2020b. *Alternative Source Demonstration for Arsenic and Cobalt at the FAP, Arizona Public Service Cholla Power Plant – Navajo County, Arizona.* Prepared on behalf of Arizona Public Service. January 31, 2020.

TABLE

Table 1 - Redox Sampling Results for the FAP

Well Identification		M-46A	M-51A	M-50A	MW-65A	MW-66A	MW-67A	W-123	W-126	M-64A ²
Sample Date		5/5/2020	5/6/2020	5/6/2020	5/5/2020	5/5/2020	5/5/2020	5/6/2020	5/5/2020	5/6/2020
Constituent	Units									
Ammonia (NH ₃ as N)	mg/L	0.82	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	<0.5	0.73
Arsenic (total)	mg/L	0.0013	0.015	0.0027	0.0016	0.0017	0.017	0.0012	0.0014	0.00086
Arsenic (dissolved)	mg/L	0.0011	0.015	0.0024	0.0017	0.0017	0.015	0.0015	0.0023	0.0005
Cobalt (total)	mg/L	0.00081	0.0013	0.00066	0.0033	0.0014	0.0045	0.003	0.0038	<0.0005
Cobalt (dissolved)	mg/L	0.00079	0.00078	<0.0005	0.0026	0.001	0.0038	0.0023	0.0036	<0.0005
Iron (total)	mg/L	1	<0.1	<0.1	<0.1	0.23	8	0.16	<0.1	5.5
Iron (dissolved)	mg/L	0.68	<0.1	<0.1	<0.1	0.15	7.8	<0.1	<0.1	5
Ferrous Iron ¹	mg/L	1.18	0.18	0.11	0.12	0.23	2.6	0.29	0	1.47
Manganese (total)	mg/L	3.8	0.89	0.25	0.31	4.3	5.1	<0.01	0.12	2.2
Manganese (dissolved)	mg/L	3.6	0.84	0.23	0.29	4.1	4.9	<0.01	0.1	1.9
Nitrate/Nitrite as N	mg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.83	<0.5	<0.5
Nitrite ¹	mg/L	0.008	0.002	0.002	0.006	0.009	0.001	0.002	0.002	0
Total Organic Carbon	mg/L	3.2	1.7	2.9	2.1	2.7	2.3	2.1	2.3	5.1
Dissolved Organic Carbon	mg/L	3.8	1.8	2.9	2.4	2.3	2.2	1.9	2.3	5
Oxidation-Reduction Potential	mV	38.4	36.8	111.7	-77.7	77.3	-75.5	43.9	104.4	-40.8
Dissolved Oxygen	% oxygen	0.42	0.13	0.17	0.32	0.22	0.20	1.79	2.30	0.27
pH	su	7.4	7.2	7.5	7.4	7.3	7.1	7.5	7.5	7.3

Notes:¹Results from field speciation sampling²Background well for FAP**Abbreviations:**

FAP - Fly Ash Pond

mg/L - milligrams per Liter

mV - millivolts

NM - not measured

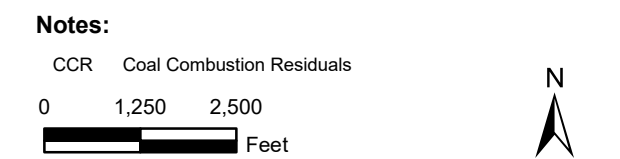
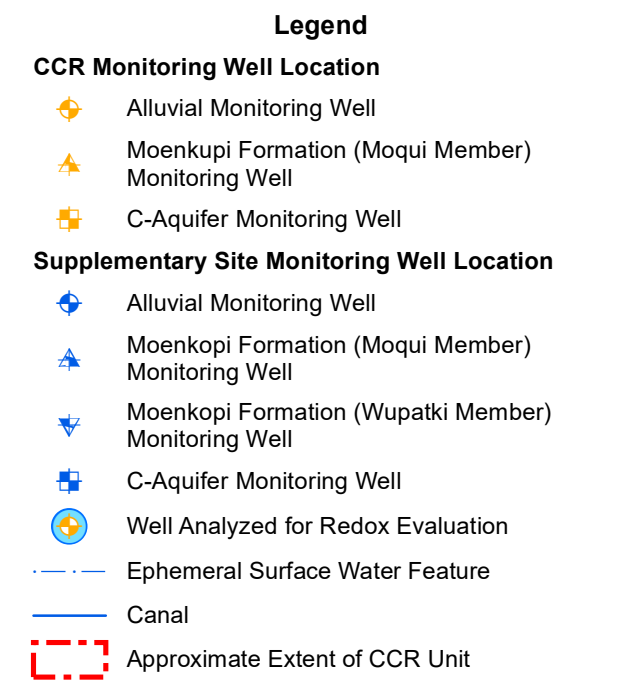
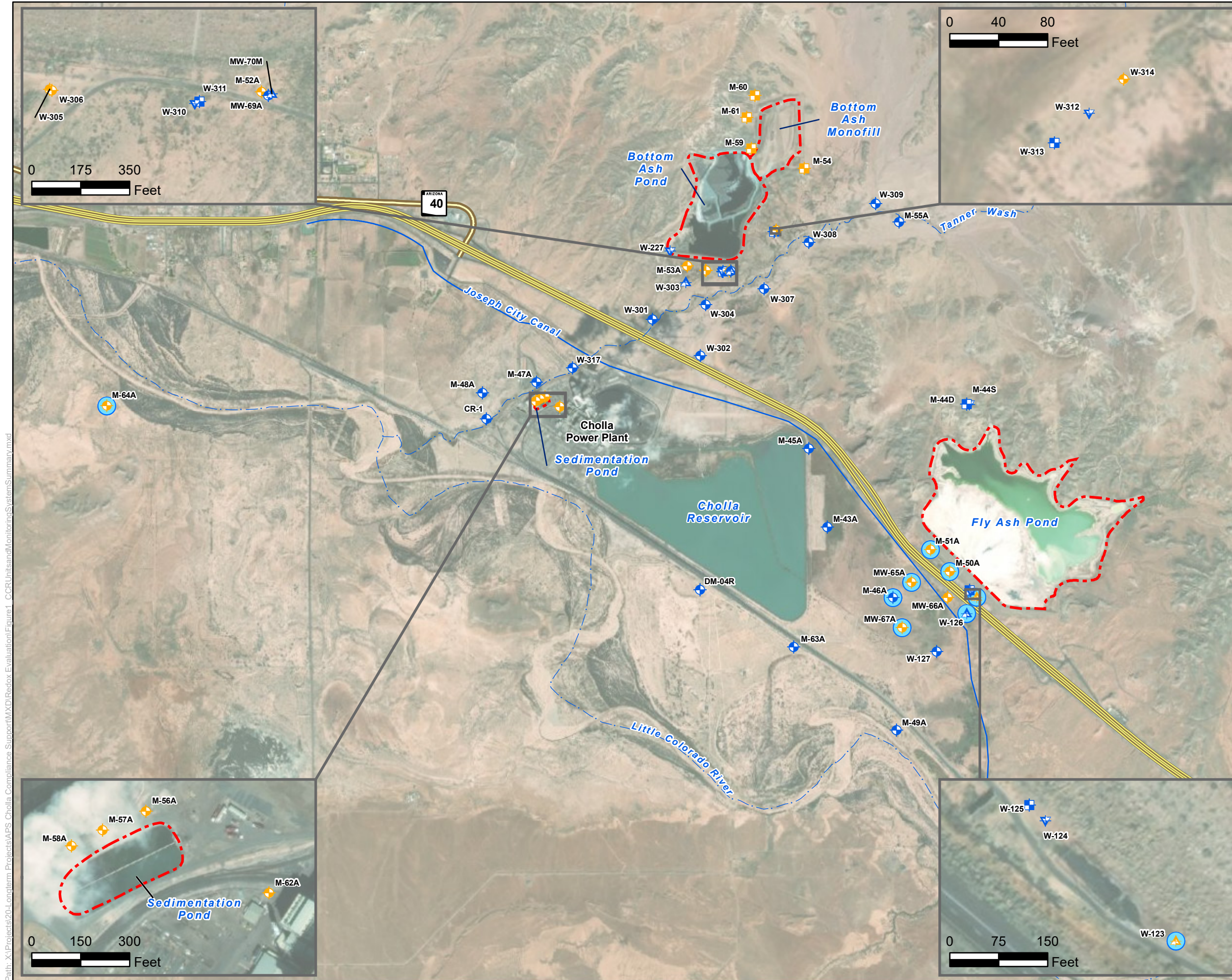
su - standard units

" < " - Constituent not detected above laboratory reporting limit

wood.

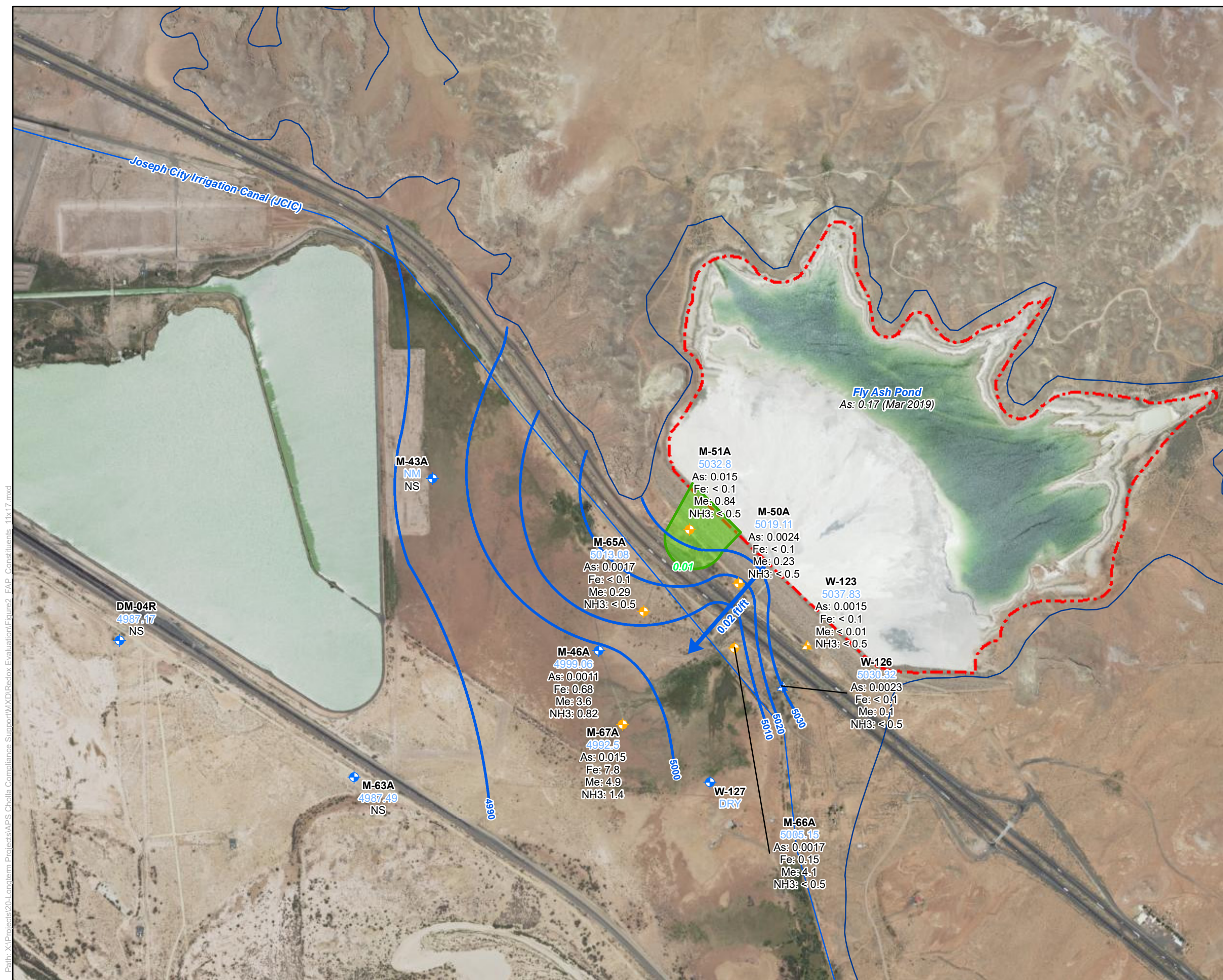
FIGURES





Arizona Public Service Cholla Power Plant Navajo County, Arizona	
FIGURE 1	CCR Units and Monitoring System Summary
<div>Job No. 1420182040 PM: MBH Date: 1/22/2021 Scale: 1"= 2500'</div> <div>wood.</div>	
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Path: X:\Projects\20-Longterm Projects\APS Cholla Compliance Support\MXD\Redox Evaluation\Figure2_FAP_Constituents_11x17.mxd



Legend

CCR Monitoring Well Location

- Alluvial Monitoring Well
- Moenkupi Formation (Moqui Member) Monitoring Well

Supplementary Site Monitoring Well Location

- Alluvial Monitoring Well
- Moenkupi Formation (Moqui Member) Monitoring Well
- Moenkupi Formation (Wupatki Member) Monitoring Well
- C-Aquifer Monitoring Well

Canal

Groundwater Elevation Contour (ft amsl)
Alluvial Aquifer; dashed where inferred

Groundwater Flow Direction

Extent of Alluvial Material

Approximate Extent of CCR Unit

>0.01 mg/L

GWPS (0.01 mg/L; Dashed Where Inferred)

Notes and Abbreviations:

MW-65A Well Identification
5013.08 Groundwater Elevation (ft amsl)
Measured in April 2020

As: 0.0017 Dissolved arsenic concentration in mg/L
Fe: < 0.1 Dissolved iron concentration in mg/L
Mn: 0.29 Dissolved manganese concentration in mg/L
NH3: < 0.5 Ammonia concentration in mg/L
ft amsl Feet above mean sea level
NM Not measured
NS Not sampled
CCR Coal Combustion Residuals
GWPS Groundwater Protection Standard
mg/L Milligram per liter

- Unless otherwise noted, arsenic, iron, manganese, and ammonia concentrations were measured in May 2020
- Groundwater contours based on measurements from April 2020



Arizona Public Service Cholla Power Plant Navajo County, Arizona	
Figure 2	Groundwater Redox Evaluation Map
Job No. 14-2018-2040 PM: MBH Date: 1/20/2021 Scale: 1"= 1,000'	wood.
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ATTACHMENT A – ANALYTICAL LABORATORY REPORT

ANALYTICAL REPORT

Eurofins TestAmerica, Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-141925-1

Laboratory SDG: APS Cholla Power Plant (FAP)
Client Project/Site: CCR Groundwater Monitoring

For:

Arizona Public Service Company
PO BOX 188, Ste. 4458
Joseph City, Arizona 86032

Attn: Natalie Chrisman



Authorized for release by:
6/10/2020 9:55:51 AM

Ken Baker, Project Manager II
(602)659-7624
ken.baker@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	5
Sample Summary	9
Detection Summary	10
Client Sample Results	19
QC Sample Results	36
QC Association Summary	64
Lab Chronicle	77
Certification Summary	88
Method Summary	90
Chain of Custody	91
Receipt Checklists	95



Definitions/Glossary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
D5	Minimum Reporting Limit (MRL) adjusted due to sample dilution; analyte was non-detect in the sample.
M1	Matrix spike recovery was high, the associated blank spike recovery was acceptable.
M2	Matrix spike recovery was low, the associated blank spike recovery was acceptable.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.
R13	MS/MSD RPD exceeded the method acceptance limit. Matrix spike recovery was outside acceptance criteria. Batch precision and accuracy were demonstrated.

Metals

Qualifier	Qualifier Description
B3	Target analyte detected in calibration blank at or above the method reporting limit.
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
M2	Matrix spike recovery was low, the associated blank spike recovery was acceptable.

General Chemistry

Qualifier	Qualifier Description
D2	Sample required dilution due to high concentration of analyte.
H1	Sample analysis performed past holding time.
H5	This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.
M1	Matrix spike recovery was high, the associated blank spike recovery was acceptable.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.
N1	See case narrative.
R13	MS/MSD RPD exceeded the method acceptance limit. Matrix spike recovery was outside acceptance criteria. Batch precision and accuracy were demonstrated.
R4	MS/MSD RPD exceeded the method control limit. Recovery met acceptance criteria.
V1	CCV recovery was above method acceptance limits. This target analyte was not detected in the sample.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control

Definitions/Glossary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Job ID: 550-141925-1

Laboratory: Eurofins TestAmerica, Phoenix

Narrative

Job Narrative 550-141925-1

Comments

No additional comments.

Receipt

The samples were received on 5/8/2020 12:35 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 0.5° C, 0.5° C, 0.6° C and 1.0° C.

Receipt Exceptions

Did not receive sample containers for dissolved methods for the last sample on the COC.

CH-TANNERS-0520

CH-CCR-M44D-0520 (550-141925-1), CH-CCR-M46-0520 (550-141925-2), CH-CCR-M46-0520 (550-141925-2[DU]), CH-CCR-M46-0520 (550-141925-2[MS]), CH-CCR-M46-0520 (550-141925-2[MSD]), CH-CCR-M46-0520 (550-141925-3), CH-CCR-M46-0520 (550-141925-3[MS]), CH-CCR-M46-0520 (550-141925-3[MSD]), CH-CCR-M50A-0520 (550-141925-4), CH-CCR-M50A-0520 (550-141925-5), CH-CCR-M51A-0520 (550-141925-6), CH-CCR-M51A-0520 (550-141925-7), CH-CCR-M64-0520 (550-141925-8), CH-CCR-M64-0520 (550-141925-9), CH-CCR-M65-0520 (550-141925-10), CH-CCR-M65-0520 (550-141925-11), CH-CCR-M66-0520 (550-141925-12), CH-CCR-M66-0520 (550-141925-13), CH-CCR-M67-0520 (550-141925-14), CH-CCR-M67-0520 (550-141925-15), CH-CCR-W123-0520 (550-141925-16), CH-CCR-W123-0520 (550-141925-17), CH-CCR-W125-0520 (550-141925-18), CH-CCR-W126-0520 (550-141925-19), CH-CCR-W126-0520 (550-141925-20), CH-CCR-FD05-0520 (550-141925-21), CH-CCR-FD05-0520 (550-141925-22), CH-TANNERS-0520 (550-141925-23), CH-CCR-W309-0520 (550-141925-24) and CH-CCR-W309-0520 (550-141925-25)

The following samples for metals were received unpreserved and were preserved upon receipt to the laboratory: CH-CCR-M44D-0520 (550-141925-1), CH-CCR-M46-0520 (550-141925-2), CH-CCR-M46-0520 (550-141925-2[DU]), CH-CCR-M46-0520 (550-141925-2[MS]), CH-CCR-M46-0520 (550-141925-2[MSD]), CH-CCR-M46-0520 (550-141925-3), CH-CCR-M46-0520 (550-141925-3[MS]), CH-CCR-M46-0520 (550-141925-3[MSD]), CH-CCR-M50A-0520 (550-141925-4), CH-CCR-M50A-0520 (550-141925-5), CH-CCR-M51A-0520 (550-141925-6), CH-CCR-M51A-0520 (550-141925-7), CH-CCR-M64-0520 (550-141925-8), CH-CCR-M64-0520 (550-141925-9), CH-CCR-M65-0520 (550-141925-10), CH-CCR-M65-0520 (550-141925-11), CH-CCR-M66-0520 (550-141925-12), CH-CCR-M66-0520 (550-141925-13), CH-CCR-M67-0520 (550-141925-14), CH-CCR-M67-0520 (550-141925-15), CH-CCR-W123-0520 (550-141925-16), CH-CCR-W123-0520 (550-141925-17), CH-CCR-W125-0520 (550-141925-18), CH-CCR-W126-0520 (550-141925-19), CH-CCR-W126-0520 (550-141925-20), CH-CCR-FD05-0520 (550-141925-21), CH-CCR-FD05-0520 (550-141925-22), CH-TANNERS-0520 (550-141925-23), CH-CCR-W309-0520 (550-141925-24) and CH-CCR-W309-0520 (550-141925-25). Regulatory documents require a 24-hour waiting period from the time of the addition of the acid preservative to the time of digestion.

post preserved for all dissolved metals samples, client has field filtered written on all of the samples they were all received unpreserved.

Samples were received no methods were requested on the COC.

Did not add methods to these samples.

CH-CCR-W309-0520 (550-141925-24) and CH-CCR-W309-0520 (550-141925-25)

Several sample sites were not available for the sample site enforcement.

CH-CCR-M44D-0520 (550-141925-1), CH-CCR-M46-0520 (550-141925-2), CH-CCR-M46-0520 (550-141925-2[DU]), CH-CCR-M46-0520 (550-141925-2[MS]), CH-CCR-M46-0520 (550-141925-2[MSD]), CH-CCR-M46-0520 (550-141925-3), CH-CCR-M46-0520 (550-141925-3[MS]), CH-CCR-M46-0520 (550-141925-3[MSD]), CH-CCR-M50A-0520 (550-141925-4), CH-CCR-M50A-0520 (550-141925-5), CH-CCR-M51A-0520 (550-141925-6), CH-CCR-M51A-0520 (550-141925-7), CH-CCR-M64-0520 (550-141925-8), CH-CCR-M64-0520 (550-141925-9), CH-CCR-M65-0520 (550-141925-10), CH-CCR-M65-0520 (550-141925-11), CH-CCR-M66-0520 (550-141925-12), CH-CCR-M66-0520 (550-141925-13), CH-CCR-M67-0520 (550-141925-14), CH-CCR-M67-0520 (550-141925-15), CH-CCR-W123-0520 (550-141925-16), CH-CCR-W123-0520 (550-141925-17), CH-CCR-W125-0520 (550-141925-18),

Case Narrative

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Job ID: 550-141925-1 (Continued)

Laboratory: Eurofins TestAmerica, Phoenix (Continued)

CH-CCR-W126-0520 (550-141925-19), CH-CCR-W126-0520 (550-141925-20), CH-CCR-FD05-0520 (550-141925-21), CH-CCR-FD05-0520 (550-141925-22), CH-TANNERS-0520 (550-141925-23), CH-CCR-W309-0520 (550-141925-24) and CH-CCR-W309-0520 (550-141925-25)

HPLC/IC

Method 300.0: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for 550-210077 were outside control limits for Fluoride. Sample matrix interference and/or non-homogeneity were suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) recoveries and precision were within acceptance limits.

Method 300.0: The following sample was diluted for Fluoride by method EPA 300.0 due to the nature of the sample matrix: CH-CCR-M46-0520 (550-141925-2). The sample contained high concentrations of Chloride and Sulfate which exceeded the maximum column capacity. Fluoride was not detected in the diluted sample; as such, an elevated reporting limit (RL) has been provided and the data has been qualified with D1 and D5 flags.

Method 300.0: The matrix spike duplicate (MSD) recovery and the matrix spike / matrix spike duplicate (MS/MSD) precision for 550-210077 were outside control limits for Sulfate. Sample matrix interference and/or non-homogeneity were suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) recoveries and precision were within acceptance limits.

Method 300.0: The matrix spike duplicate (MSD) recovery and the matrix spike / matrix spike duplicate (MS/MSD) precision for 550-210201 were outside control limits for Nitrate Nitrite as N by method EPA 300.0. Sample matrix interference and/or non-homogeneity were suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) recoveries and precision were within acceptance limits.

Method 300.0: The following sample was diluted for Fluoride by method EPA 300.0 due to the nature of the sample matrix: CH-CCR-M64-0520 (550-141925-8). The sample contained high concentrations of Chloride and Sulfate which exceeded the instrument's maximum column capacity. Fluoride was not detected in the diluted sample. As such, an elevated reporting limit (RL) has been provided and the data has been qualified with D1 and D5 flags.

Method 300.0: The following samples were diluted for Fluoride by method EPA 300.0 due to the nature of the samples matrix: CH-CCR-W125-0520 (550-141925-18) and CH-CCR-FD05-0520 (550-141925-21). The samples contained high concentrations of Chloride and Sulfate which exceeded the instrument's maximum column capacity. Fluoride was not detected in the diluted samples. As such, elevated reporting limits (RLs) have been provided and these data have been qualified with D1 and D5 flags.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method 200.8 LL: The continuing calibration blank (CCB) for analytical batch 550-210296 contained thallium above the reporting limit (RL). All reported samples associated with this CCB were ND for this analyte; therefore, re-analysis of samples was not performed.

Method 200.7 Rev 4.4: The following sample was diluted to bring the concentration of target analytes within the calibration range: CH-CCR-W309-0520 (550-141925-24). Elevated reporting limits (RLs) are provided.

Method 200.7 Rev 4.4: The following samples were diluted to bring the concentration of target analytes within the calibration range: CH-CCR-M65-0520 (550-141925-10), CH-CCR-M66-0520 (550-141925-12), CH-CCR-M67-0520 (550-141925-14), CH-CCR-W123-0520 (550-141925-16) and CH-CCR-FD05-0520 (550-141925-21). Elevated reporting limits (RLs) are provided.

Method 200.7 Rev 4.4: The continuing calibration blank (CCB) for analytical batch 550-211160 contained sodium above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

Method 200.7 Rev 4.4: The following samples were diluted to bring the concentration of target analytes within the calibration range: CH-CCR-M46-0520 (550-141925-2), CH-CCR-M50A-0520 (550-141925-4), CH-CCR-M51A-0520 (550-141925-6), CH-CCR-M64-0520 (550-141925-8), CH-CCR-W126-0520 (550-141925-19) and CH-TANNERS-0520 (550-141925-23). Elevated reporting limits (RLs) are provided.

Case Narrative

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Job ID: 550-141925-1 (Continued)

Laboratory: Eurofins TestAmerica, Phoenix (Continued)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

Method SM 5310B: The following samples were prepared outside of preparation holding time due to late receipt due to transfer : CH-CCR-M65-0520 (550-141925-11), CH-CCR-M66-0520 (550-141925-13) and CH-CCR-M67-0520 (550-141925-15).

Method SM 5310B: Reanalysis of the following samples were performed outside of the analytical holding time; these samples were received shortly before their hold time expired, so reanalysis was outside of hold time : CH-CCR-M50A-0520 (550-141925-5), CH-CCR-M51A-0520 (550-141925-7), CH-CCR-M64-0520 (550-141925-9), CH-CCR-M65-0520 (550-141925-11), CH-CCR-M66-0520 (550-141925-13), CH-CCR-M67-0520 (550-141925-15), CH-CCR-W123-0520 (550-141925-17), CH-CCR-W126-0520 (550-141925-20), CH-CCR-FD05-0520 (550-141925-22), (550-141925-B-9 MS) and (550-141925-B-9 MSD).

Methods 9060A, SM 5310B: The continuing calibration blank (CCB) associated with analytical batch 280-497611 contained <AffectedAnalytes> greater than one-half the reporting limit (RL). The samples could not be re-analyzed because they were used up in processing. All other associated QC, including associated method blanks were passing, detection in this CCB was most likely the result of a small amount of contamination. The sample results have been qualified and reported.

Method SM 5310B: Reanalysis of the following samples was performed outside of the analytical holding time due to initial late receipt : CH-CCR-M50A-0520 (550-141925-5), CH-CCR-M51A-0520 (550-141925-7), CH-CCR-M64-0520 (550-141925-9), CH-CCR-M65-0520 (550-141925-11), CH-CCR-M66-0520 (550-141925-13), CH-CCR-M67-0520 (550-141925-15), CH-CCR-W123-0520 (550-141925-17), CH-CCR-W126-0520 (550-141925-20), CH-CCR-FD05-0520 (550-141925-22), (550-141925-B-9 MS) and (550-141925-B-9 MSD).

Method SM 5310B: The continuing calibration blank (CCB) associated with analytical batch 280-497612 contained <AffectedAnalytes> greater than one-half the reporting limit (RL). The samples could not be re-analyzed because they were used up in processing. The sample results have been qualified and reported. Since all other associated QC and method blanks are passing, it is likely that this was a result of contamination in the CCB vial, rather than instrument issues.

Method SM 5310B: The following samples in batch 497612 were run out of the hold: CH-CCR-M65-0520 (550-141925-11), CH-CCR-M66-0520 (550-141925-13), CH-CCR-M67-0520 (550-141925-15) and CH-CCR-W126-0520 (550-141925-20). The samples were prepped within hold but due to the instrument run time, the samples were analyzed outside of holding time.

Method SM 5310B: The associated sample was prepared and placed on the instrument prior to hold time exceedance. Due to the instrument run time, the sample was analyzed outside of the holding time.

CH-CCR-M46-0520 (550-141925-3)

Method SM 5310B: The reference method SM5310B requires samples analyzed for the Dissolved Organic Carbon (DOC) to be filtered and preserved to a pH<2. The following sample(was received field filtered but unpreserved: CH-CCR-W309-0520 (550-141925-25) and (550-141925-B-25 DU). The sample was preserved to the appropriate pH<2 using hydrochloric acid 1:1 in the laboratory prior to analysis.

Method SM 5310B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 440-610686. Laboratory Control Sample Duplicate (LCSD) was analyzed and met acceptance criteria.

Method SM 5310B: The results for the source sample corresponding with the matrix spike / matrix spike duplicate (MS/MSD) associated with analytical batch 550-210096 for Total Organic Carbon (TOC) by method SM 5310B did not meet the method quality control requirements for reporting. The consecutive injections exceeded the relative percent difference requirement of 10; therefore, no results could not be reported and reanalysis was required. The associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) results met method acceptance criteria and may be used to verify batch accuracy and precision data. As such, the following associated samples have been reported and qualified with N1 flags.

CH-CCR-M50A-0520 (550-141925-4), CH-CCR-M51A-0520 (550-141925-6), CH-CCR-M64-0520 (550-141925-8), CH-CCR-M66-0520 (550-141925-12), CH-CCR-M67-0520 (550-141925-14), CH-CCR-W123-0520 (550-141925-16) and CH-CCR-FD05-0520 (550-141925-21)

Method SM 5310B: The matrix spike recovery and the matrix spike / matrix spike duplicate (MS/MSD) precision for 550-211616 were

Case Narrative

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Job ID: 550-141925-1 (Continued)

Laboratory: Eurofins TestAmerica, Phoenix (Continued)

outside control limits for Total Organic Carbon (TOC). Sample matrix interference and/or non-homogeneity were suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) recoveries and precision were within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
550-141925-1	CH-CCR-M44D-0520	Water	05/07/20 09:35	05/08/20 12:35	
550-141925-2	CH-CCR-M46-0520	Water	05/05/20 10:01	05/08/20 12:35	
550-141925-3	CH-CCR-M46-0520	Water	05/05/20 10:01	05/08/20 12:35	
550-141925-4	CH-CCR-M50A-0520	Water	05/06/20 13:46	05/08/20 12:35	
550-141925-5	CH-CCR-M50A-0520	Water	05/06/20 13:46	05/08/20 12:35	
550-141925-6	CH-CCR-M51A-0520	Water	05/06/20 15:15	05/08/20 12:35	
550-141925-7	CH-CCR-M51A-0520	Water	05/06/20 15:15	05/08/20 12:35	
550-141925-8	CH-CCR-M64-0520	Water	05/06/20 08:13	05/08/20 12:35	
550-141925-9	CH-CCR-M64-0520	Water	05/06/20 08:13	05/08/20 12:35	
550-141925-10	CH-CCR-M65-0520	Water	05/05/20 08:16	05/08/20 12:35	
550-141925-11	CH-CCR-M65-0520	Water	05/05/20 08:16	05/08/20 12:35	
550-141925-12	CH-CCR-M66-0520	Water	05/05/20 12:46	05/08/20 12:35	
550-141925-13	CH-CCR-M66-0520	Water	05/05/20 12:46	05/08/20 12:35	
550-141925-14	CH-CCR-M67-0520	Water	05/05/20 11:22	05/08/20 12:35	
550-141925-15	CH-CCR-M67-0520	Water	05/05/20 11:22	05/08/20 12:35	
550-141925-16	CH-CCR-W123-0520	Water	05/06/20 11:14	05/08/20 12:35	
550-141925-17	CH-CCR-W123-0520	Water	05/06/20 11:14	05/08/20 12:35	
550-141925-18	CH-CCR-W125-0520	Water	05/06/20 12:45	05/08/20 12:35	
550-141925-19	CH-CCR-W126-0520	Water	05/05/20 14:09	05/08/20 12:35	
550-141925-20	CH-CCR-W126-0520	Water	05/05/20 14:09	05/08/20 12:35	
550-141925-21	CH-CCR-FD05-0520	Water	05/06/20 08:13	05/08/20 12:35	
550-141925-22	CH-CCR-FD05-0520	Water	05/06/20 08:13	05/08/20 12:35	
550-141925-23	CH-TANNERS-0520	Water	05/08/20 08:02	05/08/20 12:35	
550-141925-24	CH-CCR-W309-0520	Water	05/04/20 14:24	05/08/20 12:35	
550-141925-25	CH-CCR-W309-0520	Water	05/04/20 14:24	05/08/20 12:35	

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M44D-0520

Lab Sample ID: 550-141925-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	970	D2	400	mg/L	200		300.0	Total/NA
Fluoride	0.81	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	310	D1	4.0	mg/L	2		300.0	Total/NA
Calcium	89		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	49		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	4.8		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	630		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	100		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	100		6.0	mg/L	1		SM 2320B	Total/NA

Client Sample ID: CH-CCR-M46-0520

Lab Sample ID: 550-141925-2

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7100	D2 M1	400	mg/L	200		300.0	Total/NA
Sulfate	7800	D2 M1 R13	400	mg/L	200		300.0	Total/NA
Boron	0.64		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	1300		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	1.0		0.10	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.35		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	240		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	3.8		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	21		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	2700	D2	5.0	mg/L	10		200.7 Rev 4.4	Total/NA
Arsenic	0.0013		0.00050	mg/L	1		200.8 LL	Total/NA
Barium	0.031	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Chromium	0.0011		0.0010	mg/L	1		200.8 LL	Total/NA
Cobalt	0.00081		0.00050	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.0068		0.00050	mg/L	1		200.8 LL	Total/NA
Alkalinity as CaCO3	200		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	200		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	13000	D2	200	mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	7.8	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Ammonia	0.82		0.50	mg/L	1		SM 4500 NH3 D	Total/NA
Total Organic Carbon	3.2	M1 R13	0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	3.2	M1 R4	0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	3.2	M1 R4	0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-M46-0520

Lab Sample ID: 550-141925-3

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Iron	0.68		0.10	mg/L	1		200.7 Rev 4.4	Dissolved
Manganese	3.6	M2	0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.0011		0.00050	mg/L	1		200.8 LL	Dissolved
Cobalt	0.00079		0.00050	mg/L	1		200.8 LL	Dissolved
Dissolved Organic Carbon	3.8	H1 V1	1.0	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	3.8	H1 V1	1.0	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-M50A-0520

Lab Sample ID: 550-141925-4

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1900	D2	400	mg/L	200		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M50A-0520 (Continued)

Lab Sample ID: 550-141925-4

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	2.3	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	3000	D2	400	mg/L	200		300.0	Total/NA
Boron	3.0		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	600		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.55		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	200		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.25		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	9.8		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	1600	D2	5.0	mg/L	10		200.7 Rev 4.4	Total/NA
Arsenic	0.0027		0.00050	mg/L	1		200.8 LL	Total/NA
Barium	0.0093	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Chromium	0.0024		0.0010	mg/L	1		200.8 LL	Total/NA
Cobalt	0.00066		0.00050	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.0065		0.00050	mg/L	1		200.8 LL	Total/NA
Selenium	0.0018		0.00050	mg/L	1		200.8 LL	Total/NA
Alkalinity as CaCO ₃	160		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO ₃	160		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	7700	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	7.9	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	2.9	N1	0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	3.0	N1	0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	2.9	N1	0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-M50A-0520

Lab Sample ID: 550-141925-5

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.23		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.0024		0.00050	mg/L	1		200.8 LL	Dissolved
Dissolved Organic Carbon	2.9	M1 V1	1.0	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	2.9	M1 V1	1.0	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-M51A-0520

Lab Sample ID: 550-141925-6

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5300	D2	400	mg/L	200		300.0	Total/NA
Fluoride	5.6	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	2900	D2	400	mg/L	200		300.0	Total/NA
Boron	32		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	860		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.65		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	280		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.89		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	35		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	3000	D2	5.0	mg/L	10		200.7 Rev 4.4	Total/NA
Arsenic	0.015		0.00050	mg/L	1		200.8 LL	Total/NA
Barium	0.0091	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Chromium	0.0026	D1	0.0020	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0013	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.090		0.00050	mg/L	1		200.8 LL	Total/NA
Alkalinity as CaCO ₃	83		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO ₃	83		6.0	mg/L	1		SM 2320B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M51A-0520 (Continued)

Lab Sample ID: 550-141925-6

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Total Dissolved Solids	12000	D2	200	mg/L	1		SM 2540C	Total/NA
pH	7.2	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	8.4	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	1.7	N1	0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	1.7	N1	0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	1.7	N1	0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-M51A-0520

Lab Sample ID: 550-141925-7

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.84		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.015		0.00050	mg/L	1		200.8 LL	Dissolved
Cobalt	0.00078		0.00050	mg/L	1		200.8 LL	Dissolved
Dissolved Organic Carbon	1.8	V1	1.0	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	1.7	V1	1.0	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-M64-0520

Lab Sample ID: 550-141925-8

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3900	D2	400	mg/L	200		300.0	Total/NA
Sulfate	3900	D2	400	mg/L	200		300.0	Total/NA
Boron	1.2		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	520		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	5.5		0.10	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.47		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	230		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	2.2		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	20		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	3400	D2	5.0	mg/L	10		200.7 Rev 4.4	Total/NA
Arsenic	0.00086		0.00050	mg/L	1		200.8 LL	Total/NA
Barium	0.013	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0042		0.00050	mg/L	1		200.8 LL	Total/NA
Alkalinity as CaCO3	490		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	490		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	12000	D2	200	mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	8.5	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Ammonia	0.73		0.50	mg/L	1		SM 4500 NH3 D	Total/NA
Total Organic Carbon	5.1	N1	0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	5.1	N1	0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	5.1	N1	0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-M64-0520

Lab Sample ID: 550-141925-9

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Iron	5.0		0.10	mg/L	1		200.7 Rev 4.4	Dissolved
Manganese	1.9		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.00050		0.00050	mg/L	1		200.8 LL	Dissolved
Dissolved Organic Carbon	5.0	V1	1.0	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	5.0	V1	1.0	mg/L	1		SM 5310B	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M65-0520

Lab Sample ID: 550-141925-10

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3600	D2	400	mg/L	200		300.0	Total/NA
Fluoride	1.8	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	2900	D2	400	mg/L	200		300.0	Total/NA
Boron	11		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	750		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.67		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	270		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.31		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	30		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	1900	B3 D1	5.0	mg/L	10		200.7 Rev 4.4	Total/NA
Arsenic	0.0016	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Barium	0.015	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Cadmium	0.00010		0.00010	mg/L	1		200.8 LL	Total/NA
Chromium	0.0052	D2	0.0020	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0033	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.065		0.00050	mg/L	1		200.8 LL	Total/NA
Selenium	0.0017	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Alkalinity as CaCO3	150		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	150		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	9400	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	8.4	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	2.1		0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	2.1		0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	2.1		0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-M65-0520

Lab Sample ID: 550-141925-11

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.29		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.0017		0.00050	mg/L	1		200.8 LL	Dissolved
Cobalt	0.0026		0.00050	mg/L	1		200.8 LL	Dissolved
Dissolved Organic Carbon	2.4	H1	1.0	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	2.4	H1	1.0	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-M66-0520

Lab Sample ID: 550-141925-12

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4600	D2	400	mg/L	200		300.0	Total/NA
Fluoride	1.1	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	3100	D2	400	mg/L	200		300.0	Total/NA
Boron	1.6		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	800		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.23		0.10	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.68		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	280		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	4.3		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	14		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	2400	B3 D1	5.0	mg/L	10		200.7 Rev 4.4	Total/NA
Arsenic	0.0017	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Barium	0.015	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Cadmium	0.00027		0.00010	mg/L	1		200.8 LL	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M66-0520 (Continued)

Lab Sample ID: 550-141925-12

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chromium	0.016	D2	0.0020	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0014	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.014		0.00050	mg/L	1		200.8 LL	Total/NA
Selenium	0.027	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Alkalinity as CaCO3	150		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	150		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	11000	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	10.7	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	2.7	N1	0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	2.7	N1	0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	2.7	N1	0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-M66-0520

Lab Sample ID: 550-141925-13

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Iron	0.15		0.10	mg/L	1		200.7 Rev 4.4	Dissolved
Manganese	4.1		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.0017		0.00050	mg/L	1		200.8 LL	Dissolved
Cobalt	0.0010		0.00050	mg/L	1		200.8 LL	Dissolved
Dissolved Organic Carbon	2.3	H1	1.0	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	2.2	H1	1.0	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-M67-0520

Lab Sample ID: 550-141925-14

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5400	D2	400	mg/L	200		300.0	Total/NA
Fluoride	0.95	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	1500	D2	400	mg/L	200		300.0	Total/NA
Boron	0.36		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	1700		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	8.0		0.10	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.25		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	290		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	5.1		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	14		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	1500	B3 D1	5.0	mg/L	10		200.7 Rev 4.4	Total/NA
Arsenic	0.017	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Barium	0.028	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0045	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.0043		0.00050	mg/L	1		200.8 LL	Total/NA
Alkalinity as CaCO3	170		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	170		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	11000	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.1	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	10.4	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Ammonia	1.4		0.50	mg/L	1		SM 4500 NH3 D	Total/NA
Total Organic Carbon	2.3	N1	0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	2.4	N1	0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	2.3	N1	0.50	mg/L	1		SM 5310B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M67-0520

Lab Sample ID: 550-141925-15

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Iron	7.8		0.10	mg/L	1		200.7 Rev 4.4	Dissolved
Manganese	4.9		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.015		0.00050	mg/L	1		200.8 LL	Dissolved
Cobalt	0.0038		0.00050	mg/L	1		200.8 LL	Dissolved
Dissolved Organic Carbon	2.2	H1	1.0	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	2.2	H1	1.0	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-W123-0520

Lab Sample ID: 550-141925-16

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5700	D2	400	mg/L	200		300.0	Total/NA
Fluoride	4.8	D1	0.80	mg/L	2		300.0	Total/NA
Nitrate Nitrite as N	0.83	D1	0.50	mg/L	5		300.0	Total/NA
Sulfate	3400	D2	400	mg/L	200		300.0	Total/NA
Boron	37		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	780		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.16		0.10	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.83		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	270		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	48		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	3500	B3 D1	5.0	mg/L	10		200.7 Rev 4.4	Total/NA
Arsenic	0.0012	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Barium	0.011	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Chromium	0.076	D2	0.0020	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0030	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.30		0.00050	mg/L	1		200.8 LL	Total/NA
Selenium	0.0027	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Alkalinity as CaCO3	54		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	54		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	13000	D2	200	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	10.8	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	2.1	N1	0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	2.1	N1	0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	2.1	N1	0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-W123-0520

Lab Sample ID: 550-141925-17

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0015		0.00050	mg/L	1		200.8 LL	Dissolved
Cobalt	0.0023		0.00050	mg/L	1		200.8 LL	Dissolved
Dissolved Organic Carbon	1.9	V1	1.0	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	1.9	V1	1.0	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-W125-0520

Lab Sample ID: 550-141925-18

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	680	D2	400	mg/L	200		300.0	Total/NA
Sulfate	320	D1	4.0	mg/L	2		300.0	Total/NA
Calcium	130		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	51		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	4.3		0.50	mg/L	1		200.7 Rev 4.4	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-W125-0520 (Continued)

Lab Sample ID: 550-141925-18

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Sodium	450		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO ₃	160		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO ₃	160		6.0	mg/L	1		SM 2320B	Total/NA

Client Sample ID: CH-CCR-W126-0520

Lab Sample ID: 550-141925-19

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6900	D2	400	mg/L	200		300.0	Total/NA
Fluoride	4.1	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	4100	D2	400	mg/L	200		300.0	Total/NA
Boron	50		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	780		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	1.1		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	500		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.12		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	87		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	4200	D2	5.0	mg/L	10		200.7 Rev 4.4	Total/NA
Arsenic	0.0014	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Barium	0.011	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Chromium	0.0053	D2	0.0020	mg/L	2		200.8 LL	Total/NA
Cobalt	0.0038	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Molybdenum	0.22	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Selenium	0.0015	D1	0.0010	mg/L	2		200.8 LL	Total/NA
Alkalinity as CaCO ₃	95		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO ₃	95		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	16000	D2	200	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	11.4	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	2.3		0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	2.3		0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	2.3		0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-W126-0520

Lab Sample ID: 550-141925-20

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.10		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.0023		0.00050	mg/L	1		200.8 LL	Dissolved
Cobalt	0.0036		0.00050	mg/L	1		200.8 LL	Dissolved
Dissolved Organic Carbon	2.3	H1	1.0	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	2.3	H1	1.0	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-CCR-FD05-0520

Lab Sample ID: 550-141925-21

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4100	D2	400	mg/L	200		300.0	Total/NA
Sulfate	4100	D2	400	mg/L	200		300.0	Total/NA
Boron	1.3		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	510		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	5.5		0.10	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.47		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	220		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	2.3		0.010	mg/L	1		200.7 Rev 4.4	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-FD05-0520 (Continued)

Lab Sample ID: 550-141925-21

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Potassium	19		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	3800	B3 D1	5.0	mg/L	10		200.7 Rev 4.4	Total/NA
Barium	0.012		0.00050	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.0043		0.00050	mg/L	1		200.8 LL	Total/NA
Alkalinity as CaCO3	470		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	470		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	12000	D2	200	mg/L	1		SM 2540C	Total/NA
pH	7.6	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	12.1	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Ammonia	0.75		0.50	mg/L	1		SM 4500 NH3 D	Total/NA
Total Organic Carbon	5.5	N1	0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	5.5	N1	0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Quad	5.5	N1	0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-FD05-0520

Lab Sample ID: 550-141925-22

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Iron	4.8		0.10	mg/L	1		200.7 Rev 4.4	Dissolved
Manganese	1.9		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.00093		0.00050	mg/L	1		200.8 LL	Dissolved
Dissolved Organic Carbon	5.5	V1	1.0	mg/L	1		SM 5310B	Dissolved
Dissolved Organic Carbon - Duplicate	5.4	V1	1.0	mg/L	1		SM 5310B	Dissolved

Client Sample ID: CH-TANNERS-0520

Lab Sample ID: 550-141925-23

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2200	D2	400	mg/L	200		300.0	Total/NA
Fluoride	3.8	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	3100	D2	400	mg/L	200		300.0	Total/NA
Boron	4.0		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	680		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Iron	0.73		0.10	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.33		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	260		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	1.7		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	20		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	1600	D2	5.0	mg/L	10		200.7 Rev 4.4	Total/NA
Arsenic	0.0015		0.00050	mg/L	1		200.8 LL	Total/NA
Barium	0.058	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Cadmium	0.00033		0.00010	mg/L	1		200.8 LL	Total/NA
Chromium	0.0021	D2	0.0020	mg/L	2		200.8 LL	Total/NA
Cobalt	0.020	D2	0.0010	mg/L	2		200.8 LL	Total/NA
Lead	0.0070		0.00050	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.036		0.00050	mg/L	1		200.8 LL	Total/NA
Selenium	0.00054		0.00050	mg/L	1		200.8 LL	Total/NA
Alkalinity as CaCO3	76		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	76		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	8500	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	13.2	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA
Total Organic Carbon	1.0		0.50	mg/L	1		SM 5310B	Total/NA
Total Organic Carbon - Duplicates	1.0		0.50	mg/L	1		SM 5310B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-TANNERS-0520 (Continued)

Lab Sample ID: 550-141925-23

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon - Quad	1.0		0.50	mg/L	1		SM 5310B	Total/NA

Client Sample ID: CH-CCR-W309-0520

Lab Sample ID: 550-141925-24

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1500	D2	400	mg/L	200		300.0	Total/NA
Fluoride	1.2	D1	0.80	mg/L	2		300.0	Total/NA
Nitrate Nitrite as N	2.6	D1	0.50	mg/L	5		300.0	Total/NA
Sulfate	3200	D2	400	mg/L	200		300.0	Total/NA
Boron	0.46		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	440		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Lithium	0.50		0.20	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	86		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.83		0.010	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	8.9		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	1800	D2	5.0	mg/L	10		200.7 Rev 4.4	Total/NA
Arsenic	0.0047		0.00050	mg/L	1		200.8 LL	Total/NA
Barium	0.0070		0.00050	mg/L	1		200.8 LL	Total/NA
Chromium	0.0052		0.0010	mg/L	1		200.8 LL	Total/NA
Lead	0.023		0.00050	mg/L	1		200.8 LL	Total/NA
Molybdenum	0.010		0.00050	mg/L	1		200.8 LL	Total/NA
Selenium	0.20		0.00050	mg/L	1		200.8 LL	Total/NA
Alkalinity as CaCO3	160		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	160		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	7200	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	13.9	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: CH-CCR-W309-0520

Lab Sample ID: 550-141925-25

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.83		0.010	mg/L	1		200.7 Rev 4.4	Dissolved
Arsenic	0.0038		0.00050	mg/L	1		200.8 LL	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M44D-0520

Lab Sample ID: 550-141925-1

Date Collected: 05/07/20 09:35

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	970	D2	400	mg/L			05/12/20 00:26	200
Fluoride	0.81	D1	0.80	mg/L			05/11/20 23:59	2
Sulfate	310	D1	4.0	mg/L			05/11/20 23:59	2

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	89		2.0	mg/L		05/11/20 05:12	05/19/20 00:19	1
Magnesium	49		2.0	mg/L		05/11/20 05:12	05/19/20 00:19	1
Potassium	4.8		0.50	mg/L		05/11/20 05:12	05/19/20 00:19	1
Sodium	630		0.50	mg/L		05/11/20 05:12	05/28/20 03:16	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	100		6.0	mg/L			05/09/20 21:02	1
Bicarbonate Alkalinity as CaCO3	100		6.0	mg/L			05/09/20 21:02	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 21:02	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			05/09/20 21:02	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 21:02	1

Client Sample ID: CH-CCR-M46-0520

Lab Sample ID: 550-141925-2

Date Collected: 05/05/20 10:01

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7100	D2 M1	400	mg/L			05/11/20 19:52	200
Fluoride	ND	D1 D5 M2 R13	0.80	mg/L			05/11/20 18:57	2
Nitrate Nitrite as N	ND	D1 D5 M2 R13	0.50	mg/L			05/12/20 17:04	5
Sulfate	7800	D2 M1 R13	400	mg/L			05/11/20 19:52	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		05/11/20 05:12	05/19/20 00:03	1
Boron	0.64		0.050	mg/L		05/11/20 05:12	05/19/20 00:03	1
Calcium	1300		2.0	mg/L		05/11/20 05:12	05/19/20 00:03	1
Iron	1.0		0.10	mg/L		05/11/20 05:12	05/19/20 00:03	1
Lithium	0.35		0.20	mg/L		05/11/20 05:12	05/21/20 18:36	1
Magnesium	240		2.0	mg/L		05/11/20 05:12	05/19/20 00:03	1
Manganese	3.8		0.010	mg/L		05/11/20 05:12	05/19/20 00:03	1
Potassium	21		0.50	mg/L		05/11/20 05:12	05/19/20 00:03	1
Sodium	2700	D2	5.0	mg/L		05/11/20 05:12	05/28/20 03:12	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0013		0.00050	mg/L		05/11/20 08:57	05/21/20 21:42	1
Barium	0.031	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:30	2
Cadmium	ND		0.00010	mg/L		05/11/20 08:57	05/11/20 20:37	1
Chromium	0.0011		0.0010	mg/L		05/11/20 08:57	05/21/20 21:42	1
Cobalt	0.00081		0.00050	mg/L		05/11/20 08:57	05/21/20 21:42	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M46-0520

Lab Sample ID: 550-141925-2

Date Collected: 05/05/20 10:01

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.00050	mg/L		05/11/20 08:57	05/11/20 20:37	1
Molybdenum	0.0068		0.00050	mg/L		05/11/20 08:57	05/11/20 20:37	1
Selenium	ND	D1	0.0010	mg/L		05/22/20 05:16	05/28/20 23:06	2

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	200		6.0	mg/L			05/09/20 20:45	1
Bicarbonate Alkalinity as CaCO3	200		6.0	mg/L			05/09/20 20:45	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 20:45	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			05/09/20 20:45	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 20:45	1
Total Dissolved Solids	13000	D2	200	mg/L			05/11/20 11:20	1
pH	7.4	H5	1.7	SU			05/21/20 16:30	1
Temperature	7.8	H5	0.1	Degrees C			05/21/20 16:30	1
Ammonia	0.82		0.50	mg/L			05/19/20 00:44	1
Total Organic Carbon	3.2	M1 R13	0.50	mg/L			06/01/20 15:16	1
Total Organic Carbon - Duplicates	3.2	M1 R4	0.50	mg/L			06/01/20 15:16	1
Total Organic Carbon - Quad	3.2	M1 R4	0.50	mg/L			06/01/20 15:16	1

Client Sample ID: CH-CCR-M46-0520

Lab Sample ID: 550-141925-3

Date Collected: 05/05/20 10:01

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.68		0.10	mg/L		05/11/20 05:21	05/22/20 23:51	1
Manganese	3.6	M2	0.010	mg/L		05/11/20 05:21	05/22/20 23:51	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0011		0.00050	mg/L		05/11/20 08:45	05/22/20 18:48	1
Cobalt	0.00079		0.00050	mg/L		05/11/20 08:45	05/22/20 18:48	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	3.8	H1 V1	1.0	mg/L			06/03/20 09:37	1
Dissolved Organic Carbon - Duplicate	3.8	H1 V1	1.0	mg/L			06/03/20 09:37	1

Client Sample ID: CH-CCR-M50A-0520

Lab Sample ID: 550-141925-4

Date Collected: 05/06/20 13:46

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1900	D2	400	mg/L			05/12/20 01:21	200
Fluoride	2.3	D1	0.80	mg/L			05/12/20 00:53	2
Nitrate Nitrite as N	ND	D1 D5	0.50	mg/L			05/12/20 18:54	5
Sulfate	3000	D2	400	mg/L			05/12/20 01:21	200

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M50A-0520

Lab Sample ID: 550-141925-4

Date Collected: 05/06/20 13:46

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		05/11/20 05:12	05/19/20 00:23	1
Boron	3.0		0.050	mg/L		05/11/20 05:12	05/19/20 00:23	1
Calcium	600		2.0	mg/L		05/11/20 05:12	05/19/20 00:23	1
Iron	ND		0.10	mg/L		05/11/20 05:12	05/19/20 00:23	1
Lithium	0.55		0.20	mg/L		05/11/20 05:12	05/21/20 18:44	1
Magnesium	200		2.0	mg/L		05/11/20 05:12	05/19/20 00:23	1
Manganese	0.25		0.010	mg/L		05/11/20 05:12	05/19/20 00:23	1
Potassium	9.8		0.50	mg/L		05/11/20 05:12	05/19/20 00:23	1
Sodium	1600	D2	5.0	mg/L		05/11/20 05:12	05/28/20 03:25	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0027		0.00050	mg/L		05/11/20 08:57	05/11/20 20:35	1
Barium	0.0093	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:32	2
Cadmium	ND		0.00010	mg/L		05/11/20 08:57	05/11/20 20:35	1
Chromium	0.0024		0.0010	mg/L		05/11/20 08:57	05/21/20 21:40	1
Cobalt	0.00066		0.00050	mg/L		05/11/20 08:57	05/21/20 21:40	1
Lead	ND		0.00050	mg/L		05/11/20 08:57	05/11/20 20:35	1
Molybdenum	0.0065		0.00050	mg/L		05/11/20 08:57	05/11/20 20:35	1
Selenium	0.0018		0.00050	mg/L		05/11/20 08:57	05/11/20 20:35	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	160		6.0	mg/L			05/09/20 21:10	1
Bicarbonate Alkalinity as CaCO3	160		6.0	mg/L			05/09/20 21:10	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 21:10	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			05/09/20 21:10	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 21:10	1
Total Dissolved Solids	7700	D2	100	mg/L			05/11/20 11:20	1
pH	7.5	H5	1.7	SU			05/21/20 16:30	1
Temperature	7.9	H5	0.1	Degrees C			05/21/20 16:30	1
Ammonia	ND		0.50	mg/L			05/11/20 22:07	1
Total Organic Carbon	2.9	N1	0.50	mg/L			05/11/20 19:17	1
Total Organic Carbon - Duplicates	3.0	N1	0.50	mg/L			05/11/20 19:17	1
Total Organic Carbon - Quad	2.9	N1	0.50	mg/L			05/11/20 19:17	1

Client Sample ID: CH-CCR-M50A-0520

Lab Sample ID: 550-141925-5

Date Collected: 05/06/20 13:46

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10	mg/L		05/11/20 05:21	05/22/20 23:55	1
Manganese	0.23		0.010	mg/L		05/11/20 05:21	05/22/20 23:55	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0024		0.00050	mg/L		05/11/20 08:45	05/11/20 19:59	1
Cobalt	ND		0.00050	mg/L		05/11/20 08:45	05/11/20 19:59	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M50A-0520

Lab Sample ID: 550-141925-5

Date Collected: 05/06/20 13:46

Matrix: Water

Date Received: 05/08/20 12:35

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	2.9	M1 V1	1.0	mg/L			06/03/20 08:44	1
Dissolved Organic Carbon - Duplicate	2.9	M1 V1	1.0	mg/L			06/03/20 08:44	1

Client Sample ID: CH-CCR-M51A-0520

Lab Sample ID: 550-141925-6

Date Collected: 05/06/20 15:15

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5300	D2	400	mg/L			05/12/20 02:16	200
Fluoride	5.6	D1	0.80	mg/L			05/12/20 01:48	2
Nitrate Nitrite as N	ND	D1 D5	0.50	mg/L			05/12/20 19:21	5
Sulfate	2900	D2	400	mg/L			05/12/20 02:16	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		05/11/20 05:12	05/19/20 00:27	1
Boron	32		0.050	mg/L		05/11/20 05:12	05/19/20 00:27	1
Calcium	860		2.0	mg/L		05/11/20 05:12	05/19/20 00:27	1
Iron	ND		0.10	mg/L		05/11/20 05:12	05/19/20 00:27	1
Lithium	0.65		0.20	mg/L		05/11/20 05:12	05/21/20 18:48	1
Magnesium	280		2.0	mg/L		05/11/20 05:12	05/19/20 00:27	1
Manganese	0.89		0.010	mg/L		05/11/20 05:12	05/19/20 00:27	1
Potassium	35		0.50	mg/L		05/11/20 05:12	05/19/20 00:27	1
Sodium	3000	D2	5.0	mg/L		05/11/20 05:12	05/28/20 03:29	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.015		0.00050	mg/L		05/11/20 08:57	05/11/20 20:39	1
Barium	0.0091	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:34	2
Cadmium	ND		0.00010	mg/L		05/11/20 08:57	05/11/20 20:39	1
Chromium	0.0026	D1	0.0020	mg/L		05/11/20 08:57	05/21/20 21:50	2
Cobalt	0.0013	D1	0.0010	mg/L		05/11/20 08:57	05/21/20 21:50	2
Lead	ND		0.00050	mg/L		05/11/20 08:57	05/11/20 20:39	1
Molybdenum	0.090		0.00050	mg/L		05/11/20 08:57	05/11/20 20:39	1
Selenium	ND		0.00050	mg/L		05/11/20 08:57	05/11/20 20:39	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	83		6.0	mg/L			05/09/20 21:19	1
Bicarbonate Alkalinity as CaCO3	83		6.0	mg/L			05/09/20 21:19	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 21:19	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			05/09/20 21:19	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 21:19	1
Total Dissolved Solids	12000	D2	200	mg/L			05/11/20 11:20	1
pH	7.2	H5	1.7	SU			05/21/20 16:30	1
Temperature	8.4	H5	0.1	Degrees C			05/21/20 16:30	1
Ammonia	ND		0.50	mg/L			05/11/20 22:16	1
Total Organic Carbon	1.7	N1	0.50	mg/L			05/11/20 19:35	1
Total Organic Carbon - Duplicates	1.7	N1	0.50	mg/L			05/11/20 19:35	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M51A-0520

Date Collected: 05/06/20 15:15

Date Received: 05/08/20 12:35

Lab Sample ID: 550-141925-6

Matrix: Water

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	1.7	N1	0.50	mg/L			05/11/20 19:35	1

Client Sample ID: CH-CCR-M51A-0520

Date Collected: 05/06/20 15:15

Date Received: 05/08/20 12:35

Lab Sample ID: 550-141925-7

Matrix: Water

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10	mg/L		05/11/20 05:21	05/22/20 23:59	1
Manganese	0.84		0.010	mg/L		05/11/20 05:21	05/22/20 23:59	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.015		0.00050	mg/L		05/11/20 08:45	05/11/20 20:03	1
Cobalt	0.00078		0.00050	mg/L		05/11/20 08:45	05/11/20 20:03	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.8	V1	1.0	mg/L			06/03/20 09:52	1
Dissolved Organic Carbon - Duplicate	1.7	V1	1.0	mg/L			06/03/20 09:52	1

Client Sample ID: CH-CCR-M64-0520

Date Collected: 05/06/20 08:13

Date Received: 05/08/20 12:35

Lab Sample ID: 550-141925-8

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3900	D2	400	mg/L			05/12/20 04:05	200
Fluoride	ND	D1 D5	0.80	mg/L			05/12/20 03:38	2
Nitrate Nitrite as N	ND	D1 D5	0.50	mg/L			05/12/20 19:49	5
Sulfate	3900	D2	400	mg/L			05/12/20 04:05	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		05/11/20 05:12	05/19/20 00:31	1
Boron	1.2		0.050	mg/L		05/11/20 05:12	05/19/20 00:31	1
Calcium	520		2.0	mg/L		05/11/20 05:12	05/19/20 00:31	1
Iron	5.5		0.10	mg/L		05/11/20 05:12	05/19/20 00:31	1
Lithium	0.47		0.20	mg/L		05/11/20 05:12	05/21/20 18:52	1
Magnesium	230		2.0	mg/L		05/11/20 05:12	05/19/20 00:31	1
Manganese	2.2		0.010	mg/L		05/11/20 05:12	05/19/20 00:31	1
Potassium	20		0.50	mg/L		05/11/20 05:12	05/19/20 00:31	1
Sodium	3400	D2	5.0	mg/L		05/11/20 05:12	05/28/20 03:33	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00086		0.00050	mg/L		05/11/20 08:57	05/21/20 21:46	1
Barium	0.013	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:36	2
Cadmium	ND		0.00010	mg/L		05/11/20 08:57	05/11/20 20:41	1
Chromium	ND		0.0010	mg/L		05/11/20 08:57	05/21/20 21:46	1
Cobalt	ND		0.00050	mg/L		05/11/20 08:57	05/21/20 21:46	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M64-0520

Lab Sample ID: 550-141925-8

Date Collected: 05/06/20 08:13

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.00050	mg/L		05/11/20 08:57	05/11/20 20:41	1
Molybdenum	0.0042		0.00050	mg/L		05/11/20 08:57	05/11/20 20:41	1
Selenium	ND	D1	0.0010	mg/L		05/22/20 05:16	05/29/20 14:56	2

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	490		6.0	mg/L			05/09/20 21:30	1
Bicarbonate Alkalinity as CaCO3	490		6.0	mg/L			05/09/20 21:30	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 21:30	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			05/09/20 21:30	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 21:30	1
Total Dissolved Solids	12000	D2	200	mg/L			05/11/20 11:20	1
pH	7.3	H5	1.7	SU			05/21/20 16:30	1
Temperature	8.5	H5	0.1	Degrees C			05/21/20 16:30	1
Ammonia	0.73		0.50	mg/L			05/11/20 22:25	1
Total Organic Carbon	5.1	N1	0.50	mg/L			05/11/20 19:53	1
Total Organic Carbon - Duplicates	5.1	N1	0.50	mg/L			05/11/20 19:53	1
Total Organic Carbon - Quad	5.1	N1	0.50	mg/L			05/11/20 19:53	1

Client Sample ID: CH-CCR-M64-0520

Lab Sample ID: 550-141925-9

Date Collected: 05/06/20 08:13

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	5.0		0.10	mg/L		05/11/20 05:21	05/23/20 00:03	1
Manganese	1.9		0.010	mg/L		05/11/20 05:21	05/23/20 00:03	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00050		0.00050	mg/L		05/11/20 08:45	05/22/20 18:46	1
Cobalt	ND		0.00050	mg/L		05/11/20 08:45	05/22/20 18:46	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	5.0	V1	1.0	mg/L			06/03/20 10:11	1
Dissolved Organic Carbon - Duplicate	5.0	V1	1.0	mg/L			06/03/20 10:11	1

Client Sample ID: CH-CCR-M65-0520

Lab Sample ID: 550-141925-10

Date Collected: 05/05/20 08:16

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3600	D2	400	mg/L			05/11/20 21:05	200
Fluoride	1.8	D1	0.80	mg/L			05/11/20 20:47	2
Nitrate Nitrite as N	ND	D1 D5	0.50	mg/L			05/12/20 20:44	5
Sulfate	2900	D2	400	mg/L			05/11/20 21:05	200

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M65-0520

Lab Sample ID: 550-141925-10

Date Collected: 05/05/20 08:16

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		05/11/20 05:12	05/19/20 00:47	1
Boron	11		0.050	mg/L		05/11/20 05:12	05/19/20 00:47	1
Calcium	750		2.0	mg/L		05/11/20 05:12	05/19/20 00:47	1
Iron	ND		0.10	mg/L		05/11/20 05:12	05/19/20 00:47	1
Lithium	0.67		0.20	mg/L		05/11/20 05:12	05/21/20 19:00	1
Magnesium	270		2.0	mg/L		05/11/20 05:12	05/19/20 00:47	1
Manganese	0.31		0.010	mg/L		05/11/20 05:12	05/19/20 00:47	1
Potassium	30		0.50	mg/L		05/11/20 05:12	05/19/20 00:47	1
Sodium	1900	B3 D1	5.0	mg/L		05/11/20 05:12	05/26/20 18:58	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0016	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:39	2
Barium	0.015	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:39	2
Cadmium	0.00010		0.00010	mg/L		05/11/20 08:57	05/11/20 20:43	1
Chromium	0.0052	D2	0.0020	mg/L		05/22/20 05:16	05/28/20 00:39	2
Cobalt	0.0033	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:39	2
Lead	ND		0.00050	mg/L		05/11/20 08:57	05/11/20 20:43	1
Molybdenum	0.065		0.00050	mg/L		05/11/20 08:57	05/11/20 20:43	1
Selenium	0.0017	D1	0.0010	mg/L		05/22/20 05:16	05/29/20 14:58	2

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	150		6.0	mg/L			05/09/20 21:38	1
Bicarbonate Alkalinity as CaCO3	150		6.0	mg/L			05/09/20 21:38	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 21:38	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			05/09/20 21:38	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 21:38	1
Total Dissolved Solids	9400	D2	100	mg/L			05/11/20 11:20	1
pH	7.4	H5	1.7	SU			05/21/20 16:30	1
Temperature	8.4	H5	0.1	Degrees C			05/21/20 16:30	1
Ammonia	ND		0.50	mg/L			05/11/20 22:32	1
Total Organic Carbon	2.1		0.50	mg/L			06/01/20 15:52	1
Total Organic Carbon - Duplicates	2.1		0.50	mg/L			06/01/20 15:52	1
Total Organic Carbon - Quad	2.1		0.50	mg/L			06/01/20 15:52	1

Client Sample ID: CH-CCR-M65-0520

Lab Sample ID: 550-141925-11

Date Collected: 05/05/20 08:16

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10	mg/L		05/11/20 05:21	05/23/20 00:07	1
Manganese	0.29		0.010	mg/L		05/11/20 05:21	05/23/20 00:07	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0017		0.00050	mg/L		05/11/20 08:45	05/11/20 20:08	1
Cobalt	0.0026		0.00050	mg/L		05/11/20 08:45	05/11/20 20:08	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M65-0520

Lab Sample ID: 550-141925-11

Date Collected: 05/05/20 08:16

Matrix: Water

Date Received: 05/08/20 12:35

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	2.4	H1	1.0	mg/L			06/04/20 18:53	1
Dissolved Organic Carbon - Duplicate	2.4	H1	1.0	mg/L			06/04/20 18:53	1

Client Sample ID: CH-CCR-M66-0520

Lab Sample ID: 550-141925-12

Date Collected: 05/05/20 12:46

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4600	D2	400	mg/L			05/11/20 21:42	200
Fluoride	1.1	D1	0.80	mg/L			05/11/20 21:24	2
Nitrate Nitrite as N	ND	D1 D5	0.50	mg/L			05/12/20 21:11	5
Sulfate	3100	D2	400	mg/L			05/11/20 21:42	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		05/11/20 05:12	05/19/20 00:35	1
Boron	1.6		0.050	mg/L		05/11/20 05:12	05/19/20 00:35	1
Calcium	800		2.0	mg/L		05/11/20 05:12	05/19/20 00:35	1
Iron	0.23		0.10	mg/L		05/11/20 05:12	05/19/20 00:35	1
Lithium	0.68		0.20	mg/L		05/11/20 05:12	05/21/20 18:56	1
Magnesium	280		2.0	mg/L		05/11/20 05:12	05/19/20 00:35	1
Manganese	4.3		0.010	mg/L		05/11/20 05:12	05/19/20 00:35	1
Potassium	14		0.50	mg/L		05/11/20 05:12	05/19/20 00:35	1
Sodium	2400	B3 D1	5.0	mg/L		05/11/20 05:12	05/26/20 18:54	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0017	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:41	2
Barium	0.015	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:41	2
Cadmium	0.00027		0.00010	mg/L		05/11/20 08:57	05/11/20 20:45	1
Chromium	0.016	D2	0.0020	mg/L		05/22/20 05:16	05/28/20 00:41	2
Cobalt	0.0014	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:41	2
Lead	ND		0.00050	mg/L		05/11/20 08:57	05/11/20 20:45	1
Molybdenum	0.014		0.00050	mg/L		05/11/20 08:57	05/11/20 20:45	1
Selenium	0.027	D1	0.0010	mg/L		05/22/20 05:16	05/29/20 15:00	2

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	150		6.0	mg/L			05/09/20 21:47	1
Bicarbonate Alkalinity as CaCO3	150		6.0	mg/L			05/09/20 21:47	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 21:47	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			05/09/20 21:47	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 21:47	1
Total Dissolved Solids	11000	D2	100	mg/L			05/11/20 11:20	1
pH	7.3	H5	1.7	SU			05/21/20 16:30	1
Temperature	10.7	H5	0.1	Degrees C			05/21/20 16:30	1
Ammonia	ND		0.50	mg/L			05/11/20 22:38	1
Total Organic Carbon	2.7	N1	0.50	mg/L			05/11/20 20:21	1
Total Organic Carbon - Duplicates	2.7	N1	0.50	mg/L			05/11/20 20:21	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M66-0520

Lab Sample ID: 550-141925-12

Date Collected: 05/05/20 12:46

Matrix: Water

Date Received: 05/08/20 12:35

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Quad	2.7	N1	0.50	mg/L			05/11/20 20:21	1

Client Sample ID: CH-CCR-M66-0520

Lab Sample ID: 550-141925-13

Date Collected: 05/05/20 12:46

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.15		0.10	mg/L		05/11/20 05:21	05/23/20 00:11	1
Manganese	4.1		0.010	mg/L		05/11/20 05:21	05/23/20 00:11	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0017		0.00050	mg/L		05/11/20 08:45	05/11/20 20:10	1
Cobalt	0.0010		0.00050	mg/L		05/11/20 08:45	05/11/20 20:10	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	2.3	H1	1.0	mg/L			06/04/20 19:07	1
Dissolved Organic Carbon - Duplicate	2.2	H1	1.0	mg/L			06/04/20 19:07	1

Client Sample ID: CH-CCR-M67-0520

Lab Sample ID: 550-141925-14

Date Collected: 05/05/20 11:22

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5400	D2	400	mg/L			05/18/20 20:59	200
Fluoride	0.95	D1	0.80	mg/L			05/14/20 23:39	2
Nitrate Nitrite as N	ND	D1 D5	0.50	mg/L			05/12/20 22:33	5
Sulfate	1500	D2	400	mg/L			05/18/20 20:59	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		05/11/20 05:12	05/19/20 00:51	1
Boron	0.36		0.050	mg/L		05/11/20 05:12	05/19/20 00:51	1
Calcium	1700		2.0	mg/L		05/11/20 05:12	05/19/20 00:51	1
Iron	8.0		0.10	mg/L		05/11/20 05:12	05/19/20 00:51	1
Lithium	0.25		0.20	mg/L		05/11/20 05:12	05/21/20 19:12	1
Magnesium	290		2.0	mg/L		05/11/20 05:12	05/19/20 00:51	1
Manganese	5.1		0.010	mg/L		05/11/20 05:12	05/19/20 00:51	1
Potassium	14		0.50	mg/L		05/11/20 05:12	05/19/20 00:51	1
Sodium	1500	B3 D1	5.0	mg/L		05/11/20 05:12	05/26/20 19:02	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.017	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:43	2
Barium	0.028	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:43	2
Cadmium	ND		0.00010	mg/L		05/11/20 08:57	05/11/20 20:47	1
Chromium	ND	D2	0.0020	mg/L		05/22/20 05:16	05/28/20 00:43	2
Cobalt	0.0045	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:43	2

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M67-0520

Lab Sample ID: 550-141925-14

Date Collected: 05/05/20 11:22

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.00050	mg/L		05/11/20 08:57	05/11/20 20:47	1
Molybdenum	0.0043		0.00050	mg/L		05/11/20 08:57	05/11/20 20:47	1
Selenium	ND	D1	0.0010	mg/L		05/22/20 05:16	05/29/20 15:02	2

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	170		6.0	mg/L			05/09/20 21:55	1
Bicarbonate Alkalinity as CaCO3	170		6.0	mg/L			05/09/20 21:55	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 21:55	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			05/09/20 21:55	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 21:55	1
Total Dissolved Solids	11000	D2	100	mg/L			05/11/20 11:20	1
pH	7.1	H5	1.7	SU			05/21/20 16:30	1
Temperature	10.4	H5	0.1	Degrees C			05/21/20 16:30	1
Ammonia	1.4		0.50	mg/L			05/11/20 22:47	1
Total Organic Carbon	2.3	N1	0.50	mg/L			05/11/20 20:36	1
Total Organic Carbon - Duplicates	2.4	N1	0.50	mg/L			05/11/20 20:36	1
Total Organic Carbon - Quad	2.3	N1	0.50	mg/L			05/11/20 20:36	1

Client Sample ID: CH-CCR-M67-0520

Lab Sample ID: 550-141925-15

Date Collected: 05/05/20 11:22

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	7.8		0.10	mg/L		05/11/20 05:21	05/23/20 00:15	1
Manganese	4.9		0.010	mg/L		05/11/20 05:21	05/23/20 00:15	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.015		0.00050	mg/L		05/11/20 08:45	05/22/20 18:50	1
Cobalt	0.0038		0.00050	mg/L		05/11/20 08:45	05/22/20 18:50	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	2.2	H1	1.0	mg/L			06/04/20 19:24	1
Dissolved Organic Carbon - Duplicate	2.2	H1	1.0	mg/L			06/04/20 19:24	1

Client Sample ID: CH-CCR-W123-0520

Lab Sample ID: 550-141925-16

Date Collected: 05/06/20 11:14

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5700	D2	400	mg/L			05/15/20 03:45	200
Fluoride	4.8	D1	0.80	mg/L			05/15/20 03:18	2
Nitrate Nitrite as N	0.83	D1	0.50	mg/L			05/12/20 23:28	5
Sulfate	3400	D2	400	mg/L			05/15/20 03:45	200

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-W123-0520

Lab Sample ID: 550-141925-16

Date Collected: 05/06/20 11:14

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		05/11/20 05:12	05/19/20 00:55	1
Boron	37		0.050	mg/L		05/11/20 05:12	05/19/20 00:55	1
Calcium	780		2.0	mg/L		05/11/20 05:12	05/19/20 00:55	1
Iron	0.16		0.10	mg/L		05/11/20 05:12	05/19/20 00:55	1
Lithium	0.83		0.20	mg/L		05/11/20 05:12	05/21/20 19:16	1
Magnesium	270		2.0	mg/L		05/11/20 05:12	05/19/20 00:55	1
Manganese	ND		0.010	mg/L		05/11/20 05:12	05/19/20 00:55	1
Potassium	48		0.50	mg/L		05/11/20 05:12	05/19/20 00:55	1
Sodium	3500	B3 D1	5.0	mg/L		05/11/20 05:12	05/26/20 19:06	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0012	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:45	2
Barium	0.011	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:45	2
Cadmium	ND		0.00010	mg/L		05/11/20 08:57	05/11/20 20:49	1
Chromium	0.076	D2	0.0020	mg/L		05/22/20 05:16	05/28/20 00:45	2
Cobalt	0.0030	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:45	2
Lead	ND		0.00050	mg/L		05/11/20 08:57	05/11/20 20:49	1
Molybdenum	0.30		0.00050	mg/L		05/11/20 08:57	05/11/20 20:49	1
Selenium	0.0027	D1	0.0010	mg/L		05/22/20 05:16	05/29/20 15:04	2

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	54		6.0	mg/L			05/09/20 22:04	1
Bicarbonate Alkalinity as CaCO3	54		6.0	mg/L			05/09/20 22:04	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 22:04	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			05/09/20 22:04	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 22:04	1
Total Dissolved Solids	13000	D2	200	mg/L			05/11/20 11:20	1
pH	7.5	H5	1.7	SU			05/21/20 16:30	1
Temperature	10.8	H5	0.1	Degrees C			05/21/20 16:30	1
Ammonia	ND		0.50	mg/L			05/11/20 22:54	1
Total Organic Carbon	2.1	N1	0.50	mg/L			05/11/20 20:57	1
Total Organic Carbon - Duplicates	2.1	N1	0.50	mg/L			05/11/20 20:57	1
Total Organic Carbon - Quad	2.1	N1	0.50	mg/L			05/11/20 20:57	1

Client Sample ID: CH-CCR-W123-0520

Lab Sample ID: 550-141925-17

Date Collected: 05/06/20 11:14

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10	mg/L		05/11/20 05:21	05/23/20 00:19	1
Manganese	ND		0.010	mg/L		05/11/20 05:21	05/23/20 00:19	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0015		0.00050	mg/L		05/11/20 08:45	05/22/20 18:52	1
Cobalt	0.0023		0.00050	mg/L		05/11/20 08:45	05/22/20 18:52	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-W123-0520

Lab Sample ID: 550-141925-17

Date Collected: 05/06/20 11:14

Matrix: Water

Date Received: 05/08/20 12:35

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.9	V1	1.0	mg/L			06/03/20 11:18	1
Dissolved Organic Carbon - Duplicate	1.9	V1	1.0	mg/L			06/03/20 11:18	1

Client Sample ID: CH-CCR-W125-0520

Lab Sample ID: 550-141925-18

Date Collected: 05/06/20 12:45

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	680	D2	400	mg/L			05/15/20 04:40	200
Fluoride	ND	D1 D5	0.80	mg/L			05/15/20 04:13	2
Sulfate	320	D1	4.0	mg/L			05/15/20 04:13	2

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	130		2.0	mg/L		05/11/20 05:12	05/19/20 00:59	1
Magnesium	51		2.0	mg/L		05/11/20 05:12	05/19/20 00:59	1
Potassium	4.3		0.50	mg/L		05/11/20 05:12	05/19/20 00:59	1
Sodium	450		0.50	mg/L		05/11/20 05:12	05/28/20 03:20	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	160		6.0	mg/L			05/09/20 22:13	1
Bicarbonate Alkalinity as CaCO3	160		6.0	mg/L			05/09/20 22:13	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 22:13	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			05/09/20 22:13	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 22:13	1

Client Sample ID: CH-CCR-W126-0520

Lab Sample ID: 550-141925-19

Date Collected: 05/05/20 14:09

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6900	D2	400	mg/L			05/15/20 05:35	200
Fluoride	4.1	D1	0.80	mg/L			05/15/20 05:07	2
Nitrate Nitrite as N	ND	D1 D5	0.50	mg/L			05/12/20 23:55	5
Sulfate	4100	D2	400	mg/L			05/15/20 05:35	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		05/11/20 05:12	05/19/20 01:03	1
Boron	50		0.050	mg/L		05/11/20 05:12	05/19/20 01:03	1
Calcium	780		2.0	mg/L		05/11/20 05:12	05/19/20 01:03	1
Iron	ND		0.10	mg/L		05/11/20 05:12	05/19/20 01:03	1
Lithium	1.1		0.20	mg/L		05/11/20 05:12	05/21/20 19:24	1
Magnesium	500		2.0	mg/L		05/11/20 05:12	05/19/20 01:03	1
Manganese	0.12		0.010	mg/L		05/11/20 05:12	05/19/20 01:03	1
Potassium	87		0.50	mg/L		05/11/20 05:12	05/19/20 01:03	1
Sodium	4200	D2	5.0	mg/L		05/11/20 05:12	05/28/20 03:37	10

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-W126-0520

Lab Sample ID: 550-141925-19

Date Collected: 05/05/20 14:09

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0014	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:47	2
Barium	0.011	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:47	2
Cadmium	ND	D2	0.00020	mg/L		05/22/20 05:16	05/28/20 00:47	2
Chromium	0.0053	D2	0.0020	mg/L		05/22/20 05:16	05/28/20 00:47	2
Cobalt	0.0038	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:47	2
Lead	ND		0.00050	mg/L		05/11/20 08:57	05/11/20 20:55	1
Molybdenum	0.22	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:47	2
Selenium	0.0015	D1	0.0010	mg/L		05/22/20 05:16	05/29/20 15:06	2

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	95		6.0	mg/L			05/09/20 22:38	1
Bicarbonate Alkalinity as CaCO3	95		6.0	mg/L			05/09/20 22:38	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 22:38	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			05/09/20 22:38	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 22:38	1
Total Dissolved Solids	16000	D2	200	mg/L			05/11/20 11:20	1
pH	7.5	H5	1.7	SU			05/21/20 16:30	1
Temperature	11.4	H5	0.1	Degrees C			05/21/20 16:30	1
Ammonia	ND		0.50	mg/L			05/11/20 23:03	1
Total Organic Carbon	2.3		0.50	mg/L			06/01/20 16:03	1
Total Organic Carbon - Duplicates	2.3		0.50	mg/L			06/01/20 16:03	1
Total Organic Carbon - Quad	2.3		0.50	mg/L			06/01/20 16:03	1

Client Sample ID: CH-CCR-W126-0520

Lab Sample ID: 550-141925-20

Date Collected: 05/05/20 14:09

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10	mg/L		05/11/20 05:21	05/23/20 00:23	1
Manganese	0.10		0.010	mg/L		05/11/20 05:21	05/23/20 00:23	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0023		0.00050	mg/L		05/11/20 08:45	05/22/20 18:54	1
Cobalt	0.0036		0.00050	mg/L		05/11/20 08:45	05/22/20 18:54	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	2.3	H1	1.0	mg/L			06/04/20 20:26	1
Dissolved Organic Carbon - Duplicate	2.3	H1	1.0	mg/L			06/04/20 20:26	1

Client Sample ID: CH-CCR-FD05-0520

Lab Sample ID: 550-141925-21

Date Collected: 05/06/20 08:13

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4100	D2	400	mg/L			05/15/20 06:30	200

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-FD05-0520

Lab Sample ID: 550-141925-21

Date Collected: 05/06/20 08:13

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND	D1 D5	0.80	mg/L			05/15/20 06:02	2
Nitrate Nitrite as N	ND	D1 D5	0.50	mg/L			05/13/20 00:23	5
Sulfate	4100	D2	400	mg/L			05/15/20 06:30	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		05/11/20 05:12	05/19/20 01:07	1
Boron	1.3		0.050	mg/L		05/11/20 05:12	05/19/20 01:07	1
Calcium	510		2.0	mg/L		05/11/20 05:12	05/19/20 01:07	1
Iron	5.5		0.10	mg/L		05/11/20 05:12	05/19/20 01:07	1
Lithium	0.47		0.20	mg/L		05/11/20 05:12	05/21/20 19:28	1
Magnesium	220		2.0	mg/L		05/11/20 05:12	05/19/20 01:07	1
Manganese	2.3		0.010	mg/L		05/11/20 05:12	05/19/20 01:07	1
Potassium	19		0.50	mg/L		05/11/20 05:12	05/19/20 01:07	1
Sodium	3800	B3 D1	5.0	mg/L		05/11/20 05:12	05/26/20 19:14	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:24	2
Barium	0.012		0.00050	mg/L		05/22/20 05:16	05/22/20 19:13	1
Cadmium	ND		0.00010	mg/L		05/11/20 08:57	05/11/20 20:57	1
Chromium	ND	D2	0.0020	mg/L		05/22/20 05:16	05/28/20 00:24	2
Cobalt	ND	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:24	2
Lead	ND		0.00050	mg/L		05/11/20 08:57	05/11/20 20:57	1
Molybdenum	0.0043		0.00050	mg/L		05/11/20 08:57	05/11/20 20:57	1
Selenium	ND	D1	0.0010	mg/L		05/22/20 05:16	05/28/20 23:00	2

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	470		6.0	mg/L			05/09/20 22:57	1
Bicarbonate Alkalinity as CaCO3	470		6.0	mg/L			05/09/20 22:57	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 22:57	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			05/09/20 22:57	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 22:57	1
Total Dissolved Solids	12000	D2	200	mg/L			05/11/20 11:20	1
pH	7.6	H5	1.7	SU			05/21/20 16:30	1
Temperature	12.1	H5	0.1	Degrees C			05/21/20 16:30	1
Ammonia	0.75		0.50	mg/L			05/11/20 23:12	1
Total Organic Carbon	5.5	N1	0.50	mg/L			05/11/20 21:31	1
Total Organic Carbon - Duplicates	5.5	N1	0.50	mg/L			05/11/20 21:31	1
Total Organic Carbon - Quad	5.5	N1	0.50	mg/L			05/11/20 21:31	1

Client Sample ID: CH-CCR-FD05-0520

Lab Sample ID: 550-141925-22

Date Collected: 05/06/20 08:13

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	4.8		0.10	mg/L		05/11/20 05:21	05/23/20 00:27	1
Manganese	1.9		0.010	mg/L		05/11/20 05:21	05/23/20 00:27	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-FD05-0520

Lab Sample ID: 550-141925-22

Date Collected: 05/06/20 08:13

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00093		0.00050	mg/L		05/11/20 08:45	05/22/20 18:56	1
Cobalt	ND		0.00050	mg/L		05/11/20 08:45	05/22/20 18:56	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	5.5	V1	1.0	mg/L			06/03/20 12:38	1
Dissolved Organic Carbon - Duplicate	5.4	V1	1.0	mg/L			06/03/20 12:38	1

Client Sample ID: CH-TANNERS-0520

Lab Sample ID: 550-141925-23

Date Collected: 05/08/20 08:02

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2200	D2	400	mg/L			05/15/20 07:25	200
Fluoride	3.8	D1	0.80	mg/L			05/15/20 06:57	2
Nitrate Nitrite as N	ND	D1 D5	0.50	mg/L			05/13/20 01:18	5
Sulfate	3100	D2	400	mg/L			05/15/20 07:25	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		05/11/20 05:12	05/19/20 01:11	1
Boron	4.0		0.050	mg/L		05/11/20 05:12	05/19/20 01:11	1
Calcium	680		2.0	mg/L		05/11/20 05:12	05/19/20 01:11	1
Iron	0.73		0.10	mg/L		05/11/20 05:12	05/19/20 01:11	1
Lithium	0.33		0.20	mg/L		05/11/20 05:12	05/21/20 19:32	1
Magnesium	260		2.0	mg/L		05/11/20 05:12	05/19/20 01:11	1
Manganese	1.7		0.010	mg/L		05/11/20 05:12	05/19/20 01:11	1
Potassium	20		0.50	mg/L		05/11/20 05:12	05/19/20 01:11	1
Sodium	1600	D2	5.0	mg/L		05/11/20 05:12	05/28/20 03:41	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0015		0.00050	mg/L		05/11/20 08:57	05/11/20 20:59	1
Barium	0.058	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:49	2
Cadmium	0.00033		0.00010	mg/L		05/11/20 08:57	05/11/20 20:59	1
Chromium	0.0021	D2	0.0020	mg/L		05/22/20 05:16	05/28/20 00:49	2
Cobalt	0.020	D2	0.0010	mg/L		05/22/20 05:16	05/28/20 00:49	2
Lead	0.0070		0.00050	mg/L		05/11/20 08:57	05/11/20 20:59	1
Molybdenum	0.036		0.00050	mg/L		05/11/20 08:57	05/11/20 20:59	1
Selenium	0.00054		0.00050	mg/L		05/11/20 08:57	05/11/20 20:59	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	76		6.0	mg/L			05/09/20 23:06	1
Bicarbonate Alkalinity as CaCO3	76		6.0	mg/L			05/09/20 23:06	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 23:06	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			05/09/20 23:06	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 23:06	1
Total Dissolved Solids	8500	D2	100	mg/L			05/12/20 11:12	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-TANNERS-0520

Lab Sample ID: 550-141925-23

Date Collected: 05/08/20 08:02

Matrix: Water

Date Received: 05/08/20 12:35

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.4	H5	1.7	SU			05/21/20 16:30	1
Temperature	13.2	H5	0.1	Degrees C			05/21/20 16:30	1
Ammonia	ND		0.50	mg/L			05/18/20 22:58	1
Total Organic Carbon	1.0		0.50	mg/L			06/01/20 16:13	1
Total Organic Carbon - Duplicates	1.0		0.50	mg/L			06/01/20 16:13	1
Total Organic Carbon - Quad	1.0		0.50	mg/L			06/01/20 16:13	1

Client Sample ID: CH-CCR-W309-0520

Lab Sample ID: 550-141925-24

Date Collected: 05/04/20 14:24

Matrix: Water

Date Received: 05/08/20 12:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1500	D2	400	mg/L			05/15/20 09:14	200
Fluoride	1.2	D1	0.80	mg/L			05/15/20 08:47	2
Nitrate Nitrite as N	2.6	D1	0.50	mg/L			05/13/20 01:45	5
Sulfate	3200	D2	400	mg/L			05/15/20 09:14	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		05/12/20 13:26	05/13/20 20:09	1
Boron	0.46		0.050	mg/L		05/12/20 13:26	05/13/20 20:09	1
Calcium	440		2.0	mg/L		05/12/20 13:26	05/13/20 20:09	1
Iron	ND		0.10	mg/L		05/12/20 13:26	05/13/20 20:09	1
Lithium	0.50		0.20	mg/L		05/12/20 13:26	05/13/20 20:09	1
Magnesium	86		2.0	mg/L		05/12/20 13:26	05/13/20 20:09	1
Manganese	0.83		0.010	mg/L		05/12/20 13:26	05/14/20 20:14	1
Potassium	8.9		0.50	mg/L		05/12/20 13:26	05/13/20 20:09	1
Sodium	1800	D2	5.0	mg/L		05/12/20 13:26	05/19/20 21:32	10

Method: 200.8 LL - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0010	mg/L		05/12/20 13:29	05/13/20 17:54	1
Arsenic	0.0047		0.00050	mg/L		05/12/20 13:29	05/13/20 18:49	1
Barium	0.0070		0.00050	mg/L		05/20/20 05:21	05/20/20 22:40	1
Cadmium	ND		0.00010	mg/L		05/12/20 13:29	05/13/20 17:54	1
Chromium	0.0052		0.0010	mg/L		05/12/20 13:29	05/13/20 18:49	1
Cobalt	ND		0.00050	mg/L		05/12/20 13:29	05/13/20 18:49	1
Lead	0.023		0.00050	mg/L		05/12/20 13:29	05/13/20 17:54	1
Molybdenum	0.010		0.00050	mg/L		05/12/20 13:29	05/13/20 17:54	1
Selenium	0.20		0.00050	mg/L		05/12/20 13:29	05/13/20 18:49	1
Thallium	ND	B3	0.00010	mg/L		05/12/20 13:29	05/13/20 17:54	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	160		6.0	mg/L			05/16/20 18:27	1
Bicarbonate Alkalinity as CaCO3	160		6.0	mg/L			05/16/20 18:27	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/16/20 18:27	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			05/16/20 18:27	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			05/16/20 18:27	1
Total Dissolved Solids	7200	D2	100	mg/L			05/11/20 11:20	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-W309-0520

Lab Sample ID: 550-141925-24

Date Collected: 05/04/20 14:24

Matrix: Water

Date Received: 05/08/20 12:35

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH	7.5	H5	1.7	SU			05/21/20 16:30	1
Temperature	13.9	H5	0.1	Degrees C			05/21/20 16:30	1
Ammonia	ND		0.50	mg/L			05/18/20 23:05	1
Total Organic Carbon	ND		1.0	mg/L			05/29/20 21:31	1

Client Sample ID: CH-CCR-W309-0520

Lab Sample ID: 550-141925-25

Date Collected: 05/04/20 14:24

Matrix: Water

Date Received: 05/08/20 12:35

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10	mg/L		05/12/20 10:33	05/13/20 23:28	1
Manganese	0.83		0.010	mg/L		05/12/20 10:33	05/13/20 23:28	1

Method: 200.8 LL - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0038		0.00050	mg/L		05/12/20 09:27	05/13/20 19:06	1
Cobalt	ND		0.00050	mg/L		05/12/20 09:27	05/13/20 19:06	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	ND		1.0	mg/L			05/30/20 08:12	1

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-210077/2

Matrix: Water

Analysis Batch: 210077

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0	mg/L			05/11/20 17:25	1
Fluoride	ND		0.40	mg/L			05/11/20 17:25	1
Sulfate	ND		2.0	mg/L			05/11/20 17:25	1

Lab Sample ID: LCS 550-210077/5

Matrix: Water

Analysis Batch: 210077

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	21.4		mg/L		107	90 - 110
Fluoride	4.00	4.17		mg/L		104	90 - 110
Sulfate	20.0	20.9		mg/L		105	90 - 110

Lab Sample ID: LCSD 550-210077/6

Matrix: Water

Analysis Batch: 210077

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	21.4		mg/L		107	90 - 110	0	20
Fluoride	4.00	4.24		mg/L		106	90 - 110	2	20
Sulfate	20.0	20.8		mg/L		104	90 - 110	0	20

Lab Sample ID: 550-141925-2 MS

Matrix: Water

Analysis Batch: 210077

Client Sample ID: CH-CCR-M46-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	ND	M2 D1 R13 D5	8.00	5.31	D1 M2	mg/L		59	80 - 120

Lab Sample ID: 550-141925-2 MS

Matrix: Water

Analysis Batch: 210077

Client Sample ID: CH-CCR-M46-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	7100	M1 D2	4000	10900	D2	mg/L		94	80 - 120
Sulfate	7800	M1 D2 R13	4000	11100	D2	mg/L		82	80 - 120

Lab Sample ID: 550-141925-2 MSD

Matrix: Water

Analysis Batch: 210077

Client Sample ID: CH-CCR-M46-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	ND	M2 D1 R13 D5	8.00	6.86	D1 M2 R13	mg/L		78	80 - 120	26	20

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-141925-2 MSD

Matrix: Water

Analysis Batch: 210077

Client Sample ID: CH-CCR-M46-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	7100	M1 D2	4000	12900	D2 M1	mg/L		145	80 - 120	17	20
Sulfate	7800	M1 D2 R13	4000	14500	D2 M1 R13	mg/L		169	80 - 120	27	20

Lab Sample ID: MB 550-210078/2

Matrix: Water

Analysis Batch: 210078

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0	mg/L			05/11/20 14:23	1
Fluoride	ND		0.40	mg/L			05/11/20 14:23	1
Sulfate	ND		2.0	mg/L			05/11/20 14:23	1

Lab Sample ID: LCS 550-210078/5

Matrix: Water

Analysis Batch: 210078

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	20.9		mg/L		105	90 - 110
Fluoride	4.00	4.17		mg/L		104	90 - 110
Sulfate	20.0	20.8		mg/L		104	90 - 110

Lab Sample ID: LCSD 550-210078/6

Matrix: Water

Analysis Batch: 210078

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	20.9		mg/L		105	90 - 110	0	20
Fluoride	4.00	4.17		mg/L		104	90 - 110	0	20
Sulfate	20.0	20.8		mg/L		104	90 - 110	0	20

Lab Sample ID: 550-141924-A-4 MS ^100

Matrix: Water

Analysis Batch: 210078

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	1300	D2	2000	3600	D2	mg/L		114	80 - 120

Lab Sample ID: 550-141924-A-4 MSD ^100

Matrix: Water

Analysis Batch: 210078

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	1300	D2	2000	3600	D2	mg/L		114	80 - 120	0	20

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-141924-B-4 MS ^2

Matrix: Water

Analysis Batch: 210078

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	1.6	D1	8.00	9.96	D1	mg/L		104	80 - 120
Sulfate	350	D1 M3	40.0	391	D1 M3	mg/L		95	80 - 120

Lab Sample ID: 550-141924-B-4 MSD ^2

Matrix: Water

Analysis Batch: 210078

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	1.6	D1	8.00	10.1	D1	mg/L		106	80 - 120	1	20
Sulfate	350	D1 M3	40.0	390	D1 M3	mg/L		92	80 - 120	0	20

Lab Sample ID: MB 550-210201/2

Matrix: Water

Analysis Batch: 210201

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate Nitrite as N	ND		0.10	mg/L			05/12/20 14:47	1

Lab Sample ID: LCS 550-210201/5

Matrix: Water

Analysis Batch: 210201

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	8.00	8.53		mg/L		107	90 - 110

Lab Sample ID: LCSD 550-210201/6

Matrix: Water

Analysis Batch: 210201

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate Nitrite as N	8.00	8.53		mg/L		107	90 - 110	0	20

Lab Sample ID: 550-141925-2 MS

Matrix: Water

Analysis Batch: 210201

Client Sample ID: CH-CCR-M46-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate Nitrite as N	ND	D1 D5 M2 R13	40.0	41.6	D1	mg/L		104	80 - 120

Lab Sample ID: 550-141925-2 MSD

Matrix: Water

Analysis Batch: 210201

Client Sample ID: CH-CCR-M46-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate Nitrite as N	ND	D1 D5 M2 R13	40.0	19.9	D1 M2 R13	mg/L		50	80 - 120	71	20

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 550-210424/2

Matrix: Water

Analysis Batch: 210424

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0	mg/L			05/14/20 14:03	1
Fluoride	ND		0.40	mg/L			05/14/20 14:03	1
Sulfate	ND		2.0	mg/L			05/14/20 14:03	1

Lab Sample ID: LCS 550-210424/5

Matrix: Water

Analysis Batch: 210424

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	21.2		mg/L		106	90 - 110
Fluoride	4.00	4.23		mg/L		106	90 - 110
Sulfate	20.0	21.0		mg/L		105	90 - 110

Lab Sample ID: LCSD 550-210424/6

Matrix: Water

Analysis Batch: 210424

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	21.2		mg/L		106	90 - 110	0	20
Fluoride	4.00	4.22		mg/L		106	90 - 110	0	20
Sulfate	20.0	21.0		mg/L		105	90 - 110	0	20

Lab Sample ID: 550-141925-14 MS

Matrix: Water

Analysis Batch: 210424

Client Sample ID: CH-CCR-M67-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.95	D1	8.00	9.23	D1	mg/L		103	80 - 120

Lab Sample ID: 550-141925-14 MSD

Matrix: Water

Analysis Batch: 210424

Client Sample ID: CH-CCR-M67-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.95	D1	8.00	9.22	D1	mg/L		103	80 - 120	0	20

Lab Sample ID: 550-142112-A-3 MS

Matrix: Water

Analysis Batch: 210424

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	7.5		20.0	30.2		mg/L		113	80 - 120
Fluoride	ND		4.00	4.42		mg/L		107	80 - 120
Sulfate	26		20.0	46.6		mg/L		105	80 - 120

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-142112-A-3 MSD

Matrix: Water

Analysis Batch: 210424

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	7.5		20.0	30.3		mg/L		114	80 - 120	0	20
Fluoride	ND		4.00	4.44		mg/L		108	80 - 120	0	20
Sulfate	26		20.0	46.7		mg/L		105	80 - 120	0	20

Lab Sample ID: MB 550-210611/2

Matrix: Water

Analysis Batch: 210611

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0	mg/L			05/18/20 15:31	1
Fluoride	ND		0.40	mg/L			05/18/20 15:31	1
Sulfate	ND		2.0	mg/L			05/18/20 15:31	1

Lab Sample ID: LCS 550-210611/5

Matrix: Water

Analysis Batch: 210611

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	21.2		mg/L		106	90 - 110
Fluoride	4.00	4.24		mg/L		106	90 - 110
Sulfate	20.0	21.2		mg/L		106	90 - 110

Lab Sample ID: LCSD 550-210611/6

Matrix: Water

Analysis Batch: 210611

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	21.2		mg/L		106	90 - 110	0	20
Fluoride	4.00	4.26		mg/L		107	90 - 110	1	20
Sulfate	20.0	21.2		mg/L		106	90 - 110	0	20

Lab Sample ID: 550-141925-14 MS

Matrix: Water

Analysis Batch: 210611

Client Sample ID: CH-CCR-M67-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5400	D2	4000	10200	D2	mg/L		120	80 - 120
Sulfate	1500	D2	4000	5720	D2	mg/L		105	80 - 120

Lab Sample ID: 550-141925-14 MSD

Matrix: Water

Analysis Batch: 210611

Client Sample ID: CH-CCR-M67-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	5400	D2	4000	9830	D2	mg/L		111	80 - 120	4	20
Sulfate	1500	D2	4000	5650	D2	mg/L		104	80 - 120	1	20

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 550-209972/1-A

Matrix: Water

Analysis Batch: 210622

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 209972

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		05/11/20 05:12	05/18/20 23:31	1
Boron	ND		0.050	mg/L		05/11/20 05:12	05/18/20 23:31	1
Calcium	ND		2.0	mg/L		05/11/20 05:12	05/18/20 23:31	1
Iron	ND		0.10	mg/L		05/11/20 05:12	05/18/20 23:31	1
Magnesium	ND		2.0	mg/L		05/11/20 05:12	05/18/20 23:31	1
Manganese	ND		0.010	mg/L		05/11/20 05:12	05/18/20 23:31	1
Potassium	ND		0.50	mg/L		05/11/20 05:12	05/18/20 23:31	1

Lab Sample ID: MB 550-209972/1-A

Matrix: Water

Analysis Batch: 210962

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 209972

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Lithium	ND		0.20	mg/L		05/11/20 05:12	05/21/20 18:16	1

Lab Sample ID: MB 550-209972/1-A

Matrix: Water

Analysis Batch: 211270

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 209972

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	ND		0.50	mg/L		05/11/20 05:12	05/28/20 02:52	1

Lab Sample ID: LCS 550-209972/2-A

Matrix: Water

Analysis Batch: 210622

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 209972

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	1.00	1.11		mg/L		111	85 - 115
Boron	1.00	0.979		mg/L		98	85 - 115
Calcium	21.0	22.4		mg/L		107	85 - 115
Iron	1.00	1.06		mg/L		106	85 - 115
Magnesium	21.0	22.0		mg/L		105	85 - 115
Manganese	1.00	1.03		mg/L		103	85 - 115
Potassium	20.0	20.5		mg/L		102	85 - 115

Lab Sample ID: LCS 550-209972/2-A

Matrix: Water

Analysis Batch: 210962

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 209972

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lithium	1.00	1.03		mg/L		103	85 - 115

Lab Sample ID: LCS 550-209972/2-A

Matrix: Water

Analysis Batch: 211270

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 209972

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sodium	20.0	19.1		mg/L		95	85 - 115

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCSD 550-209972/3-A

Matrix: Water

Analysis Batch: 210622

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 209972

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Beryllium	1.00	1.07		mg/L		107	85 - 115	4	20
Boron	1.00	0.989		mg/L		99	85 - 115	1	20
Calcium	21.0	21.6		mg/L		103	85 - 115	4	20
Iron	1.00	1.02		mg/L		102	85 - 115	4	20
Magnesium	21.0	21.1		mg/L		100	85 - 115	4	20
Manganese	1.00	1.04		mg/L		104	85 - 115	1	20
Potassium	20.0	19.7		mg/L		99	85 - 115	4	20

Lab Sample ID: LCSD 550-209972/3-A

Matrix: Water

Analysis Batch: 210962

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 209972

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lithium	1.00	1.04		mg/L		104	85 - 115	1	20

Lab Sample ID: LCSD 550-209972/3-A

Matrix: Water

Analysis Batch: 211270

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 209972

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sodium	20.0	18.8		mg/L		94	85 - 115	1	20

Lab Sample ID: MB 550-209973/1-A

Matrix: Water

Analysis Batch: 211052

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 209973

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10	mg/L		05/11/20 05:21	05/22/20 23:31	1
Manganese	ND		0.010	mg/L		05/11/20 05:21	05/22/20 23:31	1

Lab Sample ID: LCS 550-209973/2-A

Matrix: Water

Analysis Batch: 211052

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 209973

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	1.00	0.952		mg/L		95	85 - 115		
Manganese	1.00	0.992		mg/L		99	85 - 115		

Lab Sample ID: LCSD 550-209973/3-A

Matrix: Water

Analysis Batch: 211052

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 209973

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	1.00	1.00		mg/L		100	85 - 115	5	20
Manganese	1.00	0.989		mg/L		99	85 - 115	0	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: MB 550-210130/1-A
Matrix: Water
Analysis Batch: 210333

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 210130

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10	mg/L		05/12/20 10:33	05/13/20 22:43	1
Manganese	ND		0.010	mg/L		05/12/20 10:33	05/13/20 22:43	1

Lab Sample ID: LCS 550-210130/2-A
Matrix: Water
Analysis Batch: 210333

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 210130

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	1.00	0.988		mg/L		99	85 - 115
Manganese	1.00	1.01		mg/L		101	85 - 115

Lab Sample ID: LCSD 550-210130/3-A
Matrix: Water
Analysis Batch: 210333

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 210130

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	1.00	0.981		mg/L		98	85 - 115	1	20
Manganese	1.00	1.00		mg/L		100	85 - 115	1	20

Lab Sample ID: MB 550-210154/1-A
Matrix: Water
Analysis Batch: 210331

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 210154

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		05/12/20 13:26	05/13/20 19:29	1
Boron	ND		0.050	mg/L		05/12/20 13:26	05/13/20 19:29	1
Calcium	ND		2.0	mg/L		05/12/20 13:26	05/13/20 19:29	1
Iron	ND		0.10	mg/L		05/12/20 13:26	05/13/20 19:29	1
Lithium	ND		0.20	mg/L		05/12/20 13:26	05/13/20 19:29	1
Magnesium	ND		2.0	mg/L		05/12/20 13:26	05/13/20 19:29	1
Potassium	ND		0.50	mg/L		05/12/20 13:26	05/13/20 19:29	1

Lab Sample ID: MB 550-210154/1-A
Matrix: Water
Analysis Batch: 210442

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 210154

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		0.010	mg/L		05/12/20 13:26	05/14/20 19:38	1

Lab Sample ID: LCS 550-210154/2-A
Matrix: Water
Analysis Batch: 210331

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 210154

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	1.00	1.04		mg/L		104	85 - 115
Boron	1.00	0.963		mg/L		96	85 - 115
Calcium	21.0	21.5		mg/L		102	85 - 115
Iron	1.00	1.00		mg/L		100	85 - 115
Lithium	1.00	0.980		mg/L		98	85 - 115
Magnesium	21.0	21.2		mg/L		101	85 - 115

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: LCS 550-210154/2-A

Matrix: Water

Analysis Batch: 210331

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 210154

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Potassium	20.0	20.2		mg/L		101	85 - 115

Lab Sample ID: LCS 550-210154/2-A

Matrix: Water

Analysis Batch: 210442

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 210154

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Manganese	1.00	1.02		mg/L		102	85 - 115

Lab Sample ID: LCSD 550-210154/3-A

Matrix: Water

Analysis Batch: 210331

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 210154

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Beryllium	1.00	1.10		mg/L		110	85 - 115	6	20
Boron	1.00	0.966		mg/L		97	85 - 115	0	20
Calcium	21.0	22.8		mg/L		109	85 - 115	6	20
Iron	1.00	1.07		mg/L		107	85 - 115	6	20
Lithium	1.00	1.04		mg/L		104	85 - 115	6	20
Magnesium	21.0	22.5		mg/L		107	85 - 115	6	20
Potassium	20.0	21.3		mg/L		107	85 - 115	5	20

Lab Sample ID: LCSD 550-210154/3-A

Matrix: Water

Analysis Batch: 210442

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 210154

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Manganese	1.00	1.03		mg/L		103	85 - 115	0	20

Lab Sample ID: 550-141925-3 MS

Matrix: Water

Analysis Batch: 211052

Client Sample ID: CH-CCR-M46-0520

Prep Type: Dissolved

Prep Batch: 209973

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.68		1.00	1.62		mg/L		94	70 - 130
Manganese	3.6	M2	1.00	4.52		mg/L		88	70 - 130

Lab Sample ID: 550-141925-3 MSD

Matrix: Water

Analysis Batch: 211052

Client Sample ID: CH-CCR-M46-0520

Prep Type: Dissolved

Prep Batch: 209973

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Iron	0.68		1.00	1.60		mg/L		92	70 - 130	1	20
Manganese	3.6	M2	1.00	4.30	M2	mg/L		66	70 - 130	5	20

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: 550-141869-A-2-C MS
Matrix: Water
Analysis Batch: 210333

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 210130

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	ND		1.00	1.08		mg/L		99	70 - 130
Manganese	0.018		1.00	1.04		mg/L		102	70 - 130

Lab Sample ID: 550-141869-A-2-D MSD
Matrix: Water
Analysis Batch: 210333

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 210130

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	ND		1.00	1.09		mg/L		99	70 - 130	1	20
Manganese	0.018		1.00	1.04		mg/L		103	70 - 130	1	20

Lab Sample ID: 550-141998-C-1-A MS
Matrix: Water
Analysis Batch: 210331

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 210154

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	ND		1.00	1.04		mg/L		104	70 - 130
Boron	ND		1.00	0.980		mg/L		98	70 - 130
Calcium	ND		21.0	21.4		mg/L		102	70 - 130
Iron	ND		1.00	1.01		mg/L		101	70 - 130
Lithium	ND		1.00	0.965		mg/L		96	70 - 130
Magnesium	ND		21.0	21.1		mg/L		100	70 - 130
Potassium	ND		20.0	20.1		mg/L		101	70 - 130

Lab Sample ID: 550-141998-C-1-A MS
Matrix: Water
Analysis Batch: 210442

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 210154

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Manganese	ND		1.00	1.03		mg/L		103	70 - 130

Lab Sample ID: 550-141998-C-1-B MSD
Matrix: Water
Analysis Batch: 210331

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 210154

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Beryllium	ND		1.00	0.975		mg/L		97	70 - 130	6	20
Boron	ND		1.00	0.999		mg/L		100	70 - 130	2	20
Calcium	ND		21.0	20.2		mg/L		96	70 - 130	6	20
Iron	ND		1.00	0.937		mg/L		94	70 - 130	7	20
Lithium	ND		1.00	0.901		mg/L		90	70 - 130	7	20
Magnesium	ND		21.0	19.9		mg/L		95	70 - 130	6	20
Potassium	ND		20.0	18.9		mg/L		95	70 - 130	6	20

Lab Sample ID: 550-141998-C-1-B MSD
Matrix: Water
Analysis Batch: 210442

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 210154

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Manganese	ND		1.00	1.03		mg/L		103	70 - 130	0	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 200.8 LL - Metals (ICP/MS)

Lab Sample ID: MB 550-210012/1-A

Matrix: Water

Analysis Batch: 210084

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 210012

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.00050	mg/L		05/11/20 08:45	05/11/20 19:49	1
Cobalt	ND		0.00050	mg/L		05/11/20 08:45	05/11/20 19:49	1

Lab Sample ID: LCS 550-210012/2-A

Matrix: Water

Analysis Batch: 210084

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 210012

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.0898		mg/L		90	85 - 115
Cobalt	0.100	0.0850		mg/L		85	85 - 115

Lab Sample ID: LCSD 550-210012/3-A

Matrix: Water

Analysis Batch: 210084

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 210012

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.100	0.0902		mg/L		90	85 - 115	0	20
Cobalt	0.100	0.0856		mg/L		86	85 - 115	1	20

Lab Sample ID: MB 550-210014/1-A

Matrix: Water

Analysis Batch: 210085

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 210014

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.00050	mg/L		05/11/20 08:57	05/11/20 20:24	1
Cadmium	ND		0.00010	mg/L		05/11/20 08:57	05/11/20 20:24	1
Lead	ND		0.00050	mg/L		05/11/20 08:57	05/11/20 20:24	1
Molybdenum	ND		0.00050	mg/L		05/11/20 08:57	05/11/20 20:24	1
Selenium	ND		0.00050	mg/L		05/11/20 08:57	05/11/20 20:24	1

Lab Sample ID: MB 550-210014/1-A

Matrix: Water

Analysis Batch: 210942

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 210014

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND		0.0010	mg/L		05/11/20 08:57	05/21/20 21:30	1
Cobalt	ND		0.00050	mg/L		05/11/20 08:57	05/21/20 21:30	1

Lab Sample ID: LCS 550-210014/2-A

Matrix: Water

Analysis Batch: 210085

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 210014

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.0890		mg/L		89	85 - 115
Cadmium	0.100	0.0869		mg/L		87	85 - 115
Lead	0.100	0.0873		mg/L		87	85 - 115
Molybdenum	0.100	0.0865		mg/L		87	85 - 115
Selenium	0.100	0.0885		mg/L		89	85 - 115

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 550-210014/2-A
Matrix: Water
Analysis Batch: 210942

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 210014

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.100	0.0988		mg/L		99	85 - 115
Cobalt	0.100	0.0986		mg/L		99	85 - 115

Lab Sample ID: LCSD 550-210014/3-A
Matrix: Water
Analysis Batch: 210085

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 210014

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.100	0.0919		mg/L		92	85 - 115	3	20
Cadmium	0.100	0.0873		mg/L		87	85 - 115	1	20
Lead	0.100	0.0882		mg/L		88	85 - 115	1	20
Molybdenum	0.100	0.0863		mg/L		86	85 - 115	0	20
Selenium	0.100	0.0912		mg/L		91	85 - 115	3	20

Lab Sample ID: LCSD 550-210014/3-A
Matrix: Water
Analysis Batch: 210942

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 210014

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium	0.100	0.0985		mg/L		99	85 - 115	0	20
Cobalt	0.100	0.0985		mg/L		99	85 - 115	0	20

Lab Sample ID: 550-141925-4 MS
Matrix: Water
Analysis Batch: 210085

Client Sample ID: CH-CCR-M50A-0520
Prep Type: Total/NA
Prep Batch: 210014

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.0027		0.100	0.101		mg/L		98	70 - 130
Cadmium	ND		0.100	0.0812		mg/L		81	70 - 130
Lead	ND		0.100	0.0805		mg/L		80	70 - 130
Molybdenum	0.0065		0.100	0.0955		mg/L		89	70 - 130
Selenium	0.0018		0.100	0.113		mg/L		111	70 - 130

Lab Sample ID: 550-141925-4 MS
Matrix: Water
Analysis Batch: 210942

Client Sample ID: CH-CCR-M50A-0520
Prep Type: Total/NA
Prep Batch: 210014

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.0024		0.100	0.0988		mg/L		96	70 - 130
Cobalt	0.00066		0.100	0.0928		mg/L		92	70 - 130

Lab Sample ID: 550-141925-4 MSD
Matrix: Water
Analysis Batch: 210085

Client Sample ID: CH-CCR-M50A-0520
Prep Type: Total/NA
Prep Batch: 210014

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.0027		0.100	0.104		mg/L		101	70 - 130	3	20
Cadmium	ND		0.100	0.0821		mg/L		82	70 - 130	1	20
Lead	ND		0.100	0.0827		mg/L		83	70 - 130	3	20
Molybdenum	0.0065		0.100	0.0952		mg/L		89	70 - 130	0	20

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QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: 550-141925-4 MSD

Matrix: Water

Analysis Batch: 210085

Client Sample ID: CH-CCR-M50A-0520

Prep Type: Total/NA

Prep Batch: 210014

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Selenium	0.0018		0.100	0.114		mg/L		112	70 - 130	2	20

Lab Sample ID: 550-141925-4 MSD

Matrix: Water

Analysis Batch: 210942

Client Sample ID: CH-CCR-M50A-0520

Prep Type: Total/NA

Prep Batch: 210014

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium	0.0024		0.100	0.101		mg/L		98	70 - 130	2	20
Cobalt	0.00066		0.100	0.0953		mg/L		95	70 - 130	3	20

Lab Sample ID: MB 550-210126/1-A

Matrix: Water

Analysis Batch: 210304

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 210126

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.00050	mg/L		05/12/20 09:27	05/13/20 18:56	1
Cobalt	ND		0.00050	mg/L		05/12/20 09:27	05/13/20 18:56	1

Lab Sample ID: LCS 550-210126/2-A

Matrix: Water

Analysis Batch: 210304

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 210126

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.0930		mg/L		93	85 - 115
Cobalt	0.100	0.0949		mg/L		95	85 - 115

Lab Sample ID: LCSD 550-210126/3-A

Matrix: Water

Analysis Batch: 210304

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 210126

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.100	0.0953		mg/L		95	85 - 115	2	20
Cobalt	0.100	0.0975		mg/L		97	85 - 115	3	20

Lab Sample ID: MB 550-210155/1-A

Matrix: Water

Analysis Batch: 210296

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 210155

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.0010	mg/L		05/12/20 13:29	05/13/20 17:21	1
Cadmium	ND		0.00010	mg/L		05/12/20 13:29	05/13/20 17:21	1
Lead	ND		0.00050	mg/L		05/12/20 13:29	05/13/20 17:21	1
Molybdenum	ND		0.00050	mg/L		05/12/20 13:29	05/13/20 17:21	1
Thallium	ND		0.00010	mg/L		05/12/20 13:29	05/13/20 17:21	1

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 550-210155/1-A
Matrix: Water
Analysis Batch: 210302

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 210155

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.00050	mg/L		05/12/20 13:29	05/13/20 18:26	1
Chromium	ND		0.0010	mg/L		05/12/20 13:29	05/13/20 18:26	1
Cobalt	ND		0.00050	mg/L		05/12/20 13:29	05/13/20 18:26	1
Selenium	ND		0.00050	mg/L		05/12/20 13:29	05/13/20 18:26	1

Lab Sample ID: LCS 550-210155/2-A
Matrix: Water
Analysis Batch: 210296

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 210155

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.100	0.0991		mg/L		99	85 - 115
Cadmium	0.100	0.0979		mg/L		98	85 - 115
Lead	0.100	0.0968		mg/L		97	85 - 115
Molybdenum	0.100	0.0981		mg/L		98	85 - 115
Thallium	0.100	0.0969		mg/L		97	85 - 115

Lab Sample ID: LCS 550-210155/2-A
Matrix: Water
Analysis Batch: 210302

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 210155

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.100	0.0939		mg/L		94	85 - 115
Chromium	0.100	0.0937		mg/L		94	85 - 115
Cobalt	0.100	0.0939		mg/L		94	85 - 115
Selenium	0.100	0.0945		mg/L		95	85 - 115

Lab Sample ID: LCSD 550-210155/3-A
Matrix: Water
Analysis Batch: 210296

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 210155

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Antimony	0.100	0.0985		mg/L		98	85 - 115	1	20
Cadmium	0.100	0.0964		mg/L		96	85 - 115	2	20
Lead	0.100	0.0994		mg/L		99	85 - 115	3	20
Molybdenum	0.100	0.0964		mg/L		96	85 - 115	2	20
Thallium	0.100	0.0982		mg/L		98	85 - 115	1	20

Lab Sample ID: LCSD 550-210155/3-A
Matrix: Water
Analysis Batch: 210302

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 210155

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Arsenic	0.100	0.0963		mg/L		96	85 - 115	2	20
Chromium	0.100	0.0957		mg/L		96	85 - 115	2	20
Cobalt	0.100	0.0957		mg/L		96	85 - 115	2	20
Selenium	0.100	0.0959		mg/L		96	85 - 115	1	20

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 550-210734/1-A

Matrix: Water

Analysis Batch: 210895

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 210734

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.00050	mg/L		05/20/20 05:21	05/20/20 22:17	1

Lab Sample ID: LCS 550-210734/2-A

Matrix: Water

Analysis Batch: 210895

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 210734

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	0.100	0.113		mg/L		113	85 - 115

Lab Sample ID: LCSD 550-210734/3-A

Matrix: Water

Analysis Batch: 210895

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 210734

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Barium	0.100	0.111		mg/L		111	85 - 115	2	20

Lab Sample ID: 550-141890-B-1-E MS

Matrix: Water

Analysis Batch: 210895

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 210734

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Barium	0.025		0.100	0.139		mg/L		114	70 - 130

Lab Sample ID: 550-141890-B-1-F MSD

Matrix: Water

Analysis Batch: 210895

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 210734

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Barium	0.025		0.100	0.143		mg/L		118	70 - 130	3	20

Lab Sample ID: MB 550-210947/1-A

Matrix: Water

Analysis Batch: 211032

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 210947

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	ND		0.00050	mg/L		05/22/20 05:16	05/22/20 19:02	1

Lab Sample ID: MB 550-210947/1-A

Matrix: Water

Analysis Batch: 211332

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 210947

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.00050	mg/L		05/22/20 05:16	05/28/20 00:14	1
Cadmium	ND		0.00010	mg/L		05/22/20 05:16	05/28/20 00:14	1
Chromium	ND		0.0010	mg/L		05/22/20 05:16	05/28/20 00:14	1
Cobalt	ND		0.00050	mg/L		05/22/20 05:16	05/28/20 00:14	1
Molybdenum	ND		0.00050	mg/L		05/22/20 05:16	05/28/20 00:14	1

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 550-210947/1-A
Matrix: Water
Analysis Batch: 211444

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 210947

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		0.00050	mg/L		05/22/20 05:16	05/28/20 22:50	1

Lab Sample ID: LCS 550-210947/2-A
Matrix: Water
Analysis Batch: 211032

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 210947
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Barium	0.100	0.106		mg/L		106	85 - 115

Lab Sample ID: LCS 550-210947/2-A
Matrix: Water
Analysis Batch: 211332

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 210947
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	0.100	0.106		mg/L		106	85 - 115
Cadmium	0.100	0.105		mg/L		105	85 - 115
Chromium	0.100	0.0946		mg/L		95	85 - 115
Cobalt	0.100	0.0983		mg/L		98	85 - 115
Molybdenum	0.100	0.104		mg/L		104	85 - 115

Lab Sample ID: LCS 550-210947/2-A
Matrix: Water
Analysis Batch: 211444

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 210947
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Selenium	0.100	0.0993		mg/L		99	85 - 115

Lab Sample ID: LCSD 550-210947/3-A
Matrix: Water
Analysis Batch: 211032

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 210947
%Rec.

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Barium	0.100	0.109		mg/L		109	85 - 115	3	20

Lab Sample ID: LCSD 550-210947/3-A
Matrix: Water
Analysis Batch: 211332

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 210947
%Rec.

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	0.100	0.105		mg/L		105	85 - 115	0	20
Cadmium	0.100	0.106		mg/L		106	85 - 115	1	20
Chromium	0.100	0.0956		mg/L		96	85 - 115	1	20
Cobalt	0.100	0.0996		mg/L		100	85 - 115	1	20
Molybdenum	0.100	0.105		mg/L		105	85 - 115	1	20

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 550-210947/3-A

Matrix: Water

Analysis Batch: 211444

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 210947

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Selenium	0.100	0.0960		mg/L		96	85 - 115	3	20

Lab Sample ID: 550-141925-21 MS

Matrix: Water

Analysis Batch: 211032

Client Sample ID: CH-CCR-FD05-0520

Prep Type: Total/NA

Prep Batch: 210947

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Barium	0.012		0.100	0.128		mg/L		116	70 - 130		

Lab Sample ID: 550-141925-21 MS

Matrix: Water

Analysis Batch: 211332

Client Sample ID: CH-CCR-FD05-0520

Prep Type: Total/NA

Prep Batch: 210947

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND	D2	0.100	0.118		mg/L		117	70 - 130		
Cadmium	ND	D2	0.100	0.103		mg/L		102	70 - 130		
Chromium	ND	D2	0.100	0.102		mg/L		102	70 - 130		
Cobalt	ND	D2	0.100	0.101		mg/L		101	70 - 130		
Molybdenum	0.0053	D2	0.100	0.117		mg/L		112	70 - 130		

Lab Sample ID: 550-141925-21 MS

Matrix: Water

Analysis Batch: 211444

Client Sample ID: CH-CCR-FD05-0520

Prep Type: Total/NA

Prep Batch: 210947

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Selenium	ND	D1	0.100	0.120	D1	mg/L		119	70 - 130		

Lab Sample ID: 550-141925-21 MSD

Matrix: Water

Analysis Batch: 211032

Client Sample ID: CH-CCR-FD05-0520

Prep Type: Total/NA

Prep Batch: 210947

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Barium	0.012		0.100	0.130		mg/L		117	70 - 130	1	20

Lab Sample ID: 550-141925-21 MSD

Matrix: Water

Analysis Batch: 211332

Client Sample ID: CH-CCR-FD05-0520

Prep Type: Total/NA

Prep Batch: 210947

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND	D2	0.100	0.118		mg/L		118	70 - 130	0	20
Cadmium	ND	D2	0.100	0.100		mg/L		100	70 - 130	2	20
Chromium	ND	D2	0.100	0.105		mg/L		105	70 - 130	3	20
Cobalt	ND	D2	0.100	0.103		mg/L		103	70 - 130	2	20
Molybdenum	0.0053	D2	0.100	0.116		mg/L		111	70 - 130	1	20

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: 550-141925-21 MSD

Matrix: Water

Analysis Batch: 211444

Client Sample ID: CH-CCR-FD05-0520

Prep Type: Total/NA

Prep Batch: 210947

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Selenium	ND	D1	0.100	0.116	D1	mg/L		116	70 - 130	3	20

Lab Sample ID: 550-141925-5 MS

Matrix: Water

Analysis Batch: 210084

Client Sample ID: CH-CCR-M50A-0520

Prep Type: Dissolved

Prep Batch: 210012

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.0024		0.100	0.103		mg/L		101	70 - 130		
Cobalt	ND		0.100	0.0796		mg/L		79	70 - 130		

Lab Sample ID: 550-141925-5 MSD

Matrix: Water

Analysis Batch: 210084

Client Sample ID: CH-CCR-M50A-0520

Prep Type: Dissolved

Prep Batch: 210012

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.0024		0.100	0.101		mg/L		98	70 - 130	2	20
Cobalt	ND		0.100	0.0766		mg/L		76	70 - 130	4	20

Lab Sample ID: 550-141925-25 MS

Matrix: Water

Analysis Batch: 210304

Client Sample ID: CH-CCR-W309-0520

Prep Type: Dissolved

Prep Batch: 210126

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.0038		0.100	0.110		mg/L		107	70 - 130		
Cobalt	ND		0.100	0.0894		mg/L		89	70 - 130		

Lab Sample ID: 550-141925-25 MSD

Matrix: Water

Analysis Batch: 210304

Client Sample ID: CH-CCR-W309-0520

Prep Type: Dissolved

Prep Batch: 210126

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.0038		0.100	0.110		mg/L		106	70 - 130	1	20
Cobalt	ND		0.100	0.0906		mg/L		90	70 - 130	1	20

Lab Sample ID: 550-141998-C-2-B MS

Matrix: Water

Analysis Batch: 210296

Client Sample ID: Matrix Spike

Prep Type: Dissolved

Prep Batch: 210155

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	ND		0.100	0.102		mg/L		102	70 - 130		
Cadmium	ND		0.100	0.0949		mg/L		95	70 - 130		
Lead	ND		0.100	0.0935		mg/L		93	70 - 130		
Molybdenum	0.0085		0.100	0.111		mg/L		102	70 - 130		
Thallium	ND		0.100	0.0933		mg/L		93	70 - 130		

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: 200.8 LL - Metals (ICP/MS) (Continued)

Lab Sample ID: 550-141998-C-2-B MS
Matrix: Water
Analysis Batch: 210302

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 210155

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.0066		0.100	0.106		mg/L		100	70 - 130
Chromium	0.0017		0.100	0.0956		mg/L		94	70 - 130
Cobalt	ND		0.100	0.0925		mg/L		92	70 - 130
Selenium	0.0011		0.100	0.0956		mg/L		94	70 - 130

Lab Sample ID: 550-141998-C-2-C MSD
Matrix: Water
Analysis Batch: 210296

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 210155

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	ND		0.100	0.103		mg/L		103	70 - 130	0	20
Cadmium	ND		0.100	0.0956		mg/L		96	70 - 130	1	20
Lead	ND		0.100	0.0919		mg/L		91	70 - 130	2	20
Molybdenum	0.0085		0.100	0.111		mg/L		103	70 - 130	1	20
Thallium	ND		0.100	0.0918		mg/L		92	70 - 130	2	20

Lab Sample ID: 550-141998-C-2-C MSD
Matrix: Water
Analysis Batch: 210302

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 210155

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	0.0066		0.100	0.106		mg/L		99	70 - 130	0	20
Chromium	0.0017		0.100	0.0979		mg/L		96	70 - 130	2	20
Cobalt	ND		0.100	0.0941		mg/L		94	70 - 130	2	20
Selenium	0.0011		0.100	0.0969		mg/L		96	70 - 130	1	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 550-209967/34
Matrix: Water
Analysis Batch: 209967

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 20:36	1
Bicarbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 20:36	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 20:36	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			05/09/20 20:36	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			05/09/20 20:36	1

Lab Sample ID: LCS 550-209967/33
Matrix: Water
Analysis Batch: 209967

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity as CaCO3	250	231		mg/L		92	90 - 110

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCSD 550-209967/46

Matrix: Water

Analysis Batch: 209967

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity as CaCO3	250	231		mg/L		93	90 - 110	0	20

Lab Sample ID: 550-141925-2 DU

Matrix: Water

Analysis Batch: 209967

Client Sample ID: CH-CCR-M46-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity as CaCO3	200		207		mg/L		3	20
Bicarbonate Alkalinity as CaCO3	200		207		mg/L		3	20
Carbonate Alkalinity as CaCO3	ND		ND		mg/L		NC	20
Alkalinity, Phenolphthalein	ND		ND		mg/L		NC	20
Hydroxide Alkalinity as CaCO3	ND		ND		mg/L		NC	20

Lab Sample ID: 550-141925-19 DU

Matrix: Water

Analysis Batch: 209967

Client Sample ID: CH-CCR-W126-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity as CaCO3	95		96.6		mg/L		1	20
Bicarbonate Alkalinity as CaCO3	95		96.6		mg/L		1	20
Carbonate Alkalinity as CaCO3	ND		ND		mg/L		NC	20
Alkalinity, Phenolphthalein	ND		ND		mg/L		NC	20
Hydroxide Alkalinity as CaCO3	ND		ND		mg/L		NC	20

Lab Sample ID: MB 550-210520/6

Matrix: Water

Analysis Batch: 210520

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	ND		6.0	mg/L			05/16/20 17:00	1
Bicarbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/16/20 17:00	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			05/16/20 17:00	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			05/16/20 17:00	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			05/16/20 17:00	1

Lab Sample ID: LCS 550-210520/5

Matrix: Water

Analysis Batch: 210520

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD
Alkalinity as CaCO3	250	247		mg/L		99	90 - 110	

Lab Sample ID: LCSD 550-210520/19

Matrix: Water

Analysis Batch: 210520

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity as CaCO3	250	250		mg/L		100	90 - 110	1	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: 550-141990-E-1 DU

Matrix: Water

Analysis Batch: 210520

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity as CaCO3	150		156		mg/L		2	20
Bicarbonate Alkalinity as CaCO3	150		156		mg/L		2	20
Carbonate Alkalinity as CaCO3	ND		ND		mg/L		NC	20
Alkalinity, Phenolphthalein	ND		ND		mg/L		NC	20
Hydroxide Alkalinity as CaCO3	ND		ND		mg/L		NC	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 550-210029/1

Matrix: Water

Analysis Batch: 210029

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		20	mg/L			05/11/20 11:20	1

Lab Sample ID: LCS 550-210029/2

Matrix: Water

Analysis Batch: 210029

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	980		mg/L		98	90 - 110

Lab Sample ID: LCSD 550-210029/3

Matrix: Water

Analysis Batch: 210029

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	1000	990		mg/L		99	90 - 110	1	10

Lab Sample ID: 550-141924-A-4 DU

Matrix: Water

Analysis Batch: 210029

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	3000	D2	2960	D2	mg/L		0	10

Lab Sample ID: 550-141925-2 DU

Matrix: Water

Analysis Batch: 210029

Client Sample ID: CH-CCR-M46-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	13000	D2	12700	D2	mg/L		3	10

Lab Sample ID: MB 550-210140/1

Matrix: Water

Analysis Batch: 210140

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		20	mg/L			05/12/20 11:12	1

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: SM 2540C - Solids, Total Dissolved (TDS) (Continued)

Lab Sample ID: LCS 550-210140/2

Matrix: Water

Analysis Batch: 210140

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Dissolved Solids	1000	976		mg/L		98	90 - 110

Lab Sample ID: LCSD 550-210140/3

Matrix: Water

Analysis Batch: 210140

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids	1000	974		mg/L		97	90 - 110	0	10

Lab Sample ID: 550-141762-E-1 DU

Matrix: Water

Analysis Batch: 210140

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	1800		1860		mg/L		0.9	10

Method: SM 4500 H+ B - pH

Lab Sample ID: LCSSRM 550-210921/1

Matrix: Water

Analysis Batch: 210921

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		99.4	98.5 - 101.5

Lab Sample ID: LCSSRM 550-210921/13

Matrix: Water

Analysis Batch: 210921

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.1		SU		101.3	98.5 - 101.5

Lab Sample ID: LCSSRM 550-210921/24

Matrix: Water

Analysis Batch: 210921

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		99.4	98.5 - 101.5

Lab Sample ID: 550-141925-2 DU

Matrix: Water

Analysis Batch: 210921

Client Sample ID: CH-CCR-M46-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.4	H5	7.4	H5	SU		0.3	5
Temperature	7.8	H5	8.3	H5	Degrees C		6	

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: SM 4500 H+ B - pH (Continued)

Lab Sample ID: 550-141925-21 DU

Matrix: Water

Analysis Batch: 210921

Client Sample ID: CH-CCR-FD05-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.6	H5	7.6	H5	SU		0.1	5
Temperature	12.1	H5	11.9	H5	Degrees C		2	

Method: SM 4500 NH3 D - Ammonia

Lab Sample ID: MB 550-210095/4

Matrix: Water

Analysis Batch: 210095

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.50	mg/L			05/11/20 19:40	1

Lab Sample ID: LCS 550-210095/5

Matrix: Water

Analysis Batch: 210095

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	25.0	24.4		mg/L		97	80 - 120

Lab Sample ID: LCSD 550-210095/6

Matrix: Water

Analysis Batch: 210095

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	25.0	25.2		mg/L		101	80 - 120	3	20

Lab Sample ID: 550-141710-F-1 MS

Matrix: Water

Analysis Batch: 210095

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	4.0		25.0	25.9		mg/L		88	80 - 120

Lab Sample ID: 550-141710-F-1 MSD

Matrix: Water

Analysis Batch: 210095

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	4.0		25.0	26.4		mg/L		90	80 - 120	2	20

Lab Sample ID: MB 550-210663/33

Matrix: Water

Analysis Batch: 210663

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.50	mg/L			05/19/20 00:22	1

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: SM 4500 NH3 D - Ammonia (Continued)

Lab Sample ID: MB 550-210663/4

Matrix: Water

Analysis Batch: 210663

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	ND		0.50	mg/L			05/18/20 20:00	1

Lab Sample ID: LCS 550-210663/34

Matrix: Water

Analysis Batch: 210663

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	25.0	25.0		mg/L		100	80 - 120

Lab Sample ID: LCS 550-210663/5

Matrix: Water

Analysis Batch: 210663

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	25.0	25.8		mg/L		103	80 - 120

Lab Sample ID: LCSD 550-210663/35

Matrix: Water

Analysis Batch: 210663

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	25.0	25.5		mg/L		102	80 - 120	2	20

Lab Sample ID: LCSD 550-210663/6

Matrix: Water

Analysis Batch: 210663

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	25.0	25.0		mg/L		100	80 - 120	3	20

Lab Sample ID: 550-141925-2 MS

Matrix: Water

Analysis Batch: 210663

Client Sample ID: CH-CCR-M46-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	0.82		25.0	23.0		mg/L		89	80 - 120

Lab Sample ID: 550-141925-2 MSD

Matrix: Water

Analysis Batch: 210663

Client Sample ID: CH-CCR-M46-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	0.82		25.0	22.3		mg/L		86	80 - 120	3	20

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 550-210096/5

Matrix: Water

Analysis Batch: 210096

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	mg/L			05/11/20 14:42	1
Total Organic Carbon - Duplicates	ND		0.50	mg/L			05/11/20 14:42	1
Total Organic Carbon - Quad	ND		0.50	mg/L			05/11/20 14:42	1

Lab Sample ID: LCS 550-210096/6

Matrix: Water

Analysis Batch: 210096

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	20.0	21.3		mg/L		107	90 - 110
Total Organic Carbon - Duplicates	20.0	21.3		mg/L		107	90 - 110
Total Organic Carbon - Quad	20.0	21.3		mg/L		107	90 - 110

Lab Sample ID: LCSD 550-210096/7

Matrix: Water

Analysis Batch: 210096

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	20.0	20.6		mg/L		103	90 - 110	3	20
Total Organic Carbon - Duplicates	20.0	20.6		mg/L		103	90 - 110	3	20
Total Organic Carbon - Quad	20.0	20.6		mg/L		103	90 - 110	3	20

Lab Sample ID: MB 550-211616/16

Matrix: Water

Analysis Batch: 211616

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	mg/L			06/01/20 14:40	1
Total Organic Carbon - Duplicates	ND		0.50	mg/L			06/01/20 14:40	1
Total Organic Carbon - Quad	ND		0.50	mg/L			06/01/20 14:40	1

Lab Sample ID: LCS 550-211616/17

Matrix: Water

Analysis Batch: 211616

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	20.0	21.9		mg/L		109	90 - 110
Total Organic Carbon - Duplicates	20.0	21.9		mg/L		109	90 - 110
Total Organic Carbon - Quad	20.0	21.9		mg/L		109	90 - 110

Lab Sample ID: LCSD 550-211616/18

Matrix: Water

Analysis Batch: 211616

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	20.0	20.2		mg/L		101	90 - 110	8	20
Total Organic Carbon - Duplicates	20.0	20.2		mg/L		101	90 - 110	8	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: SM 5310B - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCSD 550-211616/18

Matrix: Water

Analysis Batch: 211616

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Quad	20.0	20.2		mg/L		101	90 - 110	8	20

Lab Sample ID: 550-141925-2 MS

Matrix: Water

Analysis Batch: 211616

Client Sample ID: CH-CCR-M46-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	3.2	M1 R13	20.0	48.3	M1 R13	mg/L		225	90 - 110		
Total Organic Carbon - Duplicates	3.2	R4 M1	20.0	48.3	M1	mg/L		225	90 - 110		
Total Organic Carbon - Quad	3.2	R4 M1	20.0	48.3	M1	mg/L		225	90 - 110		

Lab Sample ID: 550-141925-2 MSD

Matrix: Water

Analysis Batch: 211616

Client Sample ID: CH-CCR-M46-0520

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	3.2	M1 R13	20.0	23.5	R13	mg/L		102	90 - 110	69	20
Total Organic Carbon - Duplicates	3.2	R4 M1	20.0	23.5	R4	mg/L		102	90 - 110	69	20
Total Organic Carbon - Quad	3.2	R4 M1	20.0	23.5	R4	mg/L		102	90 - 110	69	20

Lab Sample ID: MB 440-610673/6

Matrix: Water

Analysis Batch: 610673

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	mg/L			05/29/20 18:24	1

Lab Sample ID: LCS 440-610673/5

Matrix: Water

Analysis Batch: 610673

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	10.0	9.51		mg/L		95	85 - 115		

Lab Sample ID: 680-184236-C-1 MS

Matrix: Water

Analysis Batch: 610673

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	22		5.00	27.7	M3	mg/L		110	85 - 115		

Lab Sample ID: 680-184236-C-1 MSD

Matrix: Water

Analysis Batch: 610673

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	22		5.00	27.5	M3	mg/L		106	85 - 115	1	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: SM 5310B - Organic Carbon, Dissolved (DOC)

Lab Sample ID: MB 280-497282/61

Matrix: Water

Analysis Batch: 497282

Client Sample ID: Method Blank

Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	ND		1.0	mg/L			06/03/20 07:41	1
Dissolved Organic Carbon - Duplicate	ND		1.0	mg/L			06/03/20 07:41	1

Lab Sample ID: LCS 280-497282/60

Matrix: Water

Analysis Batch: 497282

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	25.0	27.3		mg/L		109	88 - 112
Dissolved Organic Carbon - Duplicate	25.0	27.1		mg/L		108	88 - 112

Lab Sample ID: 550-141925-5 MS

Matrix: Water

Analysis Batch: 497282

Client Sample ID: CH-CCR-M50A-0520

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	2.9	M1 V1	25.0	30.7	V1	mg/L		111	88 - 112
Dissolved Organic Carbon - Duplicate	2.9	M1 V1	25.0	30.4	V1	mg/L		110	88 - 112

Lab Sample ID: 550-141925-5 MSD

Matrix: Water

Analysis Batch: 497282

Client Sample ID: CH-CCR-M50A-0520

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	2.9	M1 V1	25.0	31.3	M1 V1	mg/L		113	88 - 112	2	15
Dissolved Organic Carbon - Duplicate	2.9	M1 V1	25.0	31.1	M1 V1	mg/L		113	88 - 112	2	15

Lab Sample ID: MB 280-497612/4

Matrix: Water

Analysis Batch: 497612

Client Sample ID: Method Blank

Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	ND		1.0	mg/L			06/04/20 16:46	1
Dissolved Organic Carbon - Duplicate	ND		1.0	mg/L			06/04/20 16:46	1

Lab Sample ID: LCS 280-497612/3

Matrix: Water

Analysis Batch: 497612

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	25.0	25.6		mg/L		102	88 - 112
Dissolved Organic Carbon - Duplicate	25.0	25.2		mg/L		101	88 - 112

QC Sample Results

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method: SM 5310B - Organic Carbon, Dissolved (DOC) (Continued)

Lab Sample ID: 550-141925-B-9 MS

Matrix: Water

Analysis Batch: 497612

Client Sample ID: 550-141925-B-9 MS

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	5.0	H1	25.0	30.5		mg/L		102	88 - 112
Dissolved Organic Carbon - Duplicate	4.9	H1	25.0	30.0		mg/L		100	88 - 112

Lab Sample ID: 550-141925-B-9 MSD

Matrix: Water

Analysis Batch: 497612

Client Sample ID: 550-141925-B-9 MSD

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	5.0	H1	25.0	30.5		mg/L		102	88 - 112	0	15
Dissolved Organic Carbon - Duplicate	4.9	H1	25.0	30.0		mg/L		100	88 - 112	0	15

Lab Sample ID: MB 440-610686/6

Matrix: Water

Analysis Batch: 610686

Client Sample ID: Method Blank

Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	ND		1.0	mg/L			05/30/20 06:42	1

Lab Sample ID: LCS 440-610686/5

Matrix: Water

Analysis Batch: 610686

Client Sample ID: Lab Control Sample

Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	10.0	9.77		mg/L		98	85 - 115

Lab Sample ID: LCSD 440-610686/7

Matrix: Water

Analysis Batch: 610686

Client Sample ID: Lab Control Sample Dup

Prep Type: Dissolved

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dissolved Organic Carbon	10.0	10.1		mg/L		101	85 - 115	4	20

Lab Sample ID: 550-141925-25 DU

Matrix: Water

Analysis Batch: 610686

Client Sample ID: CH-CCR-W309-0520

Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Dissolved Organic Carbon	ND		ND		mg/L		NC	20

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

HPLC/IC

Analysis Batch: 210077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	300.0	
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	300.0	
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	300.0	
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	300.0	
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	300.0	
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	300.0	
MB 550-210077/2	Method Blank	Total/NA	Water	300.0	
LCS 550-210077/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-210077/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-141925-2 MS	CH-CCR-M46-0520	Total/NA	Water	300.0	
550-141925-2 MS	CH-CCR-M46-0520	Total/NA	Water	300.0	
550-141925-2 MSD	CH-CCR-M46-0520	Total/NA	Water	300.0	
550-141925-2 MSD	CH-CCR-M46-0520	Total/NA	Water	300.0	

Analysis Batch: 210078

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-1	CH-CCR-M44D-0520	Total/NA	Water	300.0	
550-141925-1	CH-CCR-M44D-0520	Total/NA	Water	300.0	
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	300.0	
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	300.0	
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	300.0	
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	300.0	
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	300.0	
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	300.0	
MB 550-210078/2	Method Blank	Total/NA	Water	300.0	
LCS 550-210078/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-210078/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-141924-A-4 MS ^100	Matrix Spike	Total/NA	Water	300.0	
550-141924-A-4 MSD ^100	Matrix Spike Duplicate	Total/NA	Water	300.0	
550-141924-B-4 MS ^2	Matrix Spike	Total/NA	Water	300.0	
550-141924-B-4 MSD ^2	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 210201

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	300.0	
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	300.0	
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	300.0	
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	300.0	
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	300.0	
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	300.0	
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	300.0	
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	300.0	
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	300.0	
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	300.0	
550-141925-23	CH-TANNERS-0520	Total/NA	Water	300.0	
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	300.0	
MB 550-210201/2	Method Blank	Total/NA	Water	300.0	
LCS 550-210201/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-210201/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-141925-2 MS	CH-CCR-M46-0520	Total/NA	Water	300.0	
550-141925-2 MSD	CH-CCR-M46-0520	Total/NA	Water	300.0	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

HPLC/IC

Analysis Batch: 210424

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	300.0	
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	300.0	
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	300.0	
550-141925-18	CH-CCR-W125-0520	Total/NA	Water	300.0	
550-141925-18	CH-CCR-W125-0520	Total/NA	Water	300.0	
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	300.0	
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	300.0	
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	300.0	
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	300.0	
550-141925-23	CH-TANNERS-0520	Total/NA	Water	300.0	
550-141925-23	CH-TANNERS-0520	Total/NA	Water	300.0	
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	300.0	
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	300.0	
MB 550-210424/2	Method Blank	Total/NA	Water	300.0	
LCS 550-210424/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-210424/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-141925-14 MS	CH-CCR-M67-0520	Total/NA	Water	300.0	
550-141925-14 MSD	CH-CCR-M67-0520	Total/NA	Water	300.0	
550-142112-A-3 MS	Matrix Spike	Total/NA	Water	300.0	
550-142112-A-3 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 210611

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	300.0	
MB 550-210611/2	Method Blank	Total/NA	Water	300.0	
LCS 550-210611/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-210611/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-141925-14 MS	CH-CCR-M67-0520	Total/NA	Water	300.0	
550-141925-14 MSD	CH-CCR-M67-0520	Total/NA	Water	300.0	

Metals

Prep Batch: 209972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-1	CH-CCR-M44D-0520	Total/NA	Water	200.7	
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	200.7	
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	200.7	
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	200.7	
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	200.7	
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	200.7	
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	200.7	
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	200.7	
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	200.7	
550-141925-18	CH-CCR-W125-0520	Total/NA	Water	200.7	
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	200.7	
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	200.7	
550-141925-23	CH-TANNERS-0520	Total/NA	Water	200.7	
MB 550-209972/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-209972/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-209972/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-141925-2 MS	CH-CCR-M46-0520	Total/NA	Water	200.7	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Metals (Continued)

Prep Batch: 209972 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-2 MSD	CH-CCR-M46-0520	Total/NA	Water	200.7	

Prep Batch: 209973

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-3	CH-CCR-M46-0520	Dissolved	Water	200.7	
550-141925-5	CH-CCR-M50A-0520	Dissolved	Water	200.7	
550-141925-7	CH-CCR-M51A-0520	Dissolved	Water	200.7	
550-141925-9	CH-CCR-M64-0520	Dissolved	Water	200.7	
550-141925-11	CH-CCR-M65-0520	Dissolved	Water	200.7	
550-141925-13	CH-CCR-M66-0520	Dissolved	Water	200.7	
550-141925-15	CH-CCR-M67-0520	Dissolved	Water	200.7	
550-141925-17	CH-CCR-W123-0520	Dissolved	Water	200.7	
550-141925-20	CH-CCR-W126-0520	Dissolved	Water	200.7	
550-141925-22	CH-CCR-FD05-0520	Dissolved	Water	200.7	
MB 550-209973/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-209973/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-209973/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-141925-3 MS	CH-CCR-M46-0520	Dissolved	Water	200.7	
550-141925-3 MSD	CH-CCR-M46-0520	Dissolved	Water	200.7	

Filtration Batch: 210011

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141869-A-2-C MS	Matrix Spike	Dissolved	Water	Filtration	
550-141869-A-2-D MSD	Matrix Spike Duplicate	Dissolved	Water	Filtration	

Prep Batch: 210012

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-3	CH-CCR-M46-0520	Dissolved	Water	200.8	
550-141925-5	CH-CCR-M50A-0520	Dissolved	Water	200.8	
550-141925-7	CH-CCR-M51A-0520	Dissolved	Water	200.8	
550-141925-9	CH-CCR-M64-0520	Dissolved	Water	200.8	
550-141925-11	CH-CCR-M65-0520	Dissolved	Water	200.8	
550-141925-13	CH-CCR-M66-0520	Dissolved	Water	200.8	
550-141925-15	CH-CCR-M67-0520	Dissolved	Water	200.8	
550-141925-17	CH-CCR-W123-0520	Dissolved	Water	200.8	
550-141925-20	CH-CCR-W126-0520	Dissolved	Water	200.8	
550-141925-22	CH-CCR-FD05-0520	Dissolved	Water	200.8	
MB 550-210012/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-210012/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-210012/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-141925-5 MS	CH-CCR-M50A-0520	Dissolved	Water	200.8	
550-141925-5 MSD	CH-CCR-M50A-0520	Dissolved	Water	200.8	

Prep Batch: 210014

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	200.8	
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	200.8	
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	200.8	
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	200.8	
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	200.8	
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	200.8	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Metals (Continued)

Prep Batch: 210014 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	200.8	
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	200.8	
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	200.8	
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	200.8	
550-141925-23	CH-TANNERS-0520	Total/NA	Water	200.8	
MB 550-210014/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-210014/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-210014/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-141925-4 MS	CH-CCR-M50A-0520	Total/NA	Water	200.8	
550-141925-4 MSD	CH-CCR-M50A-0520	Total/NA	Water	200.8	

Analysis Batch: 210084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-5	CH-CCR-M50A-0520	Dissolved	Water	200.8 LL	210012
550-141925-7	CH-CCR-M51A-0520	Dissolved	Water	200.8 LL	210012
550-141925-11	CH-CCR-M65-0520	Dissolved	Water	200.8 LL	210012
550-141925-13	CH-CCR-M66-0520	Dissolved	Water	200.8 LL	210012
MB 550-210012/1-A	Method Blank	Total/NA	Water	200.8 LL	210012
LCS 550-210012/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	210012
LCSD 550-210012/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	210012
550-141925-5 MS	CH-CCR-M50A-0520	Dissolved	Water	200.8 LL	210012
550-141925-5 MSD	CH-CCR-M50A-0520	Dissolved	Water	200.8 LL	210012

Analysis Batch: 210085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	200.8 LL	210014
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	200.8 LL	210014
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	200.8 LL	210014
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	200.8 LL	210014
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	200.8 LL	210014
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	200.8 LL	210014
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	200.8 LL	210014
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	200.8 LL	210014
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	200.8 LL	210014
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	200.8 LL	210014
550-141925-23	CH-TANNERS-0520	Total/NA	Water	200.8 LL	210014
MB 550-210014/1-A	Method Blank	Total/NA	Water	200.8 LL	210014
LCS 550-210014/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	210014
LCSD 550-210014/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	210014
550-141925-4 MS	CH-CCR-M50A-0520	Total/NA	Water	200.8 LL	210014
550-141925-4 MSD	CH-CCR-M50A-0520	Total/NA	Water	200.8 LL	210014

Prep Batch: 210126

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-25	CH-CCR-W309-0520	Dissolved	Water	200.8	
MB 550-210126/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-210126/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-210126/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-141925-25 MS	CH-CCR-W309-0520	Dissolved	Water	200.8	
550-141925-25 MSD	CH-CCR-W309-0520	Dissolved	Water	200.8	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Metals

Prep Batch: 210130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-25	CH-CCR-W309-0520	Dissolved	Water	200.7	
MB 550-210130/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-210130/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-210130/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-141869-A-2-C MS	Matrix Spike	Dissolved	Water	200.7	210011
550-141869-A-2-D MSD	Matrix Spike Duplicate	Dissolved	Water	200.7	210011

Prep Batch: 210154

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	200.7	
MB 550-210154/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-210154/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-210154/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-141998-C-1-A MS	Matrix Spike	Dissolved	Water	200.7	
550-141998-C-1-B MSD	Matrix Spike Duplicate	Dissolved	Water	200.7	

Prep Batch: 210155

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	200.8	
MB 550-210155/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-210155/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-210155/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-141998-C-2-B MS	Matrix Spike	Dissolved	Water	200.8	
550-141998-C-2-C MSD	Matrix Spike Duplicate	Dissolved	Water	200.8	

Analysis Batch: 210296

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	200.8 LL	210155
MB 550-210155/1-A	Method Blank	Total/NA	Water	200.8 LL	210155
LCS 550-210155/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	210155
LCSD 550-210155/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	210155
550-141998-C-2-B MS	Matrix Spike	Dissolved	Water	200.8 LL	210155
550-141998-C-2-C MSD	Matrix Spike Duplicate	Dissolved	Water	200.8 LL	210155

Analysis Batch: 210302

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	200.8 LL	210155
MB 550-210155/1-A	Method Blank	Total/NA	Water	200.8 LL	210155
LCS 550-210155/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	210155
LCSD 550-210155/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	210155
550-141998-C-2-B MS	Matrix Spike	Dissolved	Water	200.8 LL	210155
550-141998-C-2-C MSD	Matrix Spike Duplicate	Dissolved	Water	200.8 LL	210155

Analysis Batch: 210304

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-25	CH-CCR-W309-0520	Dissolved	Water	200.8 LL	210126
MB 550-210126/1-A	Method Blank	Total/NA	Water	200.8 LL	210126
LCS 550-210126/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	210126
LCSD 550-210126/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	210126
550-141925-25 MS	CH-CCR-W309-0520	Dissolved	Water	200.8 LL	210126
550-141925-25 MSD	CH-CCR-W309-0520	Dissolved	Water	200.8 LL	210126

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Metals

Analysis Batch: 210331

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	200.7 Rev 4.4	210154
MB 550-210154/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	210154
LCS 550-210154/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	210154
LCSD 550-210154/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	210154
550-141998-C-1-A MS	Matrix Spike	Dissolved	Water	200.7 Rev 4.4	210154
550-141998-C-1-B MSD	Matrix Spike Duplicate	Dissolved	Water	200.7 Rev 4.4	210154

Analysis Batch: 210333

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-25	CH-CCR-W309-0520	Dissolved	Water	200.7 Rev 4.4	210130
MB 550-210130/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	210130
LCS 550-210130/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	210130
LCSD 550-210130/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	210130
550-141869-A-2-C MS	Matrix Spike	Dissolved	Water	200.7 Rev 4.4	210130
550-141869-A-2-D MSD	Matrix Spike Duplicate	Dissolved	Water	200.7 Rev 4.4	210130

Analysis Batch: 210442

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	200.7 Rev 4.4	210154
MB 550-210154/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	210154
LCS 550-210154/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	210154
LCSD 550-210154/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	210154
550-141998-C-1-A MS	Matrix Spike	Dissolved	Water	200.7 Rev 4.4	210154
550-141998-C-1-B MSD	Matrix Spike Duplicate	Dissolved	Water	200.7 Rev 4.4	210154

Analysis Batch: 210622

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-1	CH-CCR-M44D-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-18	CH-CCR-W125-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-23	CH-TANNERS-0520	Total/NA	Water	200.7 Rev 4.4	209972
MB 550-209972/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	209972
LCS 550-209972/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	209972
LCSD 550-209972/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-2 MS	CH-CCR-M46-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-2 MSD	CH-CCR-M46-0520	Total/NA	Water	200.7 Rev 4.4	209972

Prep Batch: 210734

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	200.8	
MB 550-210734/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-210734/2-A	Lab Control Sample	Total/NA	Water	200.8	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Metals (Continued)

Prep Batch: 210734 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 550-210734/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-141890-B-1-E MS	Matrix Spike	Total/NA	Water	200.8	
550-141890-B-1-F MSD	Matrix Spike Duplicate	Total/NA	Water	200.8	

Analysis Batch: 210755

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	200.7 Rev 4.4	210154

Analysis Batch: 210895

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	200.8 LL	210734
MB 550-210734/1-A	Method Blank	Total/NA	Water	200.8 LL	210734
LCS 550-210734/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	210734
LCSD 550-210734/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	210734
550-141890-B-1-E MS	Matrix Spike	Total/NA	Water	200.8 LL	210734
550-141890-B-1-F MSD	Matrix Spike Duplicate	Total/NA	Water	200.8 LL	210734

Analysis Batch: 210942

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	200.8 LL	210014
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	200.8 LL	210014
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	200.8 LL	210014
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	200.8 LL	210014
MB 550-210014/1-A	Method Blank	Total/NA	Water	200.8 LL	210014
LCS 550-210014/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	210014
LCSD 550-210014/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	210014
550-141925-4 MS	CH-CCR-M50A-0520	Total/NA	Water	200.8 LL	210014
550-141925-4 MSD	CH-CCR-M50A-0520	Total/NA	Water	200.8 LL	210014

Prep Batch: 210947

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	200.8	
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	200.8	
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	200.8	
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	200.8	
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	200.8	
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	200.8	
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	200.8	
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	200.8	
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	200.8	
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	200.8	
550-141925-23	CH-TANNERS-0520	Total/NA	Water	200.8	
MB 550-210947/1-A	Method Blank	Total/NA	Water	200.8	
LCS 550-210947/2-A	Lab Control Sample	Total/NA	Water	200.8	
LCSD 550-210947/3-A	Lab Control Sample Dup	Total/NA	Water	200.8	
550-141925-21 MS	CH-CCR-FD05-0520	Total/NA	Water	200.8	
550-141925-21 MSD	CH-CCR-FD05-0520	Total/NA	Water	200.8	

Analysis Batch: 210962

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	200.7 Rev 4.4	209972

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Metals (Continued)

Analysis Batch: 210962 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-23	CH-TANNERS-0520	Total/NA	Water	200.7 Rev 4.4	209972
MB 550-209972/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	209972
LCS 550-209972/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	209972
LCSD 550-209972/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-2 MS	CH-CCR-M46-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-2 MSD	CH-CCR-M46-0520	Total/NA	Water	200.7 Rev 4.4	209972

Analysis Batch: 211031

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-3	CH-CCR-M46-0520	Dissolved	Water	200.8 LL	210012
550-141925-9	CH-CCR-M64-0520	Dissolved	Water	200.8 LL	210012
550-141925-15	CH-CCR-M67-0520	Dissolved	Water	200.8 LL	210012
550-141925-17	CH-CCR-W123-0520	Dissolved	Water	200.8 LL	210012
550-141925-20	CH-CCR-W126-0520	Dissolved	Water	200.8 LL	210012
550-141925-22	CH-CCR-FD05-0520	Dissolved	Water	200.8 LL	210012

Analysis Batch: 211032

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	200.8 LL	210947
MB 550-210947/1-A	Method Blank	Total/NA	Water	200.8 LL	210947
LCS 550-210947/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	210947
LCSD 550-210947/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	210947
550-141925-21 MS	CH-CCR-FD05-0520	Total/NA	Water	200.8 LL	210947
550-141925-21 MSD	CH-CCR-FD05-0520	Total/NA	Water	200.8 LL	210947

Analysis Batch: 211052

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-3	CH-CCR-M46-0520	Dissolved	Water	200.7 Rev 4.4	209973
550-141925-5	CH-CCR-M50A-0520	Dissolved	Water	200.7 Rev 4.4	209973
550-141925-7	CH-CCR-M51A-0520	Dissolved	Water	200.7 Rev 4.4	209973
550-141925-9	CH-CCR-M64-0520	Dissolved	Water	200.7 Rev 4.4	209973
550-141925-11	CH-CCR-M65-0520	Dissolved	Water	200.7 Rev 4.4	209973
550-141925-13	CH-CCR-M66-0520	Dissolved	Water	200.7 Rev 4.4	209973
550-141925-15	CH-CCR-M67-0520	Dissolved	Water	200.7 Rev 4.4	209973
550-141925-17	CH-CCR-W123-0520	Dissolved	Water	200.7 Rev 4.4	209973
550-141925-20	CH-CCR-W126-0520	Dissolved	Water	200.7 Rev 4.4	209973
550-141925-22	CH-CCR-FD05-0520	Dissolved	Water	200.7 Rev 4.4	209973
MB 550-209973/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	209973
LCS 550-209973/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	209973
LCSD 550-209973/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	209973
550-141925-3 MS	CH-CCR-M46-0520	Dissolved	Water	200.7 Rev 4.4	209973
550-141925-3 MSD	CH-CCR-M46-0520	Dissolved	Water	200.7 Rev 4.4	209973

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Metals

Analysis Batch: 211160

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	200.7 Rev 4.4	209972

Analysis Batch: 211270

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-1	CH-CCR-M44D-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-18	CH-CCR-W125-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-23	CH-TANNERS-0520	Total/NA	Water	200.7 Rev 4.4	209972
MB 550-209972/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	209972
LCS 550-209972/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	209972
LCSD 550-209972/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-2 MS	CH-CCR-M46-0520	Total/NA	Water	200.7 Rev 4.4	209972
550-141925-2 MSD	CH-CCR-M46-0520	Total/NA	Water	200.7 Rev 4.4	209972

Analysis Batch: 211332

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	200.8 LL	210947
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	200.8 LL	210947
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	200.8 LL	210947
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	200.8 LL	210947
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	200.8 LL	210947
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	200.8 LL	210947
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	200.8 LL	210947
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	200.8 LL	210947
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	200.8 LL	210947
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	200.8 LL	210947
550-141925-23	CH-TANNERS-0520	Total/NA	Water	200.8 LL	210947
MB 550-210947/1-A	Method Blank	Total/NA	Water	200.8 LL	210947
LCS 550-210947/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	210947
LCSD 550-210947/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	210947
550-141925-21 MS	CH-CCR-FD05-0520	Total/NA	Water	200.8 LL	210947
550-141925-21 MSD	CH-CCR-FD05-0520	Total/NA	Water	200.8 LL	210947

Analysis Batch: 211444

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	200.8 LL	210947
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	200.8 LL	210947
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	200.8 LL	210947
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	200.8 LL	210947
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	200.8 LL	210947
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	200.8 LL	210947
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	200.8 LL	210947
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	200.8 LL	210947

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Metals (Continued)

Analysis Batch: 211444 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 550-210947/1-A	Method Blank	Total/NA	Water	200.8 LL	210947
LCS 550-210947/2-A	Lab Control Sample	Total/NA	Water	200.8 LL	210947
LCSD 550-210947/3-A	Lab Control Sample Dup	Total/NA	Water	200.8 LL	210947
550-141925-21 MS	CH-CCR-FD05-0520	Total/NA	Water	200.8 LL	210947
550-141925-21 MSD	CH-CCR-FD05-0520	Total/NA	Water	200.8 LL	210947

General Chemistry

Analysis Batch: 209967

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-1	CH-CCR-M44D-0520	Total/NA	Water	SM 2320B	
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	SM 2320B	
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	SM 2320B	
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	SM 2320B	
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	SM 2320B	
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	SM 2320B	
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	SM 2320B	
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	SM 2320B	
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	SM 2320B	
550-141925-18	CH-CCR-W125-0520	Total/NA	Water	SM 2320B	
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	SM 2320B	
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	SM 2320B	
550-141925-23	CH-TANNERS-0520	Total/NA	Water	SM 2320B	
MB 550-209967/34	Method Blank	Total/NA	Water	SM 2320B	
LCS 550-209967/33	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 550-209967/46	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
550-141925-2 DU	CH-CCR-M46-0520	Total/NA	Water	SM 2320B	
550-141925-19 DU	CH-CCR-W126-0520	Total/NA	Water	SM 2320B	

Analysis Batch: 210029

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	SM 2540C	
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	SM 2540C	
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	SM 2540C	
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	SM 2540C	
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	SM 2540C	
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	SM 2540C	
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	SM 2540C	
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	SM 2540C	
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	SM 2540C	
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	SM 2540C	
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	SM 2540C	
MB 550-210029/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-210029/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-210029/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-141924-A-4 DU	Duplicate	Total/NA	Water	SM 2540C	
550-141925-2 DU	CH-CCR-M46-0520	Total/NA	Water	SM 2540C	

Analysis Batch: 210095

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	SM 4500 NH3 D	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

General Chemistry (Continued)

Analysis Batch: 210095 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	SM 4500 NH3 D	
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	SM 4500 NH3 D	
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	SM 4500 NH3 D	
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	SM 4500 NH3 D	
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	SM 4500 NH3 D	
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	SM 4500 NH3 D	
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	SM 4500 NH3 D	
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	SM 4500 NH3 D	
MB 550-210095/4	Method Blank	Total/NA	Water	SM 4500 NH3 D	
LCS 550-210095/5	Lab Control Sample	Total/NA	Water	SM 4500 NH3 D	
LCSD 550-210095/6	Lab Control Sample Dup	Total/NA	Water	SM 4500 NH3 D	
550-141710-F-1 MS	Matrix Spike	Total/NA	Water	SM 4500 NH3 D	
550-141710-F-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 NH3 D	

Analysis Batch: 210096

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	SM 5310B	
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	SM 5310B	
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	SM 5310B	
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	SM 5310B	
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	SM 5310B	
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	SM 5310B	
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	SM 5310B	
MB 550-210096/5	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-210096/6	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-210096/7	Lab Control Sample Dup	Total/NA	Water	SM 5310B	

Analysis Batch: 210140

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-23	CH-TANNERS-0520	Total/NA	Water	SM 2540C	
MB 550-210140/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-210140/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-210140/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-141762-E-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 210520

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	SM 2320B	
MB 550-210520/6	Method Blank	Total/NA	Water	SM 2320B	
LCS 550-210520/5	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 550-210520/19	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
550-141990-E-1 DU	Duplicate	Total/NA	Water	SM 2320B	

Analysis Batch: 210663

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	SM 4500 NH3 D	
550-141925-23	CH-TANNERS-0520	Total/NA	Water	SM 4500 NH3 D	
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	SM 4500 NH3 D	
MB 550-210663/33	Method Blank	Total/NA	Water	SM 4500 NH3 D	
MB 550-210663/4	Method Blank	Total/NA	Water	SM 4500 NH3 D	
LCS 550-210663/34	Lab Control Sample	Total/NA	Water	SM 4500 NH3 D	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

General Chemistry (Continued)

Analysis Batch: 210663 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 550-210663/5	Lab Control Sample	Total/NA	Water	SM 4500 NH3 D	
LCSD 550-210663/35	Lab Control Sample Dup	Total/NA	Water	SM 4500 NH3 D	
LCSD 550-210663/6	Lab Control Sample Dup	Total/NA	Water	SM 4500 NH3 D	
550-141925-2 MS	CH-CCR-M46-0520	Total/NA	Water	SM 4500 NH3 D	
550-141925-2 MSD	CH-CCR-M46-0520	Total/NA	Water	SM 4500 NH3 D	

Analysis Batch: 210921

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	SM 4500 H+ B	
550-141925-4	CH-CCR-M50A-0520	Total/NA	Water	SM 4500 H+ B	
550-141925-6	CH-CCR-M51A-0520	Total/NA	Water	SM 4500 H+ B	
550-141925-8	CH-CCR-M64-0520	Total/NA	Water	SM 4500 H+ B	
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	SM 4500 H+ B	
550-141925-12	CH-CCR-M66-0520	Total/NA	Water	SM 4500 H+ B	
550-141925-14	CH-CCR-M67-0520	Total/NA	Water	SM 4500 H+ B	
550-141925-16	CH-CCR-W123-0520	Total/NA	Water	SM 4500 H+ B	
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	SM 4500 H+ B	
550-141925-21	CH-CCR-FD05-0520	Total/NA	Water	SM 4500 H+ B	
550-141925-23	CH-TANNERS-0520	Total/NA	Water	SM 4500 H+ B	
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-210921/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-210921/13	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-210921/24	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
550-141925-2 DU	CH-CCR-M46-0520	Total/NA	Water	SM 4500 H+ B	
550-141925-21 DU	CH-CCR-FD05-0520	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 211616

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-2	CH-CCR-M46-0520	Total/NA	Water	SM 5310B	
550-141925-10	CH-CCR-M65-0520	Total/NA	Water	SM 5310B	
550-141925-19	CH-CCR-W126-0520	Total/NA	Water	SM 5310B	
550-141925-23	CH-TANNERS-0520	Total/NA	Water	SM 5310B	
MB 550-211616/16	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-211616/17	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-211616/18	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-141925-2 MS	CH-CCR-M46-0520	Total/NA	Water	SM 5310B	
550-141925-2 MSD	CH-CCR-M46-0520	Total/NA	Water	SM 5310B	

Analysis Batch: 497282

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-3	CH-CCR-M46-0520	Dissolved	Water	SM 5310B	
550-141925-5	CH-CCR-M50A-0520	Dissolved	Water	SM 5310B	
550-141925-7	CH-CCR-M51A-0520	Dissolved	Water	SM 5310B	
550-141925-9	CH-CCR-M64-0520	Dissolved	Water	SM 5310B	
550-141925-17	CH-CCR-W123-0520	Dissolved	Water	SM 5310B	
550-141925-22	CH-CCR-FD05-0520	Dissolved	Water	SM 5310B	
MB 280-497282/61	Method Blank	Dissolved	Water	SM 5310B	
LCS 280-497282/60	Lab Control Sample	Dissolved	Water	SM 5310B	
550-141925-5 MS	CH-CCR-M50A-0520	Dissolved	Water	SM 5310B	
550-141925-5 MSD	CH-CCR-M50A-0520	Dissolved	Water	SM 5310B	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

General Chemistry

Analysis Batch: 497612

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-11	CH-CCR-M65-0520	Dissolved	Water	SM 5310B	
550-141925-13	CH-CCR-M66-0520	Dissolved	Water	SM 5310B	
550-141925-15	CH-CCR-M67-0520	Dissolved	Water	SM 5310B	
550-141925-20	CH-CCR-W126-0520	Dissolved	Water	SM 5310B	
MB 280-497612/4	Method Blank	Dissolved	Water	SM 5310B	
LCS 280-497612/3	Lab Control Sample	Dissolved	Water	SM 5310B	
550-141925-B-9 MS	550-141925-B-9 MS	Dissolved	Water	SM 5310B	
550-141925-B-9 MSD	550-141925-B-9 MSD	Dissolved	Water	SM 5310B	

Analysis Batch: 610673

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-24	CH-CCR-W309-0520	Total/NA	Water	SM 5310B	
MB 440-610673/6	Method Blank	Total/NA	Water	SM 5310B	
LCS 440-610673/5	Lab Control Sample	Total/NA	Water	SM 5310B	
680-184236-C-1 MS	Matrix Spike	Total/NA	Water	SM 5310B	
680-184236-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	

Analysis Batch: 610686

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-141925-25	CH-CCR-W309-0520	Dissolved	Water	SM 5310B	
MB 440-610686/6	Method Blank	Dissolved	Water	SM 5310B	
LCS 440-610686/5	Lab Control Sample	Dissolved	Water	SM 5310B	
LCSD 440-610686/7	Lab Control Sample Dup	Dissolved	Water	SM 5310B	
550-141925-25 DU	CH-CCR-W309-0520	Dissolved	Water	SM 5310B	

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M44D-0520

Lab Sample ID: 550-141925-1

Date Collected: 05/07/20 09:35

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	210078	05/11/20 23:59	RDC	TAL PHX
Total/NA	Analysis	300.0		200	210078	05/12/20 00:26	RDC	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210622	05/19/20 00:19	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	211270	05/28/20 03:16	SRA	TAL PHX
Total/NA	Analysis	SM 2320B		1	209967	05/09/20 21:02	DGS	TAL PHX

Client Sample ID: CH-CCR-M46-0520

Lab Sample ID: 550-141925-2

Date Collected: 05/05/20 10:01

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	210077	05/11/20 18:57	RDC	TAL PHX
Total/NA	Analysis	300.0		200	210077	05/11/20 19:52	RDC	TAL PHX
Total/NA	Analysis	300.0		5	210201	05/12/20 17:04	RDC	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210622	05/19/20 00:03	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210962	05/21/20 18:36	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	211270	05/28/20 03:12	SRA	TAL PHX
Total/NA	Prep	200.8			210014	05/11/20 08:57	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	210085	05/11/20 20:37	ARE	TAL PHX
Total/NA	Prep	200.8			210014	05/11/20 08:57	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	210942	05/21/20 21:42	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211332	05/28/20 00:30	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211444	05/28/20 23:06	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	209967	05/09/20 20:45	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	210029		YET	TAL PHX
					(Start)	05/11/20 11:20		
					(End)	05/12/20 10:15		
Total/NA	Analysis	SM 4500 H+ B		1	210921	05/21/20 16:30	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	210663	05/19/20 00:44	KJS	TAL PHX
Total/NA	Analysis	SM 5310B		1	211616	06/01/20 15:16	DGS	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M46-0520

Lab Sample ID: 550-141925-3

Date Collected: 05/05/20 10:01

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			209973	05/11/20 05:21	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	211052	05/22/20 23:51	SRA	TAL PHX
Dissolved	Prep	200.8			210012	05/11/20 08:45	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		1	211031	05/22/20 18:48	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	497282	06/03/20 09:37	JMB	TAL DEN

Client Sample ID: CH-CCR-M50A-0520

Lab Sample ID: 550-141925-4

Date Collected: 05/06/20 13:46

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	210078	05/12/20 00:53	RDC	TAL PHX
Total/NA	Analysis	300.0		200	210078	05/12/20 01:21	RDC	TAL PHX
Total/NA	Analysis	300.0		5	210201	05/12/20 18:54	RDC	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210622	05/19/20 00:23	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210962	05/21/20 18:44	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	211270	05/28/20 03:25	SRA	TAL PHX
Total/NA	Prep	200.8			210014	05/11/20 08:57	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	210085	05/11/20 20:35	ARE	TAL PHX
Total/NA	Prep	200.8			210014	05/11/20 08:57	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	210942	05/21/20 21:40	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211332	05/28/20 00:32	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	209967	05/09/20 21:10	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	210029		YET	TAL PHX
					(Start)	05/11/20 11:20		
					(End)	05/12/20 10:15		
Total/NA	Analysis	SM 4500 H+ B		1	210921	05/21/20 16:30	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	210095	05/11/20 22:07	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	210096	05/11/20 19:17	DGS	TAL PHX

Client Sample ID: CH-CCR-M50A-0520

Lab Sample ID: 550-141925-5

Date Collected: 05/06/20 13:46

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			209973	05/11/20 05:21	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	211052	05/22/20 23:55	SRA	TAL PHX
Dissolved	Prep	200.8			210012	05/11/20 08:45	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		1	210084	05/11/20 19:59	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	497282	06/03/20 08:44	JMB	TAL DEN

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M51A-0520

Lab Sample ID: 550-141925-6

Date Collected: 05/06/20 15:15

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	210078	05/12/20 01:48	RDC	TAL PHX
Total/NA	Analysis	300.0		200	210078	05/12/20 02:16	RDC	TAL PHX
Total/NA	Analysis	300.0		5	210201	05/12/20 19:21	RDC	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210622	05/19/20 00:27	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210962	05/21/20 18:48	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	211270	05/28/20 03:29	SRA	TAL PHX
Total/NA	Prep	200.8			210014	05/11/20 08:57	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	210085	05/11/20 20:39	ARE	TAL PHX
Total/NA	Prep	200.8			210014	05/11/20 08:57	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	210942	05/21/20 21:50	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211332	05/28/20 00:34	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	209967	05/09/20 21:19	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	210029	(Start) 05/11/20 11:20 (End) 05/12/20 10:15	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	210921	05/21/20 16:30	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	210095	05/11/20 22:16	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	210096	05/11/20 19:35	DGS	TAL PHX

Client Sample ID: CH-CCR-M51A-0520

Lab Sample ID: 550-141925-7

Date Collected: 05/06/20 15:15

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			209973	05/11/20 05:21	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	211052	05/22/20 23:59	SRA	TAL PHX
Dissolved	Prep	200.8			210012	05/11/20 08:45	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		1	210084	05/11/20 20:03	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	497282	06/03/20 09:52	JMB	TAL DEN

Client Sample ID: CH-CCR-M64-0520

Lab Sample ID: 550-141925-8

Date Collected: 05/06/20 08:13

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	210078	05/12/20 03:38	RDC	TAL PHX
Total/NA	Analysis	300.0		200	210078	05/12/20 04:05	RDC	TAL PHX
Total/NA	Analysis	300.0		5	210201	05/12/20 19:49	RDC	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210622	05/19/20 00:31	SRA	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M64-0520

Lab Sample ID: 550-141925-8

Date Collected: 05/06/20 08:13

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210962	05/21/20 18:52	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	211270	05/28/20 03:33	SRA	TAL PHX
Total/NA	Prep	200.8			210014	05/11/20 08:57	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	210085	05/11/20 20:41	ARE	TAL PHX
Total/NA	Prep	200.8			210014	05/11/20 08:57	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	210942	05/21/20 21:46	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211332	05/28/20 00:36	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211444	05/29/20 14:56	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	209967	05/09/20 21:30	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	210029		YET	TAL PHX
					(Start)	05/11/20 11:20		
					(End)	05/12/20 10:15		
Total/NA	Analysis	SM 4500 H+ B		1	210921	05/21/20 16:30	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	210095	05/11/20 22:25	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	210096	05/11/20 19:53	DGS	TAL PHX

Client Sample ID: CH-CCR-M64-0520

Lab Sample ID: 550-141925-9

Date Collected: 05/06/20 08:13

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			209973	05/11/20 05:21	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	211052	05/23/20 00:03	SRA	TAL PHX
Dissolved	Prep	200.8			210012	05/11/20 08:45	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		1	211031	05/22/20 18:46	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	497282	06/03/20 10:11	JMB	TAL DEN

Client Sample ID: CH-CCR-M65-0520

Lab Sample ID: 550-141925-10

Date Collected: 05/05/20 08:16

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	210077	05/11/20 20:47	RDC	TAL PHX
Total/NA	Analysis	300.0		200	210077	05/11/20 21:05	RDC	TAL PHX
Total/NA	Analysis	300.0		5	210201	05/12/20 20:44	RDC	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210622	05/19/20 00:47	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210962	05/21/20 19:00	SRA	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M65-0520

Lab Sample ID: 550-141925-10

Date Collected: 05/05/20 08:16

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	211160	05/26/20 18:58	SRA	TAL PHX
Total/NA	Prep	200.8			210014	05/11/20 08:57	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	210085	05/11/20 20:43	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211332	05/28/20 00:39	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211444	05/29/20 14:58	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	209967	05/09/20 21:38	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	210029	(Start) 05/11/20 11:20 (End) 05/12/20 10:15	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	210921	05/21/20 16:30	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	210095	05/11/20 22:32	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	211616	06/01/20 15:52	DGS	TAL PHX

Client Sample ID: CH-CCR-M65-0520

Lab Sample ID: 550-141925-11

Date Collected: 05/05/20 08:16

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			209973	05/11/20 05:21	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	211052	05/23/20 00:07	SRA	TAL PHX
Dissolved	Prep	200.8			210012	05/11/20 08:45	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		1	210084	05/11/20 20:08	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	497612	06/04/20 18:53	JMB	TAL DEN

Client Sample ID: CH-CCR-M66-0520

Lab Sample ID: 550-141925-12

Date Collected: 05/05/20 12:46

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	210077	05/11/20 21:24	RDC	TAL PHX
Total/NA	Analysis	300.0		200	210077	05/11/20 21:42	RDC	TAL PHX
Total/NA	Analysis	300.0		5	210201	05/12/20 21:11	RDC	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210622	05/19/20 00:35	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210962	05/21/20 18:56	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	211160	05/26/20 18:54	SRA	TAL PHX
Total/NA	Prep	200.8			210014	05/11/20 08:57	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	210085	05/11/20 20:45	ARE	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M66-0520

Lab Sample ID: 550-141925-12

Date Collected: 05/05/20 12:46

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211332	05/28/20 00:41	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211444	05/29/20 15:00	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	209967	05/09/20 21:47	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	210029	(Start) 05/11/20 11:20 (End) 05/12/20 10:15	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	210921	05/21/20 16:30	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	210095	05/11/20 22:38	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	210096	05/11/20 20:21	DGS	TAL PHX

Client Sample ID: CH-CCR-M66-0520

Lab Sample ID: 550-141925-13

Date Collected: 05/05/20 12:46

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			209973	05/11/20 05:21	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	211052	05/23/20 00:11	SRA	TAL PHX
Dissolved	Prep	200.8			210012	05/11/20 08:45	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		1	210084	05/11/20 20:10	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	497612	06/04/20 19:07	JMB	TAL DEN

Client Sample ID: CH-CCR-M67-0520

Lab Sample ID: 550-141925-14

Date Collected: 05/05/20 11:22

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	210201	05/12/20 22:33	RDC	TAL PHX
Total/NA	Analysis	300.0		2	210424	05/14/20 23:39	RDC	TAL PHX
Total/NA	Analysis	300.0		200	210611	05/18/20 20:59	RDC	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210622	05/19/20 00:51	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210962	05/21/20 19:12	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	211160	05/26/20 19:02	SRA	TAL PHX
Total/NA	Prep	200.8			210014	05/11/20 08:57	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	210085	05/11/20 20:47	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211332	05/28/20 00:43	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211444	05/29/20 15:02	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	209967	05/09/20 21:55	DGS	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-M67-0520

Lab Sample ID: 550-141925-14

Date Collected: 05/05/20 11:22

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	210029		YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	210921	05/21/20 16:30	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	210095	05/11/20 22:47	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	210096	05/11/20 20:36	DGS	TAL PHX

Client Sample ID: CH-CCR-M67-0520

Lab Sample ID: 550-141925-15

Date Collected: 05/05/20 11:22

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			209973	05/11/20 05:21	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	211052	05/23/20 00:15	SRA	TAL PHX
Dissolved	Prep	200.8			210012	05/11/20 08:45	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		1	211031	05/22/20 18:50	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	497612	06/04/20 19:24	JMB	TAL DEN

Client Sample ID: CH-CCR-W123-0520

Lab Sample ID: 550-141925-16

Date Collected: 05/06/20 11:14

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	210201	05/12/20 23:28	RDC	TAL PHX
Total/NA	Analysis	300.0		2	210424	05/15/20 03:18	RDC	TAL PHX
Total/NA	Analysis	300.0		200	210424	05/15/20 03:45	RDC	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210622	05/19/20 00:55	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210962	05/21/20 19:16	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	211160	05/26/20 19:06	SRA	TAL PHX
Total/NA	Prep	200.8			210014	05/11/20 08:57	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	210085	05/11/20 20:49	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211332	05/28/20 00:45	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211444	05/29/20 15:04	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	209967	05/09/20 22:04	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	210029		YET	TAL PHX
					(Start)	05/11/20 11:20		
					(End)	05/12/20 10:15		
Total/NA	Analysis	SM 4500 H+ B		1	210921	05/21/20 16:30	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	210095	05/11/20 22:54	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	210096	05/11/20 20:57	DGS	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-W123-0520

Lab Sample ID: 550-141925-17

Date Collected: 05/06/20 11:14

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			209973	05/11/20 05:21	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	211052	05/23/20 00:19	SRA	TAL PHX
Dissolved	Prep	200.8			210012	05/11/20 08:45	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		1	211031	05/22/20 18:52	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	497282	06/03/20 11:18	JMB	TAL DEN

Client Sample ID: CH-CCR-W125-0520

Lab Sample ID: 550-141925-18

Date Collected: 05/06/20 12:45

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	210424	05/15/20 04:13	RDC	TAL PHX
Total/NA	Analysis	300.0		200	210424	05/15/20 04:40	RDC	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210622	05/19/20 00:59	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	211270	05/28/20 03:20	SRA	TAL PHX
Total/NA	Analysis	SM 2320B		1	209967	05/09/20 22:13	DGS	TAL PHX

Client Sample ID: CH-CCR-W126-0520

Lab Sample ID: 550-141925-19

Date Collected: 05/05/20 14:09

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	210201	05/12/20 23:55	RDC	TAL PHX
Total/NA	Analysis	300.0		2	210424	05/15/20 05:07	RDC	TAL PHX
Total/NA	Analysis	300.0		200	210424	05/15/20 05:35	RDC	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210622	05/19/20 01:03	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210962	05/21/20 19:24	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	211270	05/28/20 03:37	SRA	TAL PHX
Total/NA	Prep	200.8			210014	05/11/20 08:57	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	210085	05/11/20 20:55	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211332	05/28/20 00:47	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211444	05/29/20 15:06	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	209967	05/09/20 22:38	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	210029		YET	TAL PHX
					(Start)	05/11/20 11:20		
					(End)	05/12/20 10:15		
Total/NA	Analysis	SM 4500 H+ B		1	210921	05/21/20 16:30	MRR	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-W126-0520

Lab Sample ID: 550-141925-19

Date Collected: 05/05/20 14:09

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 NH3 D		1	210095	05/11/20 23:03	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	211616	06/01/20 16:03	DGS	TAL PHX

Client Sample ID: CH-CCR-W126-0520

Lab Sample ID: 550-141925-20

Date Collected: 05/05/20 14:09

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			209973	05/11/20 05:21	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	211052	05/23/20 00:23	SRA	TAL PHX
Dissolved	Prep	200.8			210012	05/11/20 08:45	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		1	211031	05/22/20 18:54	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	497612	06/04/20 20:26	JMB	TAL DEN

Client Sample ID: CH-CCR-FD05-0520

Lab Sample ID: 550-141925-21

Date Collected: 05/06/20 08:13

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	210201	05/13/20 00:23	RDC	TAL PHX
Total/NA	Analysis	300.0		2	210424	05/15/20 06:02	RDC	TAL PHX
Total/NA	Analysis	300.0		200	210424	05/15/20 06:30	RDC	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210622	05/19/20 01:07	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210962	05/21/20 19:28	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	211160	05/26/20 19:14	SRA	TAL PHX
Total/NA	Prep	200.8			210014	05/11/20 08:57	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	210085	05/11/20 20:57	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	211032	05/22/20 19:13	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211332	05/28/20 00:24	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211444	05/28/20 23:00	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	209967	05/09/20 22:57	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	210029		YET	TAL PHX
					(Start)	05/11/20 11:20		
					(End)	05/12/20 10:15		
Total/NA	Analysis	SM 4500 H+ B		1	210921	05/21/20 16:30	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	210095	05/11/20 23:12	DGS	TAL PHX
Total/NA	Analysis	SM 5310B		1	210096	05/11/20 21:31	DGS	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-FD05-0520

Lab Sample ID: 550-141925-22

Date Collected: 05/06/20 08:13

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			209973	05/11/20 05:21	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	211052	05/23/20 00:27	SRA	TAL PHX
Dissolved	Prep	200.8			210012	05/11/20 08:45	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		1	211031	05/22/20 18:56	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	497282	06/03/20 12:38	JMB	TAL DEN

Client Sample ID: CH-TANNERS-0520

Lab Sample ID: 550-141925-23

Date Collected: 05/08/20 08:02

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	210201	05/13/20 01:18	RDC	TAL PHX
Total/NA	Analysis	300.0		2	210424	05/15/20 06:57	RDC	TAL PHX
Total/NA	Analysis	300.0		200	210424	05/15/20 07:25	RDC	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210622	05/19/20 01:11	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210962	05/21/20 19:32	SRA	TAL PHX
Total/NA	Prep	200.7			209972	05/11/20 05:12	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	211270	05/28/20 03:41	SRA	TAL PHX
Total/NA	Prep	200.8			210014	05/11/20 08:57	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	210085	05/11/20 20:59	ARE	TAL PHX
Total/NA	Prep	200.8			210947	05/22/20 05:16	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		2	211332	05/28/20 00:49	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	209967	05/09/20 23:06	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	210140		YET	TAL PHX
					(Start)	05/12/20 11:12		
					(End)	05/13/20 11:20		
Total/NA	Analysis	SM 4500 H+ B		1	210921	05/21/20 16:30	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	210663	05/18/20 22:58	KJS	TAL PHX
Total/NA	Analysis	SM 5310B		1	211616	06/01/20 16:13	DGS	TAL PHX

Client Sample ID: CH-CCR-W309-0520

Lab Sample ID: 550-141925-24

Date Collected: 05/04/20 14:24

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	210201	05/13/20 01:45	RDC	TAL PHX
Total/NA	Analysis	300.0		2	210424	05/15/20 08:47	RDC	TAL PHX
Total/NA	Analysis	300.0		200	210424	05/15/20 09:14	RDC	TAL PHX
Total/NA	Prep	200.7			210154	05/12/20 13:26	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210331	05/13/20 20:09	SRA	TAL PHX
Total/NA	Prep	200.7			210154	05/12/20 13:26	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	210442	05/14/20 20:14	SRA	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Client Sample ID: CH-CCR-W309-0520

Lab Sample ID: 550-141925-24

Date Collected: 05/04/20 14:24

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			210154	05/12/20 13:26	MGM	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	210755	05/19/20 21:32	SRA	TAL PHX
Total/NA	Prep	200.8			210155	05/12/20 13:29	MGM	TAL PHX
Total/NA	Analysis	200.8 LL		1	210296	05/13/20 17:54	ARE	TAL PHX
Total/NA	Prep	200.8			210155	05/12/20 13:29	MGM	TAL PHX
Total/NA	Analysis	200.8 LL		1	210302	05/13/20 18:49	ARE	TAL PHX
Total/NA	Prep	200.8			210734	05/20/20 05:21	SGO	TAL PHX
Total/NA	Analysis	200.8 LL		1	210895	05/20/20 22:40	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	210520	05/16/20 18:27	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	210029		YET	TAL PHX
					(Start)	05/11/20 11:20		
					(End)	05/12/20 10:15		
Total/NA	Analysis	SM 4500 H+ B		1	210921	05/21/20 16:30	MRR	TAL PHX
Total/NA	Analysis	SM 4500 NH3 D		1	210663	05/18/20 23:05	KJS	TAL PHX
Total/NA	Analysis	SM 5310B		1	610673	05/29/20 21:31	YZ	TAL IRV

Client Sample ID: CH-CCR-W309-0520

Lab Sample ID: 550-141925-25

Date Collected: 05/04/20 14:24

Matrix: Water

Date Received: 05/08/20 12:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	200.7			210130	05/12/20 10:33	SGO	TAL PHX
Dissolved	Analysis	200.7 Rev 4.4		1	210333	05/13/20 23:28	SRA	TAL PHX
Dissolved	Prep	200.8			210126	05/12/20 09:27	SGO	TAL PHX
Dissolved	Analysis	200.8 LL		1	210304	05/13/20 19:06	ARE	TAL PHX
Dissolved	Analysis	SM 5310B		1	610686	05/30/20 08:12	YZ	TAL IRV

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL IRV = Eurofins Calscience Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Laboratory: Eurofins TestAmerica, Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-08-20
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
200.8 LL	200.8	Water	Molybdenum
SM 2320B		Water	Alkalinity, Phenolphthalein
SM 2540C		Water	Total Dissolved Solids
SM 4500 H+ B		Water	Temperature

Laboratory: Eurofins Calscience Irvine

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0671	10-14-20
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
SM 5310B		Water	Dissolved Organic Carbon
SM 5310B		Water	Total Organic Carbon

Laboratory: Eurofins TestAmerica, Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-21
A2LA	ISO/IEC 17025	2907.01	10-31-21
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-08-21
Arizona	State	AZ0713	12-20-20
Arkansas DEQ	State	19-047-0	06-01-21
California	State	2513	01-08-21
Connecticut	State	PH-0686	09-30-20
Florida	NELAP	E87667-57	06-30-20
Georgia	State	4025-011	01-09-21
Illinois	NELAP	2000172019-1	04-30-21
Iowa	State	IA#370	12-01-20
Kansas	NELAP	E-10166	04-30-21
Louisiana	NELAP	30785	06-30-20
Maine	State	2019011 (231)	03-03-21
Minnesota	NELAP	1788752	12-31-20
Nevada	State	CO000262020-1	07-31-20
New Hampshire	NELAP	205319	04-29-21
New Jersey	NELAP	190002	06-30-20
New York	NELAP	59923	04-01-21
North Carolina (WW/SW)	State	358	12-31-20
North Dakota	State	R-034	01-08-21
Oklahoma	State	2018-006	08-31-20
Oregon	NELAP	4025-011	01-08-21
Pennsylvania	NELAP	013	08-01-20
South Carolina	State	72002001	01-08-21

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins TestAmerica, Phoenix

Accreditation/Certification Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Laboratory: Eurofins TestAmerica, Denver (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Texas	NELAP	T104704183-19-17	09-30-20
US Fish & Wildlife	US Federal Programs	058448	07-31-20
USDA	US Federal Programs	P330-18-00099	03-26-21
Utah	NELAP	CO000262019-11	07-31-20
Virginia	NELAP	10490	06-14-20
Washington	State	C583-19	08-05-20
West Virginia DEP	State	354	11-30-20
Wisconsin	State	999615430	08-31-20
Wyoming (UST)	A2LA	2907.01	10-31-21

Method Summary

Client: Arizona Public Service Company
Project/Site: CCR Groundwater Monitoring

Job ID: 550-141925-1
SDG: APS Cholla Power Plant (FAP)

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PHX
200.7 Rev 4.4	Metals (ICP)	40CFR136A	TAL PHX
200.8 LL	Metals (ICP/MS)	EPA	TAL PHX
SM 2320B	Alkalinity	SM	TAL PHX
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL PHX
SM 4500 H+ B	pH	SM	TAL PHX
SM 4500 NH3 D	Ammonia	SM	TAL PHX
SM 5310B	Organic Carbon, Dissolved (DOC)	SM	TAL DEN
SM 5310B	Organic Carbon, Dissolved (DOC)	SM	TAL IRV
SM 5310B	Organic Carbon, Total (TOC)	SM	TAL IRV
SM 5310B	Organic Carbon, Total (TOC)	SM	TAL PHX
200.7	Preparation, Total Metals	EPA	TAL PHX
200.8	Preparation, Total Metals	EPA	TAL PHX

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL DEN = Eurofins TestAmerica, Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL IRV = Eurofins Calscience Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

phone 602.437.3340 fax 602.454.9303

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☒ Other: CCR

TestAmerica Laboratories, Inc.

Client Contact Arizona Public Service 4801 Cholla Lake Rd Joseph City, AZ 86032 (928) 587-0319 Phone FAX Project Name: CCR Groundwater Monitoring Site: APS Cholla Power Plant (FAP) PO #		Client Contact (602) 250-3608 Analysis Turnaround Time <input type="checkbox"/> CALENDAR DAYS <input checked="" type="checkbox"/> WORKING DAYS TAT if different from Below _____ <input checked="" type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Jim Edwards / (928) 288-1241 Lab Contact: Ken Baker		Date: _____ Carrier: _____ COC No: 2 of 2 COCs	
Sample Identification		Sample Date Time Type (C=Comp, G=Grab) # of Cont. Matrix		Sample Specific Notes:			
CH-CCR-W125-0420-0520	5-6-20 1245 G W				-18 Low Flow		
CH-CCR-W126-0420 0520	5-5-20 1409 G W				-19 +20		
CH-CCR-W127-0420 0520	5-6-20 0813 G W				-21 +22		
CH-CCR-FD05-0420 0520	5-4-20 1424 G W				BAP well		
CH-CCR-W309-0520	5-8-20 0802 G W				BAP deep -23 +24		
CH-Tanners-0570					stop		
Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other		<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown		<input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for: _____ Months			
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)					
Special Instructions/QC Requirements & Comments: Perform Method 200.8 with collision cell; * As marked on the bottle, perform dissolved analyses with sample provided in bottles marked 'field filtered'		Cooler Temp. (°C): Obs'd: _____ Cor'd: _____ Therm ID No.: _____					
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Company: _____ Date/Time: _____		Company: _____ Date/Time: _____			
Relinquished by: _____		Company: _____ Date/Time: _____		Company: _____ Date/Time: _____			
Relinquished by: _____		Company: _____ Date/Time: _____		Company: _____ Date/Time: _____			

Chain of Custody Record



Environment Testing
America



Client Information (Sub Contract Lab)		Sampler: Lab PM: Baker, Ken		Carrier Tracking No(s):		COC No: 550-27828.1	
Client Contact: Shipping/Receiving		Phone: E-Mail: ken.baker@testamericainc.com		State of Origin: Arizona		Page: 1 of 1	
Company: TestAmerica Laboratories, Inc.		Address: 4955 Yarrow Street, City: Anvada, State: Zip: CO, 80002		Accreditations Required (See note): State Program - Arizona		Job #: 550-141925-1	
Phone: 303-736-0100(Tel) 303-431-7171(Fax)		Email:		Due Date Requested: 5/20/2020		Preservation Codes:	
TAT Requested (days):		PO #:		WFO #:		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:	
Project Name: CCR Groundwater Monitoring		Project #: 55009651		Sample Date: 5/6/20		Total Number of containers: 2	
Site: Arizona Public Service		SSOW#:		Sample Time: 13:46 Arizona		Special Instructions/Note:	
Sample Identification - Client ID (Lab ID)		Sample Type (C=Comp, G=grab)		Sample Time		Matrix (W=water, S=solid, O=organic, A=air)	
CH-CCR-M50A-0520 (550-141925-5)		Water		5/6/20		Water	
CH-CCR-M51A-0520 (550-141925-7)		Water		5/6/20		Water	
CH-CCR-M64-0520 (550-141925-9)		Water		5/6/20		Water	
CH-CCR-M65-0520 (550-141925-11)		Water		5/5/20		Water	
CH-CCR-M66-0520 (550-141925-13)		Water		5/5/20		Water	
CH-CCR-M67-0520 (550-141925-15)		Water		5/5/20		Water	
CH-CCR-W123-0520 (550-141925-17)		Water		5/6/20		Water	
CH-CCR-W126-0520 (550-141925-20)		Water		5/5/20		Water	
CH-CCR-FD05-0520 (550-141925-22)		Water		5/6/20		Water	

Note: Since laboratory accreditations are subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.

Possible Hazard Identification		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
Unconfirmed		Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For <input type="checkbox"/> Months	
Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/QC Requirements:	
Empty Kit Relinquished by:		Method of Shipment:	
Relinquished by: <i>Encl 05-28-20 16:10 JH</i>		Date: <i>5-29-20</i>	
Relinquished by:		Date/Time: <i>5-29-20 08:35</i>	
Relinquished by:		Date/Time:	
Custody Seals Intact: <i>Yes</i>		Custody Seal No.: <i>1307715</i>	
Cooler Temperature(s) and Other Remarks: <i>2.4, 18.4, 6.0, 15.5</i>		Date/Time: <i>5-29-20</i>	

Phone 602-437-3340 Fax 602-454-9303

Chain of Custody Record



**Environment Testing
America**

Client Information (Sub Contract Lab)				Lab PW Baker, Ken E-Mail ken.baker@testamerica.com		Came Tracking No(s) 18352434 474650-27827 1 State of Origin Arizona		COC No 550-141925-1	
Company Eurofins CalScience LLC				Accredited Required (See note) State Program - Arizona		Job # 550-141925-1		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:	
Due Date Requested: 5/20/2020				Analysis Requested					
TAT Requested (days): PO # WO # Project # 55009651 SOW#				SM5310B/ TOC SM5310.DOC_B/FIELD_FLTRD_FF.DOC Perform MS/MSD (Yes or No)					
Sample Identification - Client ID (Lab ID) CH-CCR-W309-0520 (550-141925-24) CH-CCR-W309-0520 (550-141925-25)				Sample Date 5/4/20 5/4/20		Sample Time 14 24 14 24		Sample Type (C=comp, G=grab) Preservation Code Matrix (Minerals, Spills, Orientation) BT-Tissue, A=Air	
Arizona Public Service				Water Water		X X		Total Number of Containers 1 2	
Special Instructions/Note: Note: Since laboratory accreditation is subject to change, Eurofins TestAmerica places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the Eurofins TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins TestAmerica attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins TestAmerica.				Special Instructions/Note: AZ Sample					

Possible Hazard Identification

Unconfirmed

Deliverable Requested I, II, III, IV, Other (specify)

Primary Deliverable Rank: 2

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return To Client
 ☐ Disposal By Lab
 ☐ Archive For _____ Months

Special Instructions/QC Requirements

Empty Kit Relinquished by Relinquished by Relinquished by Relinquished by		Date Date/Time Date/Time Date/Time		Method of Shipment Received by Received by Received by		Date/Time Date/Time Date/Time		Company Company Company	
Relinquished by Relinquished by Relinquished by		Date Date/Time Date/Time		Method of Shipment Received by Received by Received by		Date/Time Date/Time Date/Time		Company Company Company	
Relinquished by Relinquished by Relinquished by		Date Date/Time Date/Time		Method of Shipment Received by Received by Received by		Date/Time Date/Time Date/Time		Company Company Company	

Custody Seal No. 29/31

Custody Seals Intact Yes No

Cooler Temperature(s) °C and Other Remarks

Login Sample Receipt Checklist

Client: Arizona Public Service Company

Job Number: 550-141925-1

SDG Number: APS Cholla Power Plant (FAP)

Login Number: 141925

List Number: 1

Creator: Gravlin, Andrea

List Source: Eurofins TestAmerica, Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

Login Sample Receipt Checklist

Client: Arizona Public Service Company

Job Number: 550-141925-1
SDG Number: APS Cholla Power Plant (FAP)

Login Number: 141925

List Number: 2

Creator: Skinner, Alma D

List Source: Eurofins Irvine

List Creation: 05/29/20 09:50 AM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	Not Present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Arizona Public Service Company

Job Number: 550-141925-1

SDG Number: APS Cholla Power Plant (FAP)

Login Number: 141925

List Number: 3

Creator: Schade, Daniel B

List Source: Eurofins TestAmerica, Denver

List Creation: 05/29/20 02:56 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

**ATTACHMENT B – LITHOLOGIC LOGS AND WELL CONSTRUCTION
DIAGRAMS FOR MW-67A AND M-64A**



Environment & Infrastructure Solutions, Inc.
4600 East Washington Street, Suite 600
Phoenix, Arizona 85034

BORING LOG I.D.: MW-67A

Page 1 of 3

PROJECT:	APS Cholla Power Plant CCR Compliance			PROJECT LOCATION:	APS Cholla Power Plant			
LOGGED BY:	Isaac Torres			PROJECT FEATURE:	Fly Ash Pond			
DRILLER:	Darius Cervantez			WOOD PROJECT #:	14-2018-2040			
DRILLER FIRM:	Boart Longyear			ADWR REG. #:	55-922301			
RIG I.D.:	- - -			COORDINATES:	N1428367.45, E668014.79			
RIG TYPE:	Rotasonic			COORDINATE SYS:	Arizona State Plane East Zone 0201, International Feet			
BORING TYPE:	- - -	BORING DIA.:	8"	SURFACE ELEV. (FT):	5024.05'			
ORIENTATION:	90°			MEAS. PT. ELEV. (FT):	5025.38'			
HAMMER TYPE:	Not Applicable			VERTICAL DATUM:	NAVD88			
HAMMER CALIBRATION-ENERGY TRANSFER RATIO:			N/A	COMPLETION DATE:	11-15-2018	COMPLETION TIME:	10:20	
START DATE:	11-14-2018	START TIME:	17:12					

Elevation in Feet	Depth in Feet	Graphical Log	Sample ID or Date (Time)	PID Meter Reading (ppm)	Unified Soil Classification	VISUAL CLASSIFICATION (Color, Moist, % by wt., Plasticity, Dilatancy, Toughness, Dry Strength, Consistency)	Depth in Feet	WELL INFORMATION (Construction Details and/or Drilling Remarks)
-5024.1	0				ML	SANDY SILT , 80% fines, 15% fine to coarse grained, subrounded sand, 5% fine to coarse grained, subrounded to subangular gravel, brown (7.5 YR 4/3), nonlithified, granular to single grain soil structure, weakly effervescent, nonplastic, slightly moist, loose density, low dry strength, no stains, no odors note: at 2.5' sharp basal contact	0	Steel casing stick up +2', minimum 8" clearance between top of steel casing and top of 4" PVC well casing
-5019.1	5		11-14-18 (17:12)		CL		5	4000 PSI Concrete Mix from 0 to 5'
-5014.1	10		11-14-18 (17:18)			SILTY CLAY , 95% to 98% fines, 2% to 5% fine to coarse grained, subrounded to subangular sand, dark brown (7.5YR 3/3), considerable to predominate calcium carbonate lenses and filaments, weakly cemented, highly effervescent, thin laminae (<1 mm), low plasticity, slightly moist, hard firmness, medium dry strength, friable to ductile, no stains, no odors note: at 7.5' color slightly changes to dark brown (7.5YR 3/2) sand slightly increases (5%) note: at 10' moderate cementation and high dry strength, increased with depth	10	4" Nominal Diameter Schedule 80 PVC Blank Casing from +6" to 15' Portland Neat Cement from 5' to 10'
-5009.1	15		11-14-18 (17:33)			 note: at 17.5' calcium carbonate filaments decrease (occasional to trace), clay decreases while silt & sand increase; sharp basal contact	15	Bentonite Plug from 10' to 13' Filter Pack (8-12) from 13' to 45'
-5004.1	20				ML	SANDY SILT , 85% to 90% fines, 10% to 15% fine to coarse grained, subrounded to subangular sand, dark reddish-brown (5YR 4/3), angular blocky soil structure, nonlithified, massive, moderately effervescent, low to medium	20	

GROUNDWATER

DEPTH(ft bgs)	HOUR	DATE
35.8	09:30	11/15/18
34.4	09:40	11/15/18
33.9	07:15	11/16/18

METHOD Not Applicable

(Continued Next Page)



Environment & Infrastructure Solutions, Inc.
4600 East Washington Street, Suite 600
Phoenix, Arizona 85034

BORING LOG I.D.: MW-67A

Page 2 of 3

PROJECT: APS Cholla Power Plant CCR Compliance

PROJECT LOCATION: APS Cholla Power Plant

ADWR REG. #: 55-922301

PROJECT FEATURE: Fly Ash Pond

Elevation in Feet	Depth in Feet	Graphical Log	Sample ID, or Date (Time)	PID Meter Reading (ppm)	Unified Soil Classification	VISUAL CLASSIFICATION (Color, Moist, % by wt., Plasticity, Dilatancy, Toughness, Dry Strength, Consistency)	Depth in Feet	WELL INFORMATION (Construction Details and/or Drilling Remarks)
5004.1	20		11-15-18 (07:50)			plasticity, slightly moist, loose to medium density, medium to hard dry strength, friable, no stains, no odors note: at 22.5' calcium carbonate lenses to filaments absent; gradational basal contact	20	(Continued)
					CL	CLAY, 95% fines, 5% fine grained, subrounded to subangular sand, dark reddish-brown (5YR 3/2), weakly cemented, effervescent, low plasticity, slightly moist, very firm, high to very high dry strength, ductile, no stains, no odors note: at 26' sand & silt decrease while clay increases; gradational basal contact	25	
4999.1	25		11-15-18 (08:20)		CL	CLAY, 99% fines, fine grained, subrounded sand, dark brown (7.5YR 3/3), occasional gypsum nodules (<3 mm), massive, effervescent, medium to high plasticity, moist, stiff to very stiff firmness, medium dry strength, ductile, gray staining, no odors	30	
4994.1	30		11-15-18 (08:34)				35	
4989.1	35		11-15-18 (08:53)			note: at 35.0' gypsum nodules decrease (rare) note: at 36.0' wet sandy elastic silt lense, ~1.5' (see MW-65A log for unit description) note: at 37.5' sharp basal contact	40	
4984.1	40		11-15-18 (09:11)		CL	SILTY CLAY, 99% fines, 1% fine grained, subrounded sand, dark reddish-brown (5YR 3/4), gypsum nodules absent, massive, effervescent, medium to high plasticity, moist to wet, stiff, medium to high dry strength, ductile, rare gray staining, no odors note: from 40' to 43' core samples more compact in diameter note: at ~43' medium stiffness, sand increases, gravel present (0.5-7.5 cm), core sample diameter expanded, and gradational basal contact	45	
4979.1	45				CL	GRAVELLY CLAY, 70% fines, 20% fine to coarse grained, subrounded to subangular gravel, 10% fine to coarse grained, subrounded to subangular sand, dark reddish-brown (5YR 3/2),		

GROUNDWATER

DEPTH(ft bgs)	HOUR	DATE
35.8	09:30	11/15/18
34.4	09:40	11/15/18
33.9	07:15	11/16/18

METHOD Not Applicable

(Continued Next Page)



Environment & Infrastructure Solutions, Inc.
4600 East Washington Street, Suite 600
Phoenix, Arizona 85034

BORING LOG I.D.: MW-67A

Page 3 of 3

PROJECT: APS Cholla Power Plant CCR Compliance

PROJECT LOCATION: APS Cholla Power Plant

ADWR REG. #: 55-922301

PROJECT FEATURE: Fly Ash Pond

Elevation in Feet	Depth in Feet	Graphical Log	Sample ID. or Date (Time)	PID Meter Reading (ppm)	Unified Soil Classification	VISUAL CLASSIFICATION (Color, Moist, % by wt., Plasticity, Dilatancy, Toughness, Dry Strength, Consistency)	Depth in Feet	WELL INFORMATION (Construction Details and/or Drilling Remarks)
-4979.1	45		11-15-18 (09:40)		CL	nonlithified, massive, effervescent, medium to high plasticity, wet, soft to very soft firmness, medium dry strength, no odors. note: at 45' wet sandy elastic silt lense, ~1.5' (see MW-65A log for unit descrip.) note: at 47' sharp basal contact with siltstone to mudstone Trmhmm - Moqui Member of Moenkopi Formation (mid-unit), SANDY SILT WITH SAND & Interbedded mudstone, 65% fines, 25% fine to coarse grained, subangular sand, dark reddish-brown (7.5YR 3/4) with rare olive brown staining (2.5Y 4/4), granular to rounded blocky soil structure, lithified mudstone samples, mudstone with thin laminae (<0.5mm), effervescent, slightly moist, medium plasticity, low to medium dry strength, friable, no odors Total Depth = 50'	45	(Continued)
								Pea Gravel from 45' to 47.5'
								Bentonite Chips from 47.5' to 50'
-4974.1	50		11-15-18 (10:00)				50	Total Depth = 50'
-4969.1	55						55	
-4964.1	60						60	
-4959.1	65						65	
-4954.1	70						70	

GROUNDWATER

DEPTH(ft bgs)	HOUR	DATE
35.8	09:30	11/15/18
34.4	09:40	11/15/18
33.9	07:15	11/16/18

METHOD Not Applicable

**TABLE A-13. LITHOLOGIC DESCRIPTIONS FOR
DRILL CUTTINGS FROM MONITOR WELL M-64A [55-920353]
CCR MONITOR WELLS
ARIZONA PUBLIC SERVICE CHOLLA POWER PLANT**

DRILLING COMPANY: Yellow Jacket Drilling

LOGGED BY: C.Stielstra, M. Zelazny

DEPTH DRILLED / LAND SURFACE ELEVATION: 69.0 feet / 4988.904 feet msl

DATE DRILLED: 2/8/2017

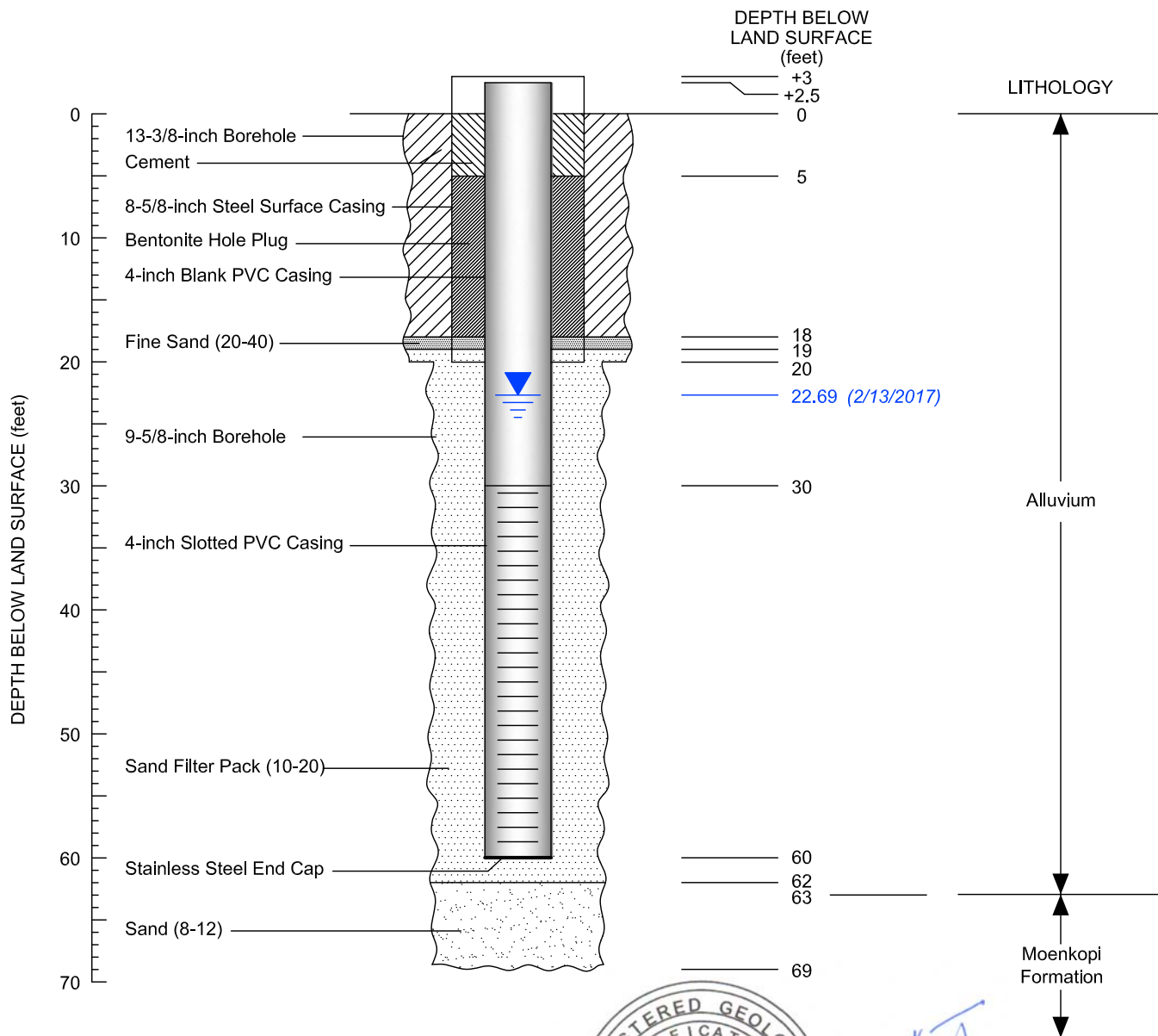
CADASTRAL : (A-18-19)21ccb / 1434030.012 N / 647702.043 E

DEPTH INTERVAL (feet)	FORMATION	DESCRIPTION
ALLUVIUM (Qal)		
0.0 - 5.0	Qal	FAT CLAY (CH): Reddish brown [5YR4/3]; silt and clay 92%, sand 8%. Non-lithified. High plasticity. Well sorted. Reaction to acid: strong.
5.0 - 10.0	Qal	SILTY SANDS (SM): Brown [7.5YR5/3]; sand 50%, silt 50%. Non-lithified. Very low plasticity. Moderately sorted. Reaction to acid: weak to moderate.
10.0 - 15.0	Qal	SILTY SANDS (SM): Brown [7.5YR5/3]; sand 80%, silt 20%. Non-lithified. Non-plastic. Well sorted. Reaction to acid: weak to moderate.
15.0 - 20.0	Qal	SILTY SANDS (SM): Brown [7.5YR5/3]; sand 75%, silt 25%. Non-lithified. Non-plastic. Well sorted. Reaction to acid: weak to moderate.
20.0 - 25.0	Qal	SILTY SANDS (SM): Brown [7.5YR4/3]; sand 70%, silt 25%, gravel 5%. Gravel fraction: subangular gravel to 1 in. consisting of Sandstone, chert, siltstone and quartzite. Non-lithified. Non-plastic. Moderately sorted. Reaction to acid: weak to moderate.
25.0 - 30.0	Qal	SILTY SANDS WITH GRAVEL (SM): Brown [7.5YR4/3]; sand 55%, gravel 25%, silt 20%. Gravel fraction: subangular gravel to 2 in. consisting of Chert, sandstone, coal and limestone. Non-lithified. Non-plastic. Moderately sorted. Reaction to acid: strong.
30.0 - 35.0	Qal	SILTY SANDS (SM): Brown [7.5YR4/2]; sand 80%, silt 19%, gravel 1%. Gravel fraction: subangular gravel to 1.5 in. consisting of Chert, limestone, sandstone and quartzite. Non-lithified. Non-plastic. Moderately sorted. Reaction to acid: moderate.
35.0 - 40.0	Qal	WELL GRADED SAND WITH SILT (SW-SM): Brown [7.5YR4/3]; sand 90%, silt 10%, trace gravel. Gravel fraction: subangular gravel to 1.5 in. consisting of Clay stone, sandstone and quartzite. Non-lithified. Non-plastic. Well sorted. Reaction to acid: very strong.
40.0 - 45.0	Qal	WELL GRADED SAND WITH SILT (SW-SM): Brown [7.5YR5/3]; sand 90%, silt 10%, trace gravel. Gravel fraction: subangular gravel to 1 in. consisting of Clay stone, chert, limestone and sandstone. Non-lithified. Non-plastic. Well sorted. Reaction to acid: weak.
45.0 - 50.0	Qal	WELL GRADED SAND WITH SILT (SW-SM): Brown [7.5YR5/2]; sand 90%, silt 10%, trace gravel. Gravel fraction: subangular gravel to 1.8 in. consisting of Clay stone, chert and sandstone. Non-lithified. Non-plastic. Well sorted. Reaction to acid: moderate.
50.0 - 55.0	Qal	WELL GRADED SAND WITH SILT (SW-SM): Brown [7.5YR5/2]; sand 90%, silt 10%, trace gravel. Gravel fraction: subangular gravel to 2.5 in. consisting of Clay stone, sandstone, chert and limestone. Non-lithified. Non-plastic. Well sorted. Reaction to acid: weak to moderate.

Gravel/sand division based on USCS scale. Grain size fractions estimated using manual field methods.

**TABLE A-13. LITHOLOGIC DESCRIPTIONS FOR
DRILL CUTTINGS FROM MONITOR WELL M-64A [55-920353]
CCR MONITOR WELLS
ARIZONA PUBLIC SERVICE CHOLLA POWER PLANT**

DEPTH INTERVAL (feet)	FORMATION	DESCRIPTION
55.0 - 60.0	Qal	SILTY SANDS (SM): Brown [7.5YR5/2]; sand 80%, silt 20%, trace gravel. Gravel fraction: subangular gravel to 1.3 in. consisting of Clay stone, sandstone, chert and limestone. Non-lithified. Non-plastic. Well sorted. Reaction to acid: weak to moderate.
60.0 - 65.0	Qal	SILTY SANDS (SM): Brown [7.5YR5/3]; sand 75%, silt 25%, trace gravel. Gravel fraction: subangular gravel to 1.3 in. consisting of Clay stone, sandstone, chert and limestone. Non-lithified. Non-plastic. Well sorted. Reaction to acid: weak to moderate.
TRIASSIC MOENKOPI FORMATION (TRm)		
65.0 - 69.0	TRm	SILTY SANDS (SM): Brown [7.5YR5/3]; sand 55%, silt 42%, gravel 3%. Gravel fraction: subangular gravel to 1.3 in. consisting of Moenkopi chips. Non-lithified. Very low plasticity. Moderately sorted. Reaction to acid: weak to moderate.



EXPLANATION



Depth to Water Level

Note: All PVC blank and slotted casing is Schedule 80; slot size is 0.020 inches.

WELL: M-64A

REGISTRATION: 55-920353

COUNTY: Navajo, Arizona

DATE COMPLETED: 2/9/2017

NORTHING: 1434030.012

EASTING: 647702.043

MP Elevation: 4,988.904

DATUM: NAD83, State Plane 1983

SCHEMATIC DIAGRAM OF CONSTRUCTION FOR ALLUVIAL WELL M-64A APS CHOLLA POWER PLANT



2017

FIGURE A-13

APPENDIX B

AQUIFER TESTS AT FAP WELLS W-123, W-126, AND MW-66A



Technical Memorandum

To:	Arizona Public Service Company	File No:	14-2018-2040
From:	Dane Andersen, PG	Reviewed by:	Dan Johnson, PE Maren Henley, PE
Date:	January 31, 2021		

Subject: **AQUIFER TESTS AT FAP WELLS W-123, W-126, AND MW-66A**
Arizona Public Service Cholla Power Plant – Navajo County, Arizona

1.0 INTRODUCTION

This technical memorandum documents the performance and analysis of aquifer tests conducted by Wood Environment and Infrastructure Solutions, Inc. (Wood) at monitoring wells W-123, W-126, and MW-66A. The monitoring wells are located hydraulically downgradient and southwest of the Arizona Public Service Company (APS) Cholla Power Plant (Site) Fly Ash Pond (FAP) in Navajo County, Arizona (Figure 1). The aquifer tests were conducted to evaluate potential remedial alternatives for the FAP in support of corrective action requirements detailed in 40 Code of Federal Regulations (CFR) Sections (§) 257.90 through 257.98 (herein referred to as the Coal Combustion Residuals [CCR] Rule, Federal Register, 2018).

Site background, CCR groundwater monitoring system, and historical operational information is presented in the *Annual Groundwater Monitoring and Corrective Action Report for 2019* (Wood, 2020a). The FAP is one of four CCR units at the Site (Figure 1). The FAP is a surface impoundment that receives flue gas desulfurization solids and fly ash slurry from the APS plant. It is approximately 420 acres in areal extent and was placed into service in 1978. The FAP was constructed by damming the drainage channel of an ephemeral tributary to the Little Colorado River. The unlined impoundment is primarily underlain by the Moqui member of the Moenkopi Formation, although alluvial sediments are present both upgradient and downgradient of the FAP dam. The predominant groundwater flow direction in the uppermost aquifer at the toe of the FAP dam is the same direction as surface water flow in the former wash, i.e., to the west-southwest. Farther downgradient, groundwater merges with the Little Colorado River alluvial aquifer, where the predominant groundwater flow direction follows the direction of surface water flow, i.e., to the west.

2.0 AQUIFER TEST OBJECTIVES AND DESIGN

Primary objectives for the March 2020 aquifer tests included the following:

- Calculating aquifer properties downgradient of the FAP (e.g., hydraulic conductivity, transmissivity, storage coefficient);
- Obtaining specific capacity data for pumping wells; and
- Evaluating connectivity between wells downgradient of the FAP (i.e., radius of influence of pumping wells).



The aquifer tests were initially planned to consist of one step-rate test and one constant-rate test at both W-123 and W-126. The test program was expanded during the field mobilization to include pumping tests at MW-66A, and additional data collection activities were conducted at the Hunt Seep extraction well. The test wells and observation points are depicted on Figure 2, and construction details for each test well and observation point are summarized in Table 1.

3.0 DESCRIPTION OF FIELD ACTIVITIES

3.1 Aquifer Test Equipment

A 3-inch nominal diameter test pump (Grundfos Model 15-SQE) was used to conduct the aquifer tests. Aquifer test flow rates were measured using a mechanical propeller type flowmeter with totalizer and periodically checked by measuring the time necessary to fill a container of known volume. Observation point water-level data were collected using In-Situ Level TROLL® 500 pressure transducers with vented cables. Water-levels at test wells were collected using an In-Situ Level TROLL® 700 pressure transducer with a vented cable and a hand-held water level meter. Groundwater produced during the aquifer tests was containerized at the wellsite before conveyance to the APS plant for reuse in plant operations.

3.2 Background Data Collection

Wood mobilized to the site on February 2, 2020 to deploy pressure transducers at the aquifer test wells and observation points to collect background water-level data. Pressure transducers were installed at W-123, W-126, F-92, F-111, and F-112. The pressure transducers were programmed to record at 15-minute intervals. The background data collected prior to aquifer testing are discussed in Section 4.1.

3.3 Site Mobilization

The aquifer tests were conducted between March 2 and 7, 2020. Pre-test activities included downloading background water-level data and function testing of the pressure transducers. The pressure transducers were re-programmed to record measurements at five-minute intervals for the aquifer tests, and an additional pressure transducer was deployed at MW-66A.

3.4 W-123 Testing

On March 3, 2020, a step-rate test was attempted at W-123. Prior to starting the test, the static water level (swl) in W-123 was 0.91 feet (ft) below ground surface (bgs). The test pump was installed at approximately 29.09 ft below swl and the pressure transducer was secured to the pump column for an installation depth of 25.31 ft below swl.

The test was started at 8:44 a.m. on March 3, 2020 at an initial flow rate of 3.5 gallons per minute (gpm). The table below summarizes each pumping step, and Figure 3 depicts a semi-logarithmic plot of the W-123 test drawdown and recovery data.

Table 2 - W-123 Step-Rate Test Summary

Step	Pumping Rate (gpm)	Pumping Rate Duration (minutes)	Total Elapsed Test Time (minutes)	Drawdown (ft)
1	3.5	4	4	17.3
2	0.5	14	18	>25.2

As noted on Figure 3 and in the table above, approximately 17.3 ft of drawdown occurred within the first four minutes of pumping. To avoid drawing the pumping water level down to the pump intake depth, the flow rate was reduced to approximately 0.5 gpm after four minutes, and the test continued for approximately seven additional minutes before the pumping water level dropped below the depth of the pressure transducer. Collection of manual measurements using a water-level meter was not possible at this point in the test due to erroneous instrument readings, which were likely caused by the interference of groundwater cascading through the well screen. Because water-level measurements could no longer be collected, the W-123 step-rate test was suspended at 9:02 a.m. after 18 minutes of pumping.

Approximately 15 minutes after stopping the test pump, Wood was able to collect accurate water-level measurements using the hand-held meter, and recovery was monitored for a period of ten minutes. During the ten-minute recovery period, water levels in W-123 rose only 0.2 ft. Due to the slow recovery rate, further pumping tests at the well were discontinued. Accordingly, the test pump was removed, and a pressure transducer was installed to monitor water-level recovery. Analysis of the W-123 recovery data is presented in Section 4.2.

3.5 W-126 Testing

The W-126 step-rate test was performed on March 3, 2020. The swl at W-126 prior to testing was 4.80 ft bgs. The test pump intake was installed approximately 35.3 ft below the swl, and the pressure transducer was secured to the pump housing for an installation depth of 35.1 ft below the swl.

The step-rate test began at 3:52 p.m. at an initial flow rate of 0.8 gpm. The table below summarizes the pumping steps, and Figure 4 depicts the W-126 step-rate test drawdown and recovery data.

Table 3 - W-126 Step-Rate Test Summary

Step	Pumping Rate (gpm)	Pumping Rate Duration (minutes)	Total Elapsed Test Time (minutes)	Drawdown (ft)
1	0.8	59	59	23.8
2	1.5	16	75	30.8
3	0.7	46	121	30.8
4	1.4	13	134	35.3

As noted in the table above, the pumping rate was increased to 1.5 gpm for the second pumping step. However, after 16 minutes of pumping at this flow rate, drawdown had not stabilized, and the pumping water level was approximately five ft above the pump intake and continuously decreasing. To avoid drawing the pumping water level down to the pump intake depth, the pumping rate was decreased to 0.7 gpm for the third pumping step. The well was then pumped at 0.7 gpm for the next 46 minutes, with drawdown stabilizing at approximately 30.8 ft. The flow rate was then increased to 1.4 gpm 121 minutes after starting the pump, but 13 minutes after increasing the flow rate, the pumping water level fell to the pump intake depth, shutting down the pump 134 minutes into the test.

Drawdown stabilized during the step-rate test at pumping rates of 0.7 and 0.8 gpm. Because the third step was performed after increasing the flow rate to 1.5 gpm during the second step, the drawdown experienced during the third step is exaggerated and not representative of the true drawdown for a pumping rate of 0.8 gpm. Therefore, to determine the well's specific capacity, the first pumping step is used to calculate a specific capacity of **0.03 gpm/ft** for W-126.

After stopping the W-126 step-rate test, Wood discontinued further aquifer testing at the well due to the relatively low sustainable pumping rate of 0.7 gpm. The test pump and transducer were left in the well overnight to monitor water-level recovery and removed from the well on March 4, 2020. A pressure transducer was installed in W-126 to monitor water levels during subsequent aquifer testing. Section 4.3 presents an analysis of the W-126 step-rate test results.

3.6 MW-66A Testing

In lieu of additional testing at W-123 and W-126, Wood selected MW-66A for aquifer testing. The pumping tests performed at MW-66A between March 4 and 6, 2020 are discussed below.

3.6.1 MW-66A Step-Rate Test

A step-rate test was conducted at MW-66A on March 4, 2020. Prior to starting the test, the swl at MW-66A was measured at 28.38 ft bgs. The test pump intake was installed at approximately 18.92 ft below swl, and the transducer was secured to the pump housing for an installation depth of 17.68 ft below swl.

The step-rate test began at 1:18 p.m. at an initial pumping rate of 1.1 gpm. A summary of the step-rate test is provided in the table below, and Figure 5 depicts the drawdown and recovery data.

Table 4 - MW-66A Step-Rate Test Summary

Step	Pumping Rate (gpm)	Pumping Rate Duration (min)	Total Elapsed Test Time (min)	Drawdown (ft)
1	1.1	8	8	2.4
2	2.2	21	29	6.7
3	3.2	92	121	12.9
4	4.3	18	139	18.3
5	3.3	53	192	17.2

Drawdown stabilized during the third pumping step, suggesting a specific capacity for the well of approximately **0.25 gpm/ft**. The test pump and transducer were left in the well overnight to monitor water-level recovery before starting subsequent MW-66A pumping tests.

3.6.2 MW-66A Trial 1 Constant Rate Test

The initial MW-66A pumping test was conducted on March 5, 2020. Prior to starting the test, the swl at MW-66A was 28.36 ft bgs. The MW-66A trial 1 pumping test began at 11:30 a.m. at a pumping rate of 3.3 gpm. Figure 6 depicts drawdown data collected during the trial 1 test. As indicated on the figure, the pumping rate was decreased several times during the test to address increasing drawdown rates which would have ended the test prematurely. The pumping rate was reduced to 3.2 gpm after 83 minutes, 3.0 gpm after 115 minutes, 2.9 gpm after 195 minutes, and 2.1 gpm after 269 minutes (Figure 6).

Approximately 280 minutes after beginning the initial MW-66A test, a hydraulic line on the pump generator began leaking anti-freeze, which necessitated shutdown of the pump 284 minutes after starting the trial 1 test. APS personnel were notified of the hydraulic leak at 4:30 p.m. on March 5, 2020. Approximately 0.1 liters of anti-freeze leaked onto the ground surface beneath the generator, staining a small amount of soil. The impacted soil and excess anti-freeze were removed from the ground, containerized, and delivered to APS personnel for disposal.

After stopping the trial 1 test, water-level recovery data were collected for approximately 86 minutes until 92% recovery to the swl was reached. Assessment of the initial MW-66A pumping test is provided in Section 4.4.

3.6.3 MW-66A Trial 2 Constant Rate Test

After repairing coolant lines on the pump generator, the MW-66A trial 2 test began at 5:40 p.m. on March 5, 2020. The depth to water before starting the second test was measured at 29.61 ft bgs, indicating a 96% recovery to swl.

Because drawdown failed to stabilize several times during the initial MW-66A test, a pumping rate of 2.1 gpm was selected for the trial 2 test. Figure 7 depicts the drawdown data collected during the MW-66A trial 2 test. The test began at a pumping rate of 2.1 gpm but was reduced to 1.9 gpm approximately 394 minutes after starting the pump to address increasing drawdown rates, which could have ended the test prematurely. The test continued at a pumping rate of 1.9 gpm until the test was stopped at 5:45 p.m. on March 6, 2020. Water-level recovery was monitored in MW-66A until the swl was reached. Analysis of the MW-66A trial 2 test is presented in Section 4.4.

3.6.4 MW-66A Groundwater Sampling

Groundwater samples were collected throughout the MW-66A trial 1 and trial 2 tests. Each sample was labeled and placed on ice for transport to Eurofins TestAmerica Laboratories, Inc., an Arizona Department of Health-certified laboratory (AZ0728) for analysis. The samples were analyzed for select CCR Rule Appendix III and IV constituents including boron, fluoride, arsenic, cobalt, chromium, lithium, molybdenum; the samples were also analyzed for iron and manganese, two constituents which are sensitive to groundwater redox conditions. The laboratory analytical report is included as Attachment A and the analytical results are discussed in Section 4.6.

3.7 Inspection of Geronimo Seep and Hunt Seep Extraction Wells

During the course of the aquifer test field mobilization, Wood inspected the extraction wells associated with the seepage collection systems at the Geronimo Seep and Hunt Seep.

Geronimo A (GSX-1) and Geronimo B (GSX-2) were inspected on March 5, 2020. During the site visit, the Geronimo B pump was not running but was able to be started, while the Geronimo A pump was neither running nor able to be started. APS site personnel were notified of the inoperable status of Geronimo A. Further evaluation of the Geronimo seepage intercept system is documented in the *Seepage Intercept System Evaluation at the FAP* (Wood, 2021).

Hunt B (HSX-1) was initially inspected on March 3, 2020. The well was operating, and a pumping rate of approximately 8.5 gpm was calculated by measuring the time necessary to fill a container of known volume. The measurement container was filled from the extraction well head sampling valve while the valve that routes water from the extraction well to the Plant was closed, thereby channeling all extracted water to sampling valve and measurement container. Wood conducted additional inspections at Hunt B on March 5 and 6, 2020. During the additional visits, the extraction well was operating and pumping at a consistent flow rate of approximately 8.5 gpm.

On the morning of March 6, 2020 (while the MW-66A trial 2 test was underway), Wood recommended shutting off the Hunt B extraction well pump to avoid possible interference with the MW-66A trial 2 test data. After confirming this decision with APS, the Hunt B extraction well pump was shut off at 8:11 a.m. on

March 6, 2020, approximately 871 minutes after starting the MW-66A trial 2 test. The potential impacts from Hunt B pumping on the aquifer tests are discussed in the following sections.

3.8 Additional Data Collection Activities

Wood demobilized from the site on March 7, 2020. Prior to demobilization, Wood reviewed transducer data collected throughout the aquifer tests to evaluate if shutting off the Hunt B extraction well pump had influenced water levels in any of the observation points or test wells. The review indicated the only definitive influence occurred at W-126, as water levels increased in W-126 after the Hunt B extraction well was shut off.

Accordingly, a pressure transducer was left in W-126 to monitor water levels in the well, and the Hunt B extraction well pump was not restarted so that water-level recovery data in W-126 could be collected. Wood also installed pressure transducers in piezometers F-92, F-111, F-112, and monitoring wells W-123 and MW-66A before leaving the site.

Wood returned to the site on March 11, 2020 to download the water-level data and install an amperage/voltage logging device on the Hunt B extraction well electrical system to assess the well's operational schedule. The amperage/voltage logger was installed on the Hunt B electrical panel on March 12, 2020, and the Hunt B extraction well pump was restarted and set to automatic operation at 2:34 p.m. on March 12. Pressure transducers were also removed from piezometers F-92 and F-112.

An additional site visit was conducted on April 15, 2020 to download water-level data from the pressure transducers and the amperage/voltage logger data. The additional water-level data and Hunt B operational schedules obtained from the amperage/voltage logger are presented on Figure 8 and discussed in Section 4.5.

4.0 ANALYSES OF AQUIFER TEST RESULTS

This section analyzes the aquifer test data to evaluate aquifer properties and connectivity between pumping wells and observation points. Aquifer properties were calculated from drawdown and recovery data using several analytical solutions included in the AQTESOLV (Duffield, 1996) software package. Prior to analyzing the test data, the hydrogeologic conditions at each test well were assessed by reviewing lithologic logs and well construction diagrams, which are presented as Attachment B. Analytical solutions used to assess the test data include the Theis recovery method (1935), the Cooper-Jacob method (1946), and the Dougherty-Babu method (1984). Results of the AQTESOLV analyses are described in the following sections and provided in Attachment C.

Where possible, hydraulic conductivities were calculated using the following equation:

$$T=kb$$

where T =transmissivity (ft²/day)
 k =hydraulic conductivity (ft/day)
 b =aquifer thickness (ft)

Radius of influence for a given pumping well was assessed by comparing observation point water-level data against the test well pumping schedule.

4.1 Background Data Evaluation

Figure 9 depicts background water-level data collected from the observation points between February 12 and March 3, 2020. Of the five observation points, the greatest similarity between water-level fluctuations appears to have occurred between W-123, W-126, and F-112, suggesting a potential connection between these observation points.

A lack of operational information for the Geronimo and Hunt extraction wells during this timeframe prevents identification of potential influences from the extraction wells. However, a notable water level increase at W-126 appears to have occurred between February 22 and February 23, 2020, suggesting the Hunt B extraction well may not have operated during this timeframe.

4.2 W-123 Aquifer Test Analysis

4.2.1 Conceptual Hydrogeology for W-123

The W-123 lithologic log and well construction diagram indicates the well is screened from 14 to 29 ft bgs, primarily within red clay and gypsum, which was noted from 15 to 40 ft bgs. Previous site investigations suggest the presence of gypsum may be indicative of the Moenkopi Moqui (Wood, 2020b), and results of cone penetrometer tests advanced near W-123 suggest a relatively shallow depth to bedrock in this area (e.g., between approximately 10 and 20 ft bgs). Therefore, it is possible that W-123 is partially completed within the Moenkopi Moqui, though the extent to which the Moqui is saturated at this location is unknown.

4.2.2 Aquifer Test Data Analysis

The drawdown data collected during the 18 minutes of W-123 pumping provides an insufficient data set for aquifer test analysis. Therefore, the drawdown data were not assessed, and instead, the water-level recovery data were analyzed using the Theis recovery method for confined aquifers. Analysis of the late-time recovery data using this method produced a transmissivity value of **0.22 gallons per day (gpd)/ft**. Because the saturated aquifer thickness at W-123 is unknown, a hydraulic conductivity value was not estimated from the resulting transmissivity calculation.

Figure 10 depicts water-levels measured from nearby observation wells during the W-123 pumping test. The data indicate no drawdown occurred in the observation wells during the W-123 pumping test, a predictable result given the relatively short pumping duration.

To assess impacts of the W-126 and MW-66A tests on the W-123 recovery data, the W-123 water-level recovery data and the pumping durations for the W-126 test and the MW-66A tests are depicted on Figure 11. The data suggest the W-126 and MW-66A tests did not affect the W-123 recovery data. Also evident on Figure 11 is the relatively long recovery period for W-123, which recovered to 95% of the swl after approximately 38 hours.

As indicated in Section 3.7, Geronimo A and Geronimo B were not pumping during Wood's inspection on March 5, 2020. However, because the operational schedule for the Geronimo wells is unknown for the entirety of the W-123 recovery period, it is not possible to assess if the Geronimo extraction well operation affected the W-123 recovery data.

Figure 12 depicts the W-123 recovery curve against the Hunt B operational schedule. A slight rise in water levels occurred in W-123 approximately four hours after the Hunt B extraction well was shutoff on March 6, but it is unclear if the water level rise resulted from the extraction well shut down or from natural water-

level fluctuations. In any case, no discernable water level decline appears to have occurred in W-123 when the Hunt B pump was restarted on March 12, 2020, suggesting that Hunt B operation does not influence water levels at W-123.

4.3 W-126 Aquifer Test Analysis

4.3.1 Conceptual Hydrogeology for W-126

The lithologic log and well construction diagram for W-126 indicates the well is screened from 15 to 45 ft bgs in red clay. Because the W-126 lithologic log lacks significant detail, supplemental information was collected by reviewing lithologic logs from borings advanced in the area (APS, 1996) and from the Hunt B lithologic log from the well driller report filed with the Arizona Department of Water Resources (no boring log is available). Borings B-1 and B-2, which were advanced in the vicinity of W-126 (Figure 2), noted sequences of brown and brownish-red clay with gypsum and green clay particles at depths ranging from 10 to 50 ft bgs. The lithologic log for Hunt B (HSX-1), which is located approximately 105 ft northeast of W-126 and screened from 19 to 49 ft bgs, indicated decomposed to weathered Moenkopi Formation from 10 to 50 ft bgs. Based on this review, it is possible that W-126 and Hunt B may be completed within a weathered upper layer of the Moenkopi Moqui.

4.3.2 Aquifer Test Data Analysis

As previously indicated, a constant-rate test was not performed at W-126 due to low sustainable pumping rates observed during step-rate testing. Instead, this section assesses the quality of water-level data collected during the W-126 step-rate test recovery period.

Figure 13 depicts the W-126 step-rate test residual drawdown data. As noted on the figure, abrupt changes in the recovery curve are apparent throughout the recovery period. A likely explanation for the changes in recovery rates is the operation of extraction well Hunt B, which, as previously noted, strongly influences water levels at W-126. The perturbations may have been caused either by the operation of the Hunt B extraction well pump or by fluctuations in the Hunt B pumping rate.

Because the Hunt B operational schedule during the W-126 recovery period is unknown, analysis of the W-126 step-rate test recovery data is problematic and is most likely prone to error. Therefore, the W-126 step-rate test recovery data were not analyzed. Instead, water-level data collected from W-126 between March 6 and April 13, 2020 (when the operational schedule of Hunt B was known) are assessed in Section 4.5.

Observation point data collected during the W-126 test are depicted on Figure 14. The data indicate no drawdown occurred in the observation wells during the W-126 step-rate test.

4.4 MW-66A Aquifer Test Analysis

4.4.1 Conceptual Hydrogeology for MW-66A

The lithologic log and well construction diagram for MW-66A indicates the well is screened in alluvium from 24 to 49 ft bgs in sequences of clay with occasional gypsum filaments and nodules, silty clay, and gravelly clay, with minor lenses of fine- to coarse-grained sand. The Moqui member was noted at approximately 53 ft bgs in the MW-66A borehole and was observed to be dry. Confined conditions were also observed during well installation, as water levels rose from 31.9 ft bgs during borehole advancement to 28.5 ft bgs after the

well was installed (Wood, 2020c). Accordingly, an aquifer thickness of 21.1 ft is assigned for MW-66A based on the vertical distance between the water level first encountered during drilling and the underlying Moqui.

4.4.2 **Aquifer Test Data Analysis**

As previously indicated, pumping rates during the MW-66A trial 1 test varied throughout the 284 minutes of pumping. Additionally, water-level recovery was only monitored for a period of 86 minutes for a 92% recovery to the swl.

In comparison, the MW-66A trial 2 test was able to achieve more consistent pumping rates over a 24-hr period, and water-level recovery data was collected until the swl was reached. Therefore, to obtain more accurate estimates of aquifer properties, the drawdown and recovery data collected from the first pumping test are disregarded, and results from the MW-66A trial 2 test were analyzed using the Cooper-Jacob method, the Dougherty-Babu method, and the Theis recovery method. While all three methods are suitable for variable-rate pumping tests conducted in confined aquifers, the Dougherty-Babu method accounts for partial penetration of the MW-66A well screen. Results of the analyses using AQTESOLV are summarized in the table below and provided in Attachment C.

Table 5 - Results of MW-66A Trial 2 Test Analysis

Test	Data Set	Analytical Method	Transmissivity (gpd/ft)
MW-66A Trial 2	Drawdown Data	Cooper-Jacobs	303.4
MW-66A Trial 2	Drawdown and Recovery Data	Dougherty-Babu	299.7
MW-66A Trial 2	Recovery Data	Theis Recovery	301.7
Average			301.6

Using the average transmissivity value of **301.6 gpd/ft**, the inferred aquifer thickness of 21.1 ft produces a hydraulic conductivity of **1.9 ft/d**, an estimate which is consistent with documented hydraulic conductivity values for silty sand (Heath, 1983).

As depicted on Figure 15, no observable drawdown occurred in the observation wells during the MW-66A pumping tests.

Figure 16 depicts a semi-log plot of the MW-66A trial 2 drawdown data. As noted on the figure, the rate of drawdown increased slightly after approximately 221 minutes of pumping. To account for the increased drawdown rate, the pumping rate was lowered 394 minutes into the test, at which point the rate of drawdown rate decreased and leveled out to approximately zero (i.e., the drawdown rate was neither increasing nor decreasing). However, 860 minutes into the test, the drawdown rate increased again.

The increases in drawdown suggest the presence of boundary conditions. The cone of depression created during the pumping test spread into less permeable sediments in the alluvial aquifer, thereby increasing the drawdown rate at the well. This is an expected occurrence in heterogeneous alluvial aquifers where transmissive sediments are limited in areal extent.

4.5 **Hunt B Extraction Well Analysis**

As previously discussed, the observation well water-level data and Hunt B operational data collected between March 6 and April 13, 2020 (Figure 8) indicate a definitive connection between the operation of

Hunt B and water levels in W-126, while the remaining observation points do not appear to be affected by Hunt B pumping. This section assesses the connection between W-126 and Hunt B.

4.5.1 Conceptual Hydrogeology for Hunt B

As previously discussed, it is possible that W-126 and Hunt B are completed within a weathered layer at the top of the Moenkopi Moqui. The two wells are screened across similar elevations (Table 1) and show similar response times to pumping stresses and recovery periods.

4.5.2 W-126 Water-Level Data Analysis

This section presents a hydraulic analysis of the W-126 water-level data collected from March 12, 2020 at 2:34 p.m. (when the Hunt B pump was manually restarted) to April 13, 2020 at 2:34 a.m. (when the W-126 water levels recovered to levels observed before starting the Hunt B pump on March 12). The analysis uses the W-126 water level as observation point data for the operation of Hunt B. Based on Wood's field observations in March 2020, a pumping rate of 8.5 gpm is assumed for Hunt B for the aquifer test analysis.

Appendix C presents an analysis of the W-126 observation well data using AQTESOLV. To account for the uncertainty regarding the formation in which W-126 and Hunt B are completed, the drawdown data were analyzed using two methods: the Cooper Jacob method for confined aquifers and the Moench method for fractured bedrock aquifers. The Cooper Jacob analysis produced a transmissivity value of **2,974 gpd/ft**, while the Moench method produced a hydraulic conductivity value of **7.2 ft/d**.

The W-126 recovery data were also analyzed using the Theis recovery method for confined aquifers, which produced a transmissivity value of **2,952 gpd/ft**. The transmissivity results from the Cooper Jacob and Theis recovery methods are averaged to produce a transmissivity of **2,963 gpd/ft** for MW-66A.

Uncertainties in the calculations above include:

- The assumption that Hunt B pumped at a rate of 8.5 gpm for the entirety of the test period; and
- The formation(s) in which W-126 and Hunt B are completed (i.e., alluvium and/or Moenkopi Moqui).

4.6 Water Quality Analysis

Analytical results for the water samples collected at Hunt B in March 2020 are summarized in Table 6. For comparison, Table 6 also includes analytical data from groundwater samples collected in May 2020 at W-123, W-126, and MW-66A. As indicated, similar concentrations of boron, fluoride, and molybdenum were detected in the samples collected at W-123, W-126, and Hunt B, suggesting connectivity between these wells. Water quality at MW-66A is markedly different from W-123, W-126, and Hunt B, with lower concentrations of boron, fluoride, and molybdenum, and higher concentrations of manganese and iron.

Figure 17 depicts the analytical results from groundwater samples collected throughout the MW-66A pumping tests. As illustrated on the figure, relatively high concentrations of iron, arsenic, cobalt, and chromium were measured in the first two samples collected during the test. The concentrations of arsenic and cobalt measured in the initial sample are above respective GWPSs and are not typical of arsenic and cobalt concentrations observed at the well during routine groundwater sampling. For example, the three previous groundwater sampling events at MW-66A have indicated arsenic concentrations between 0.0017 and 0.0039 mg/L and detected cobalt concentrations between 0.0013 and 0.0017 mg/L.

None of the MW-66A samples were field filtered prior to collection, and groundwater pumped during the aquifer tests was noted to be turbid. It is possible that the unusually high iron, arsenic, cobalt, and chromium concentrations observed in the first two aquifer test samples resulted from high sample turbidity, since these samples were not filtered in the field or laboratory and were analyzed for total concentrations.

5.0 SUMMARY AND CONCLUSIONS

The average aquifer properties calculated from the aquifer test data are summarized below.

Table 7 - Summary of Aquifer Test Results

Test Well	Transmissivity (gpd/ft)	Hydraulic conductivity (ft/d)
W-123	0.22	---
MW-66A	302	1.9
Hunt B	2,963	7.2

The boring logs for W-123, W-126, and Hunt B suggest these wells may be completed within the Moenkopi Moqui. Additional investigation is necessary to determine the degree to which the Moqui is saturated at these well locations.

6.0 REFERENCES

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Wood, 2020c. *Hydrogeologic Investigation of the Fly Ash Pond and Bottom Ash Pond. Coal Combustion Residual Rule Groundwater Monitoring System Compliance*. Arizona Public Service Company Cholla Power Plant, Navajo County, Arizona. January 31, 2020.

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TABLES

Table 1 - Construction Details for Wells and Piezometers

Well ID	Casing Diameter	Well Depth	Casing Depth	Screened Interval	Screen Length	Land Surface Elevation	Screen Top Elevation	Screen Bottom Elevation
	(in)	(ft bgs)	(ft bgs)	(ft bgs)	(ft)	(ft amsl)	(ft amsl)	(ft amsl)
W-123	5	40	32	14-29	15	5038.14	5024.14	5009.14
W-126	4	43	43	15-45	30	5032.75	5017.75	4987.75
MW-66A	4	60	49	24-49	25	5032.46	5008.46	4983.46
Geronimo A	5	40	40	20-40	20	5043*	5023	5003
Geronimo B	5	40	40	20-40	20	5043*	5023	5003
Hunt B	5	49	49	19-49	30	5039*	5020	4990
F-92	2	54	54	41-56	15	5033.37	4992.37	4977.37
F-111	2	51	45.5	25.5-45.5	20	5034.02	5008.52	4988.52
F-112	2	70	64.5	39.5-64.5	25	5066.8	5026.50	5001.50

Notes:

* Estimated from Google Earth

Abbreviations:

amsl - above mean sea level

bgs - below ground surface

ft - feet

in - inch

Table 6 - Analytical Results for Groundwater Samples Collected in March and May, 2020

Sample Location			Hunt B	W-123	W-126	MW-66A
Analyte	Units	GWPS	3/5/2020	5/6/2020	5/6/2020	5/5/2020
Boron	mg/L	---	31	37	50	1.6
Arsenic	mg/L	0.01	<0.010	0.0012	0.0014	0.0017
Chromium	mg/L	0.1	<0.020	0.076	0.0053	0.016
Cobalt	mg/L	0.006	<0.005	0.0030	0.0038	0.0014
Fluoride	mg/L	4	3.2	4.8	4.1	1.1
Lithium	mg/L	0.31	0.72	0.83	1.1	0.68
Molybdenum	mg/L	0.1	0.410	0.30	0.22	0.014
Manganese	mg/L	---	0.890	<0.01	0.12	4.3
Iron	mg/L	---	<0.1	0.16	<0.1	0.23

Notes:

Appendix III constituents are highlighted in light green

Appendix IV constituents are highlighted in dark green

Concentrations exceeding respective Groundwater Protection Standards are bolded

Abbreviations:

ft - feet

GWPS - Groundwater Protection Standard

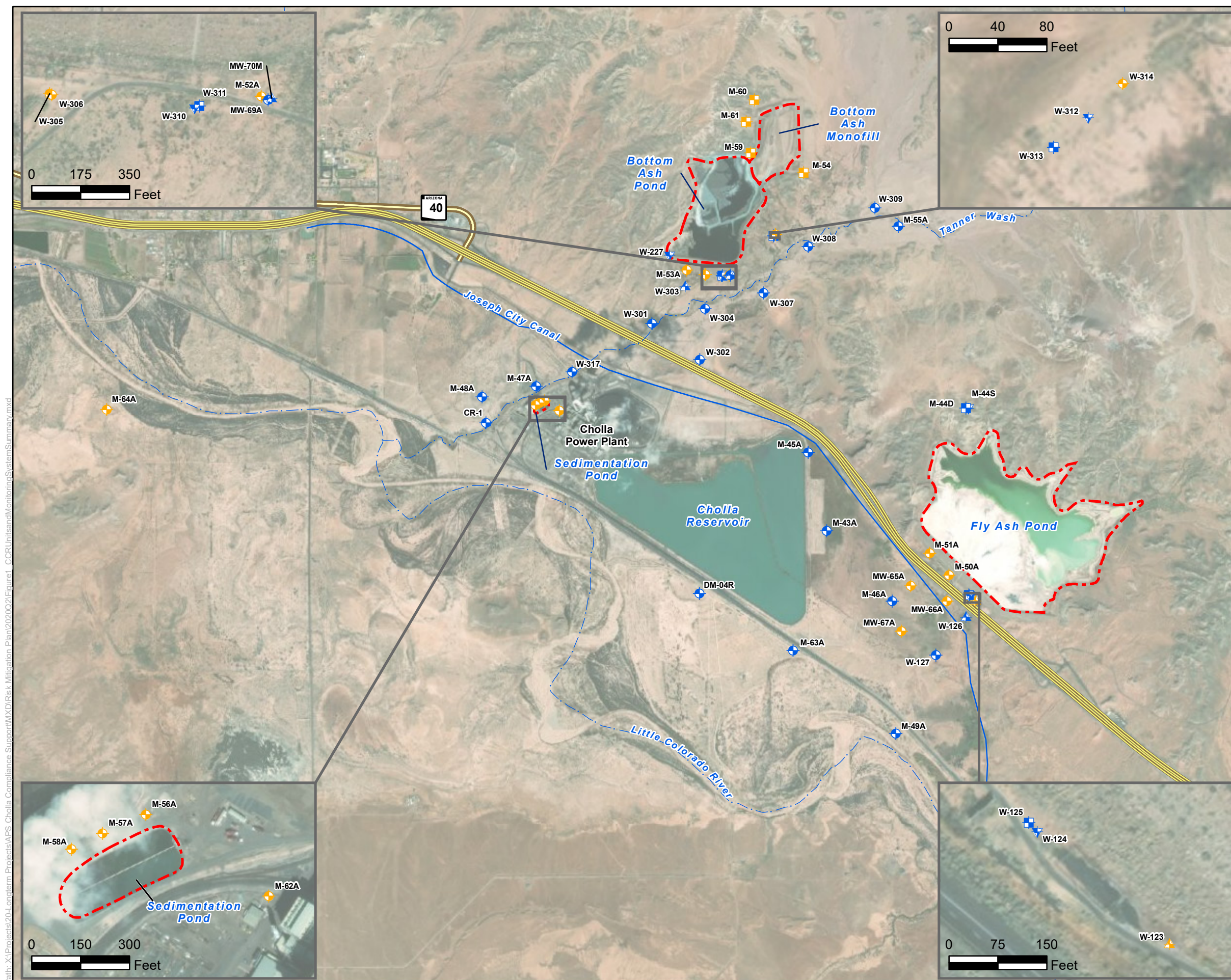
mg/L - milligrams per liter

ug/L - micrograms per liter

wood.

FIGURES





Legend

CCR Monitoring Well Location

- Alluvial Monitoring Well
- Moenkopi Formation (Moqui Member) Monitoring Well
- C-Aquifer Monitoring Well

Supplementary Site Monitoring Well Location

- Alluvial Monitoring Well
- Moenkopi Formation (Moqui Member) Monitoring Well
- Moenkopi Formation (Wupatki Member) Monitoring Well
- C-Aquifer Monitoring Well

— Ephemeral Surface Water Feature

— Canal

— Approximate Extent of CCR Unit

Notes:

CCR Coal Combustion Residuals

0 1,250 2,500 Feet

N

Arizona Public Service
Cholla Power Plant
Navajo County, Arizona

FIGURE 1 CCR Units and Monitoring System Summary

Job No. 1420182040	
PM: MBH	
Date: 10/8/2020	
Scale: 1"= 2500'	

The map shown here has been created with all due and reasonable care and is strictly for use with Wood Environment & Infrastructure Solutions, Inc. Project Number 1420182040. This map has not been certified by a licensed land surveyor, and any third party use of this map comes without warranties of any kind. Wood Environment & Infrastructure Solutions, Inc. assumes no liability, direct or indirect, whatsoever for any such third party or unintended use.

Path: X:\Projects\20-Longterm Projects\APS Cholla Compliance Support\MXD\FAP Aquifer Test TWEfigure2_AquiferTestSummary.mxd



Legend

CCR Monitoring Well Location

- Alluvial Monitoring Well
- Moenkopi Formation (Moqui Member) Monitoring Well

Supplementary Site Monitoring Well

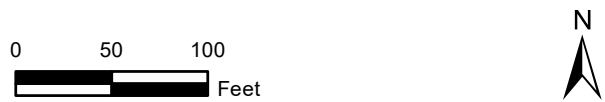
- C-Aquifer Monitoring Well
- Moenkopi Formation (Moqui Member) Monitoring Well
- Moenkopi Formation (Wupatki Member) Monitoring Well

Seepage Intercept System

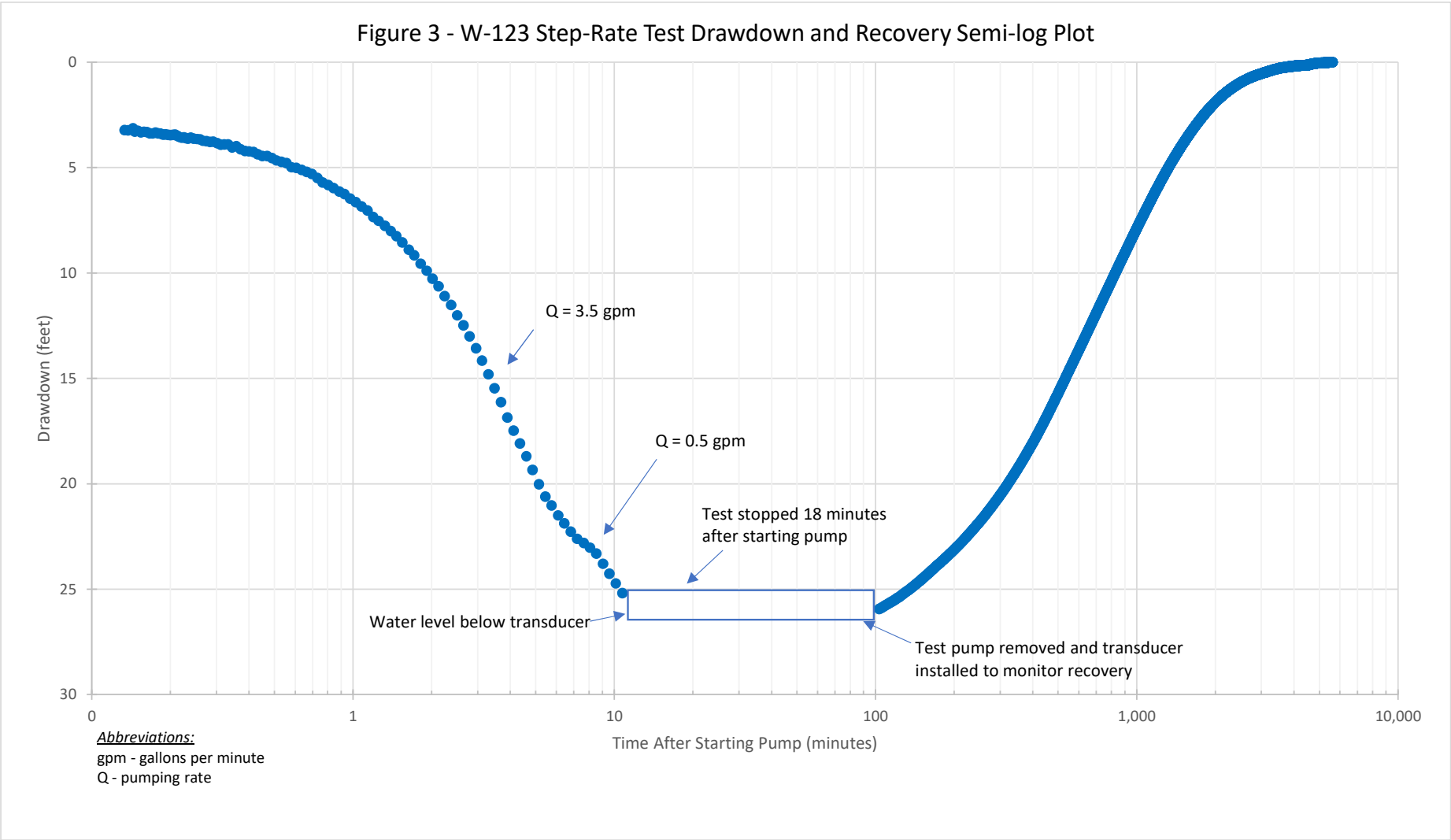
- Alluvial Extraction Well
- Moenkopi Formation (Moqui Member) Extraction Well
- Seepage Collection Sump
- Discharge Piping (approximate)
- Seepage Collection Trench (approximate)
- Retention Basin (approximate)

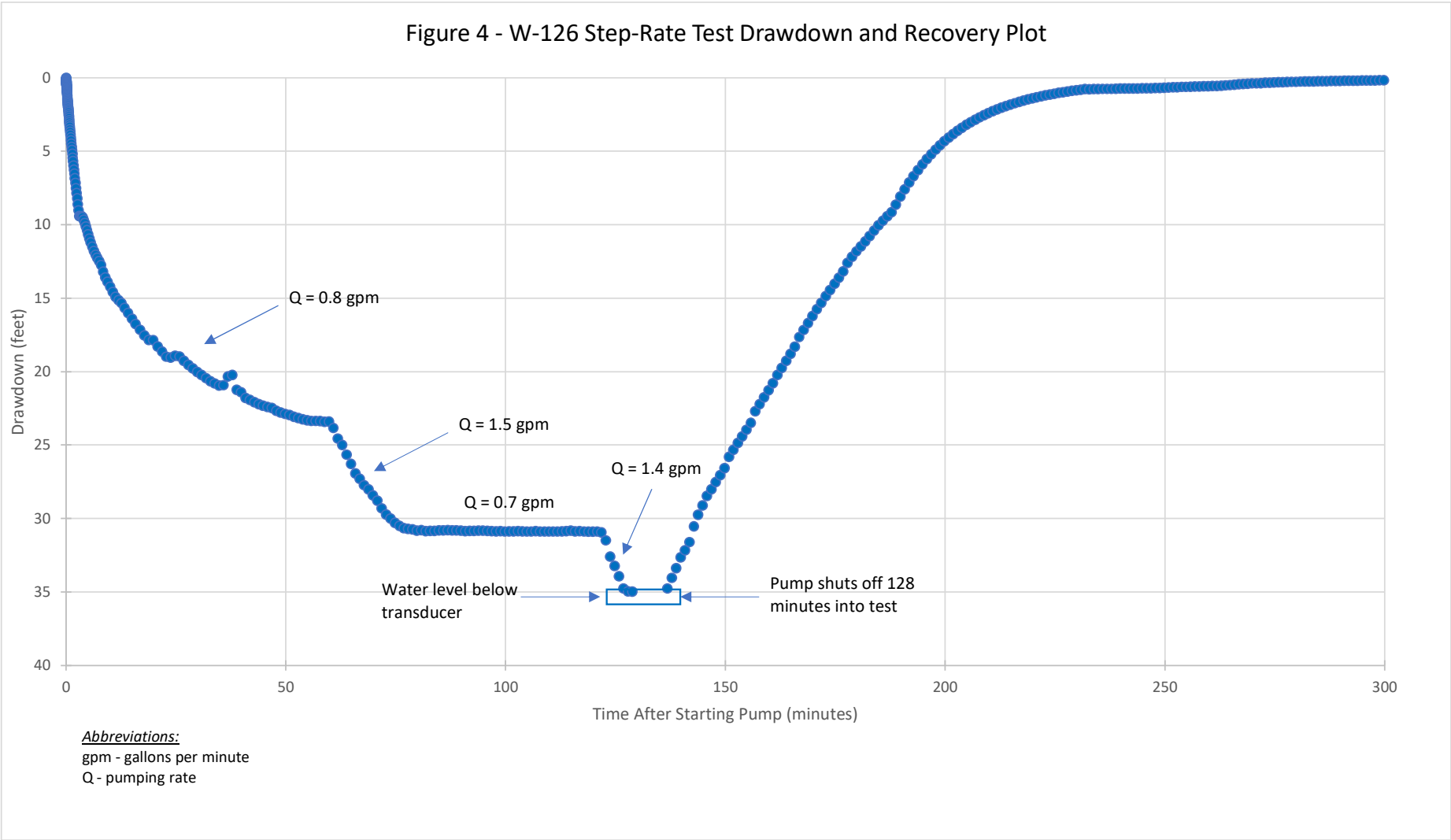
Piezometer Location

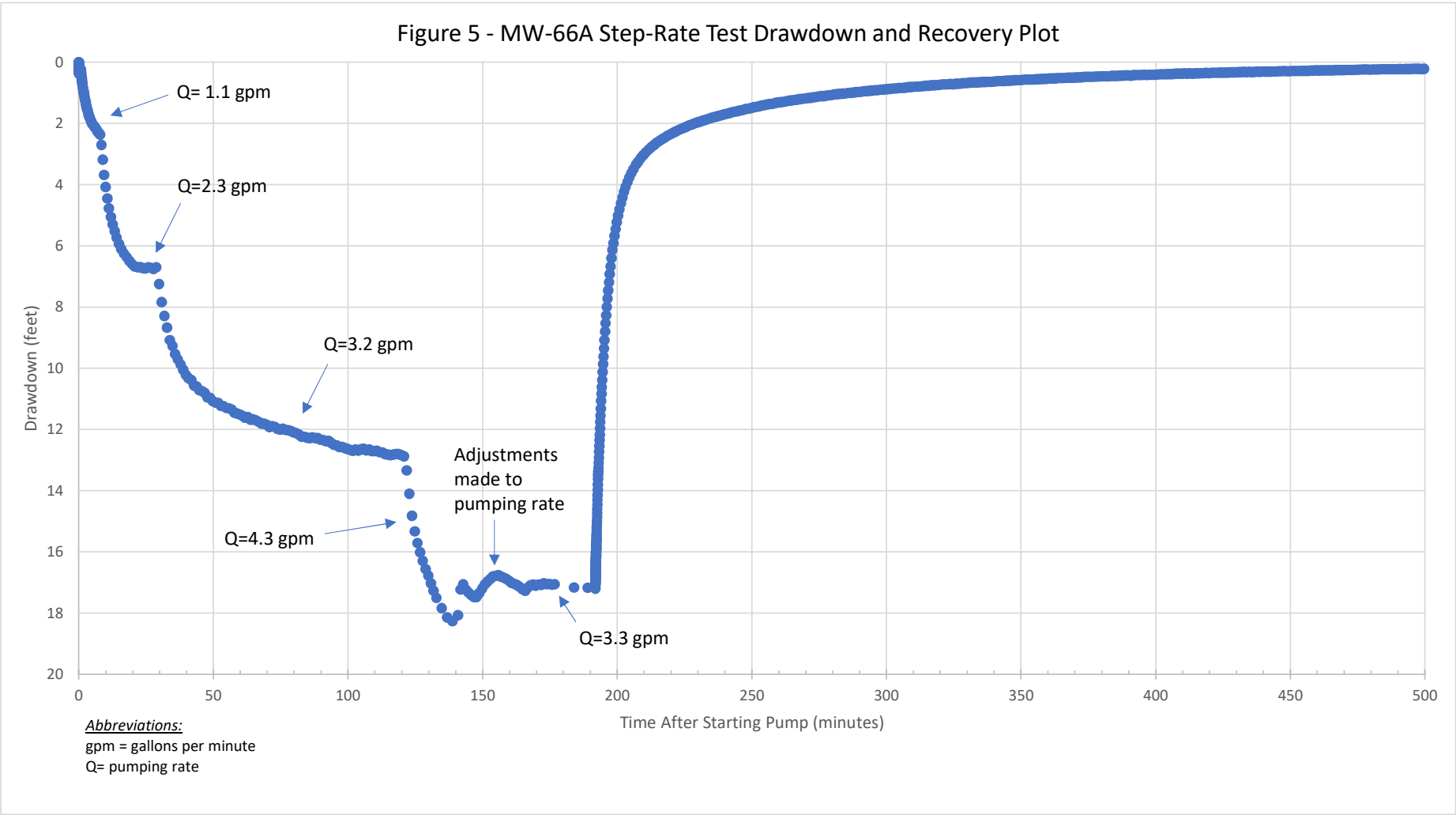
- Alluvial Piezometer
- Moenkopi Formation (Moqui Member) Piezometer
- Approximate Extent of CCR Unit

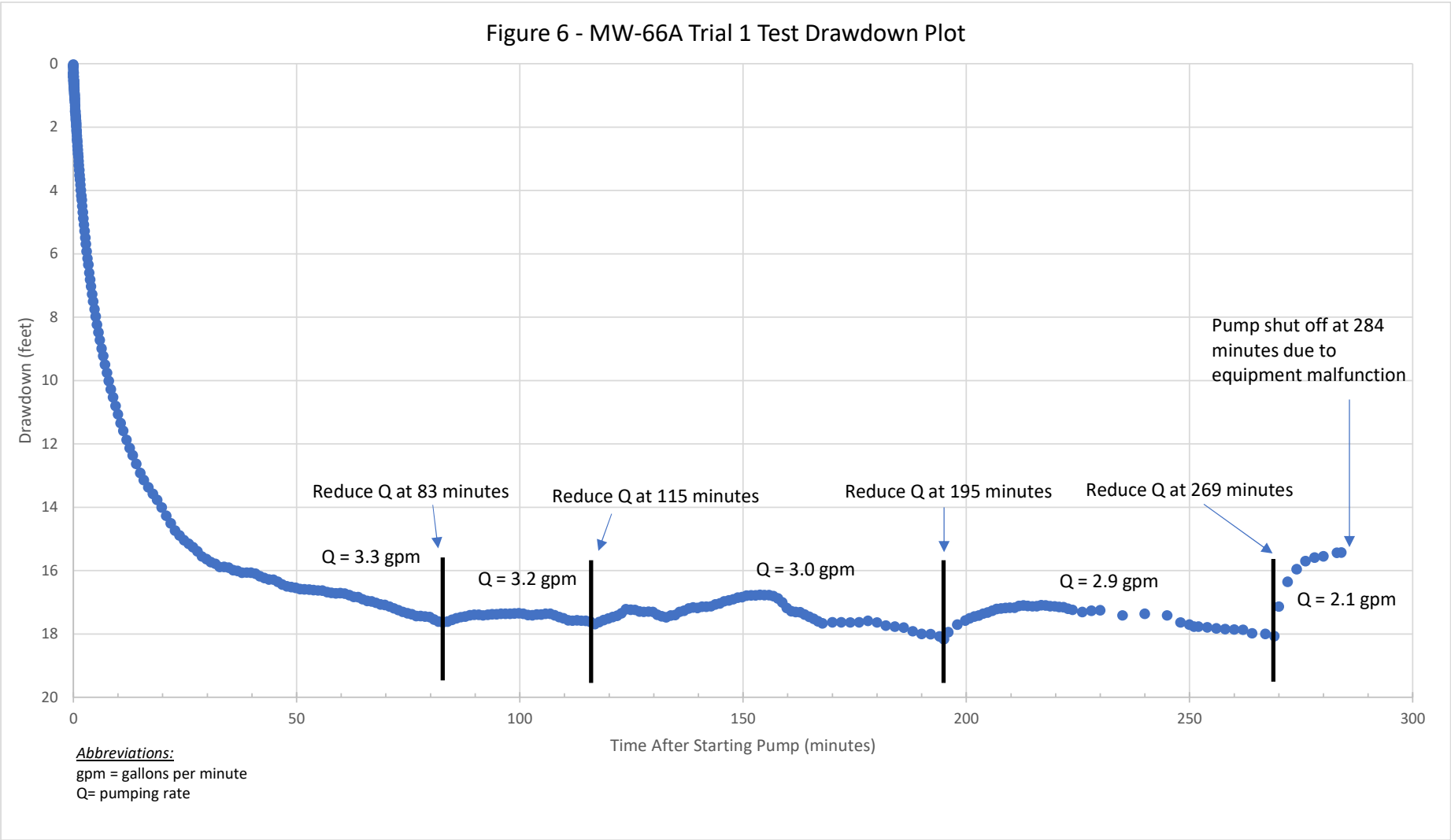


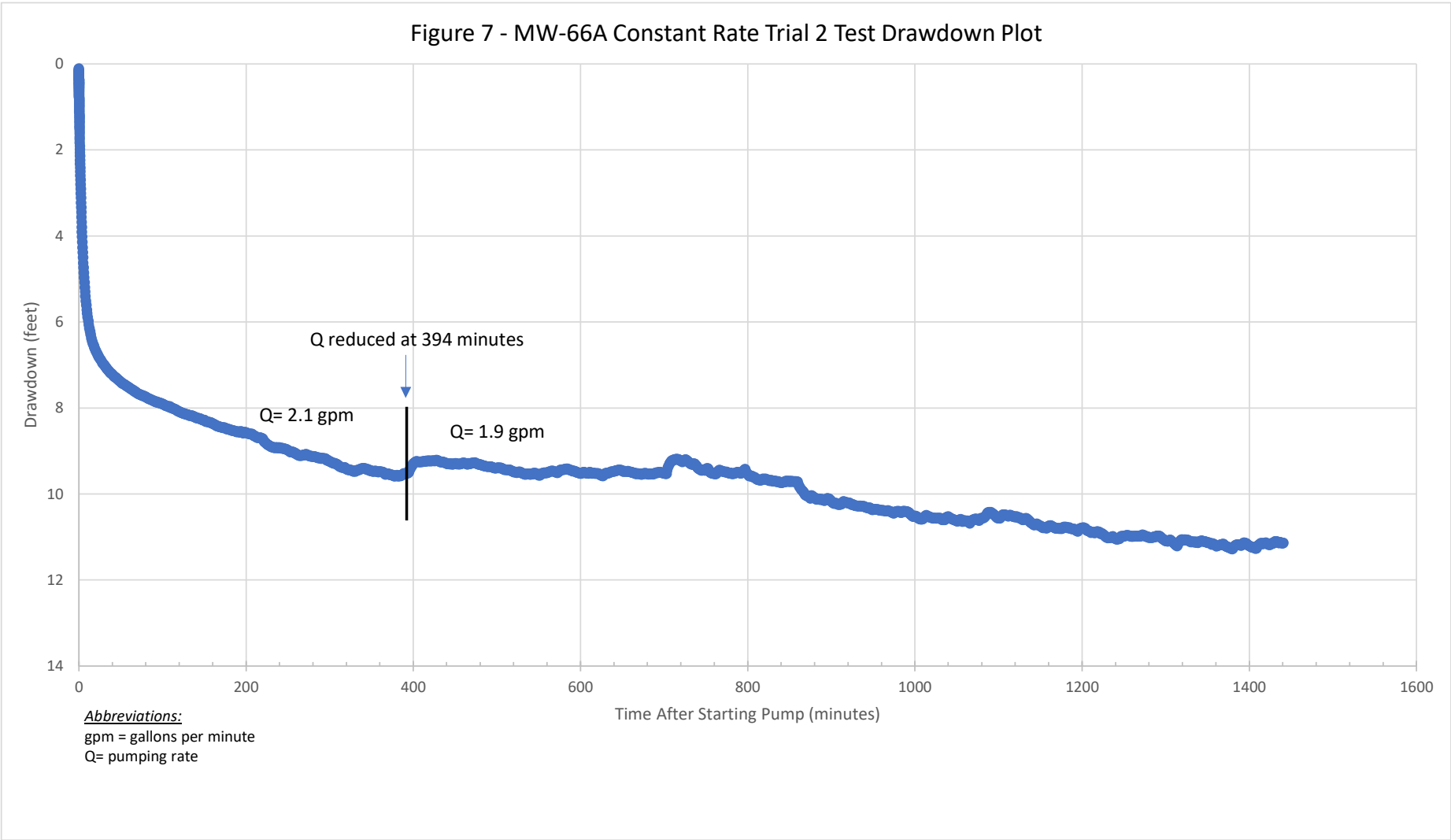
Arizona Public Service Cholla Power Plant Navajo County, Arizona		
Figure 2	Aquifer Test Summary Map	
Job No.	14-2018-2040	
PM:	MBH	
Date:	1/19/2021	
Scale:	1"= 100'	
<small>The map shown here has been created with all due and reasonable care and is strictly for use with Wood Project Number 14-2018-2040. This map has not been certified by a licensed land surveyor, and any third party use of this map comes without warranties of any kind. Wood assumes no liability, direct or indirect, whatsoever for any such third party or unintended use.</small>		

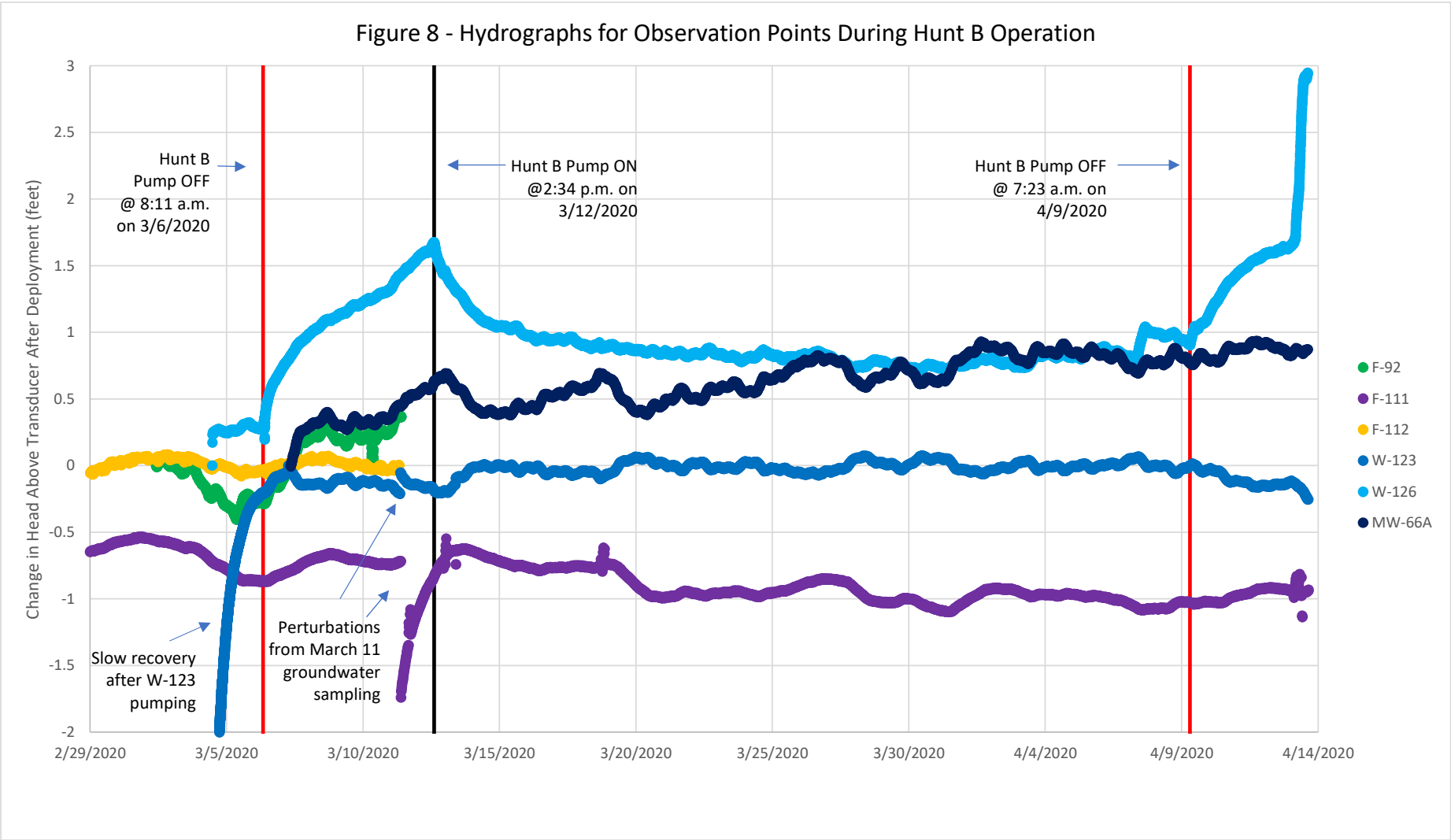


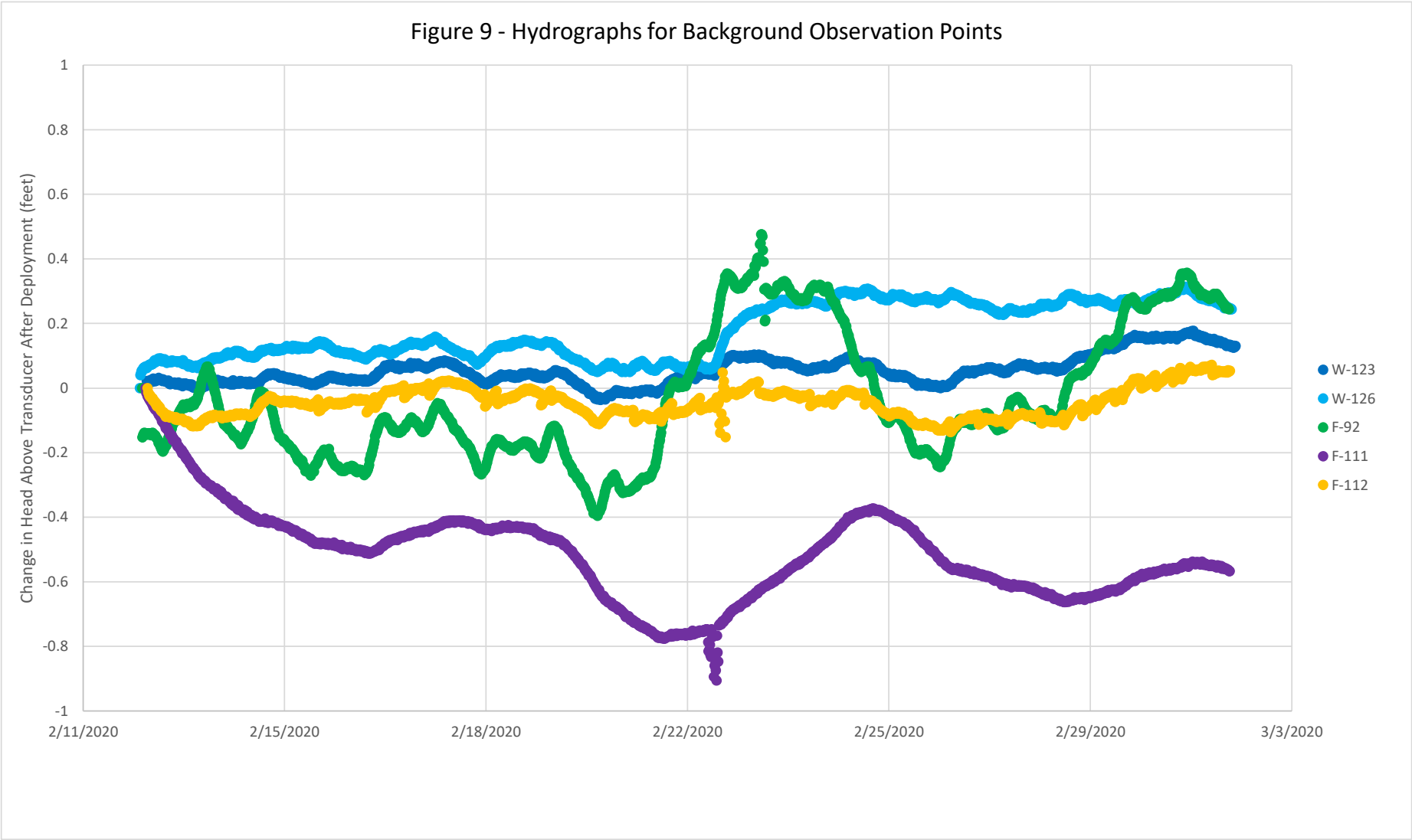


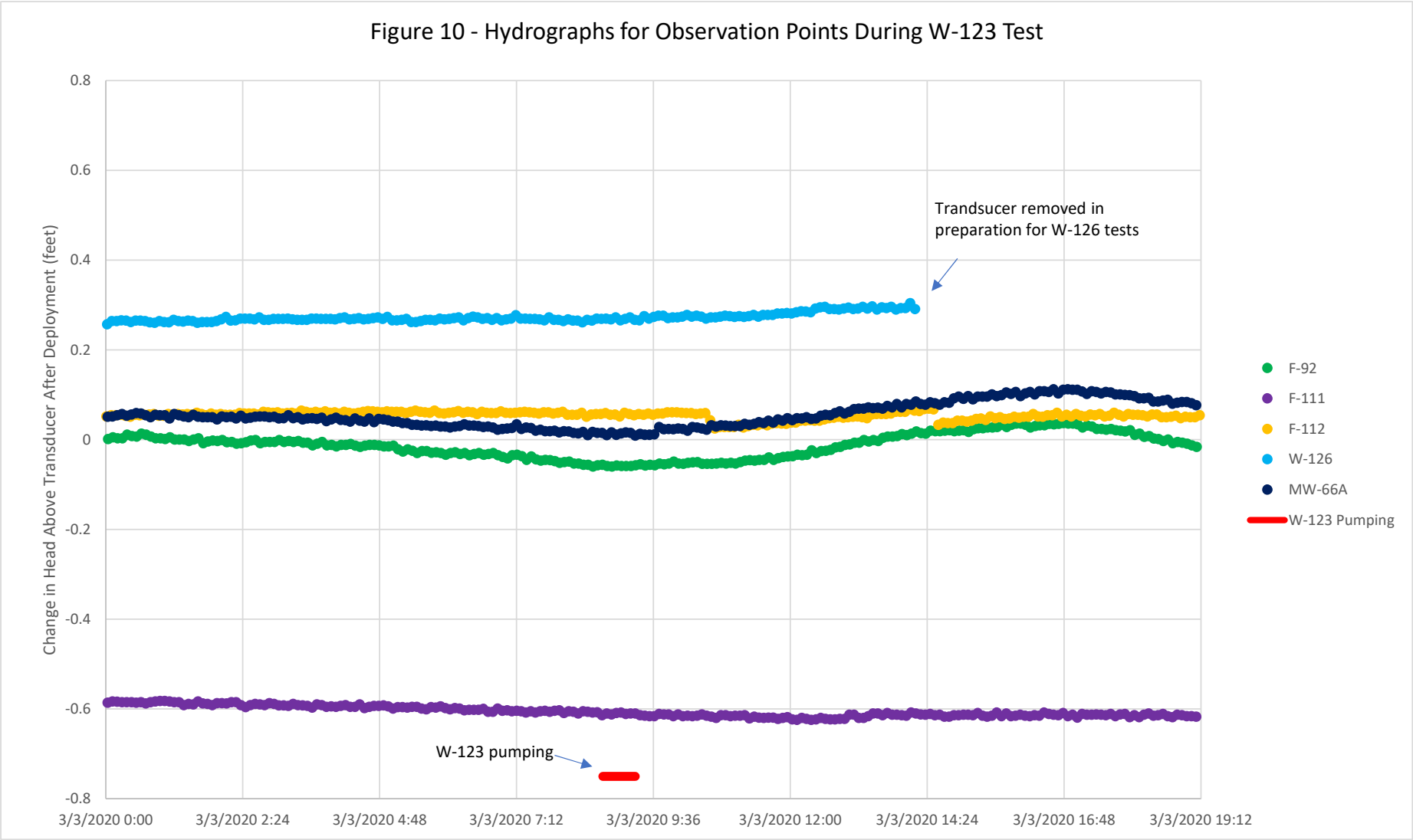


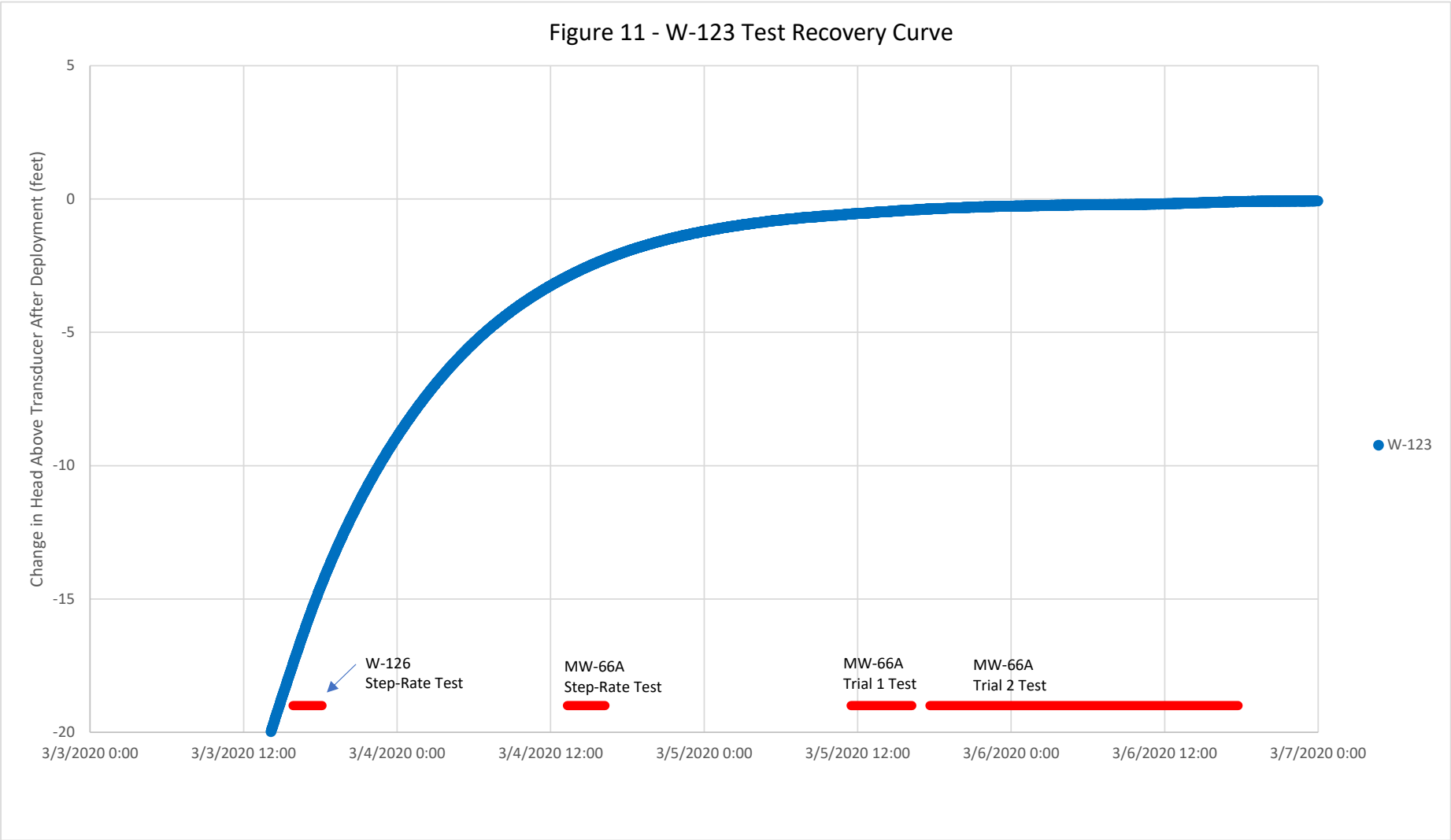


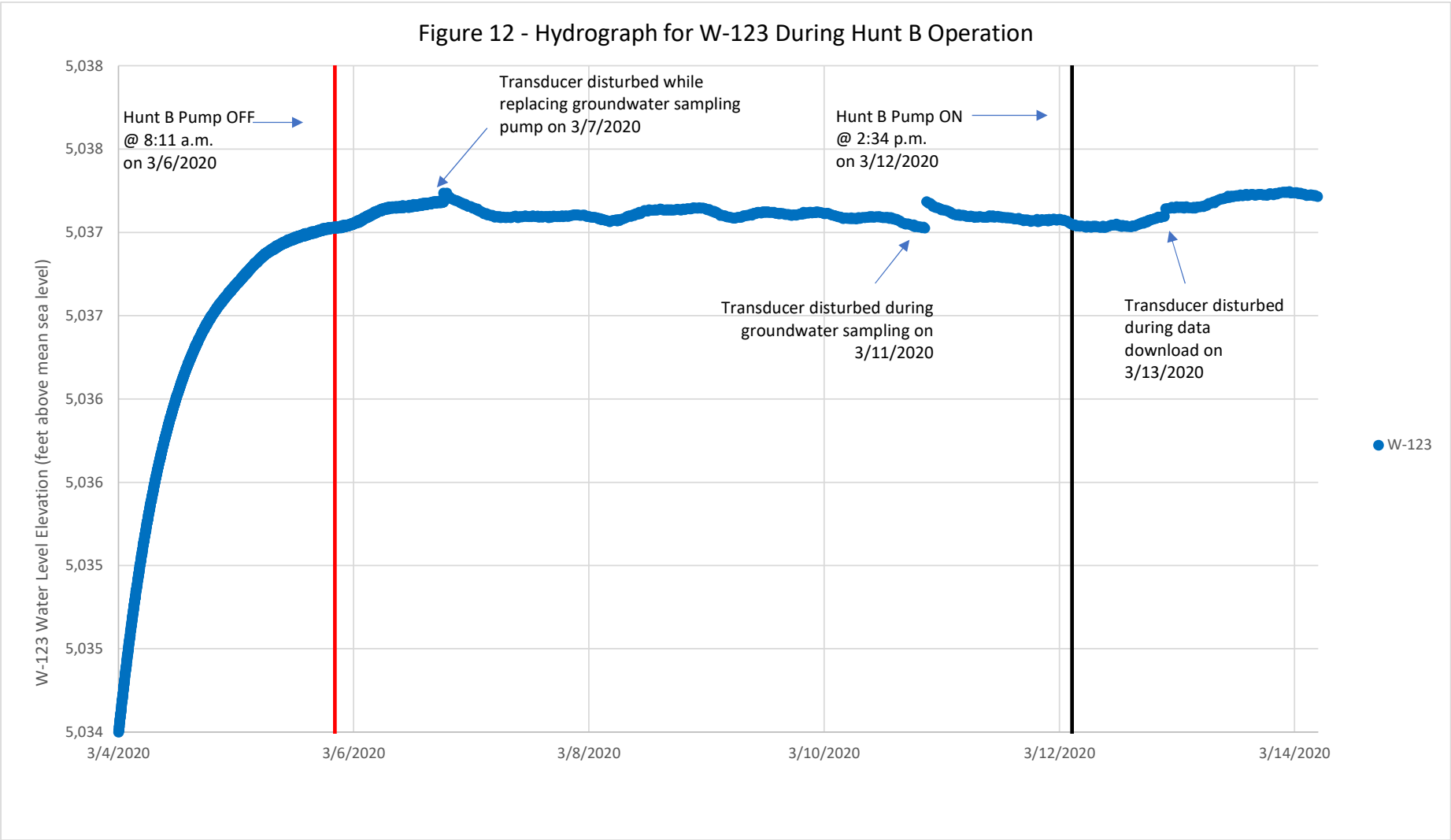


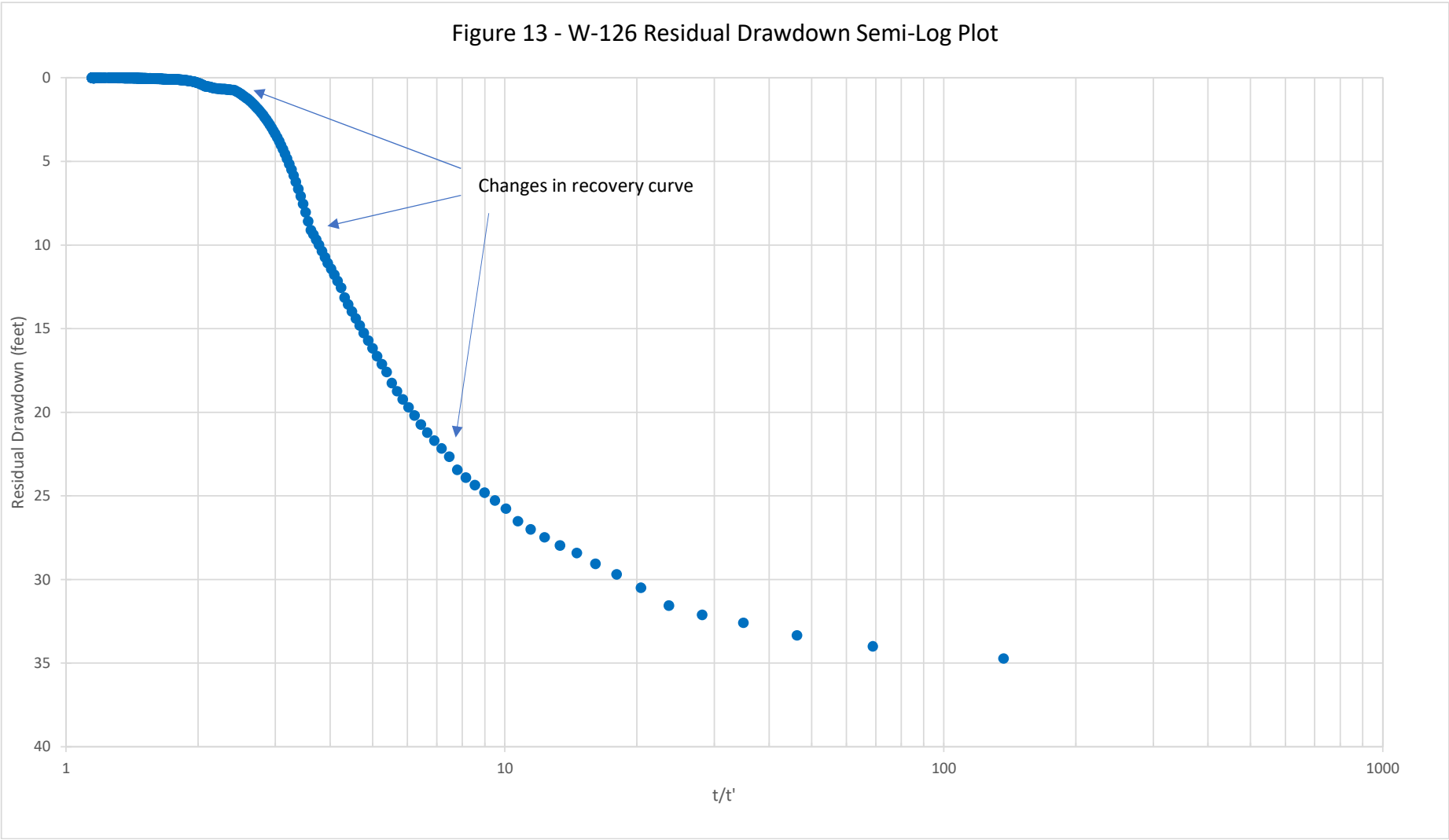


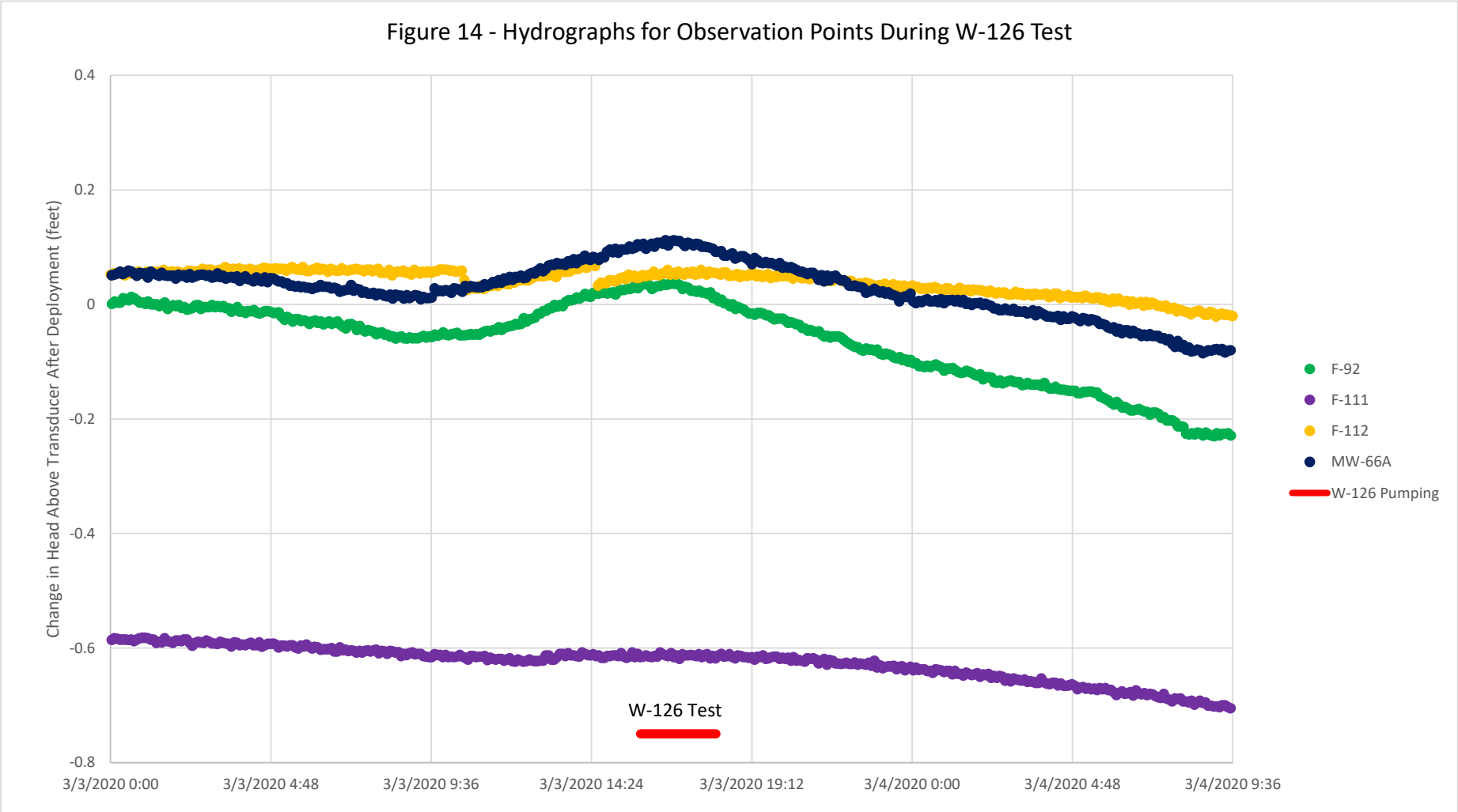


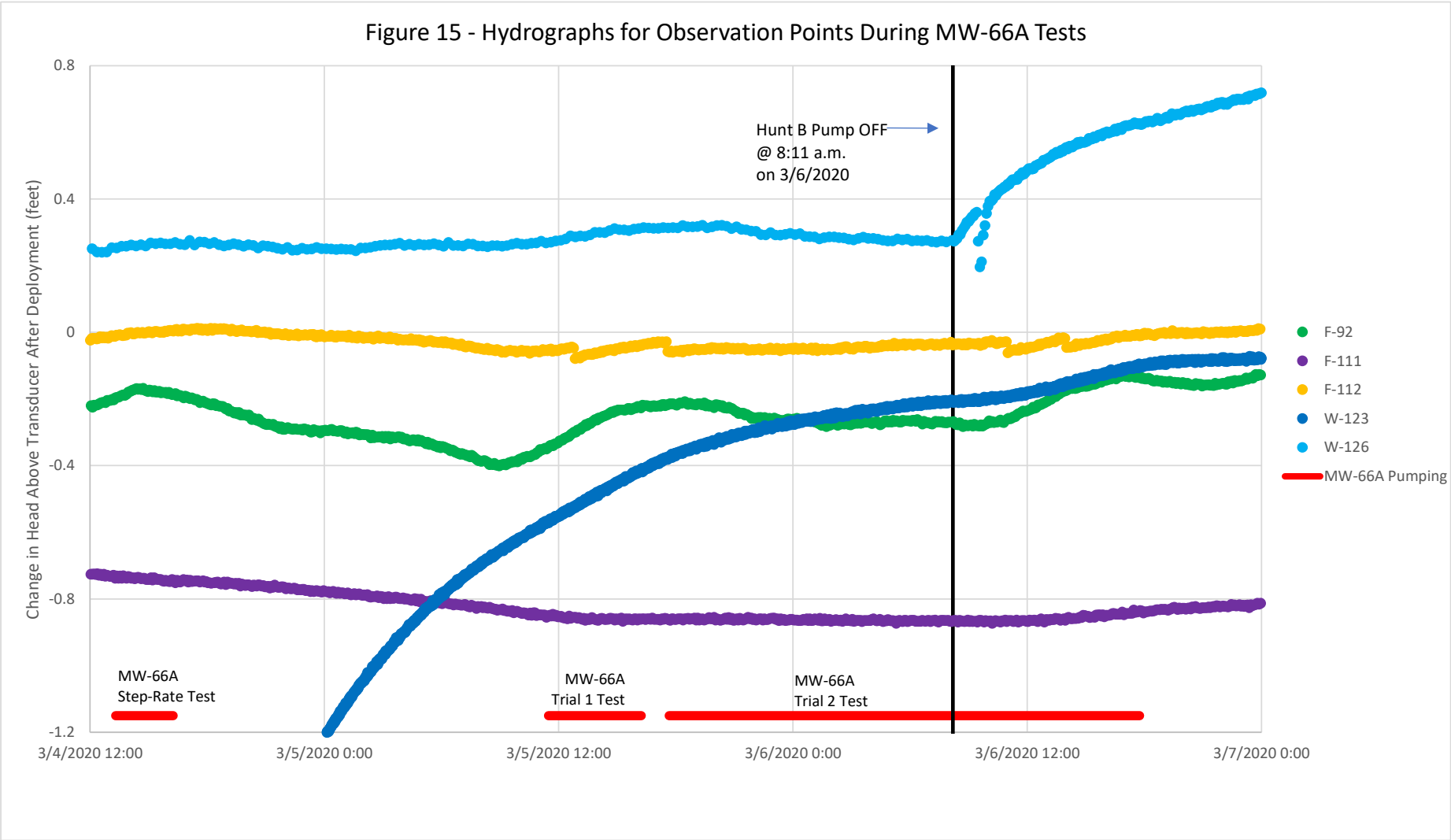


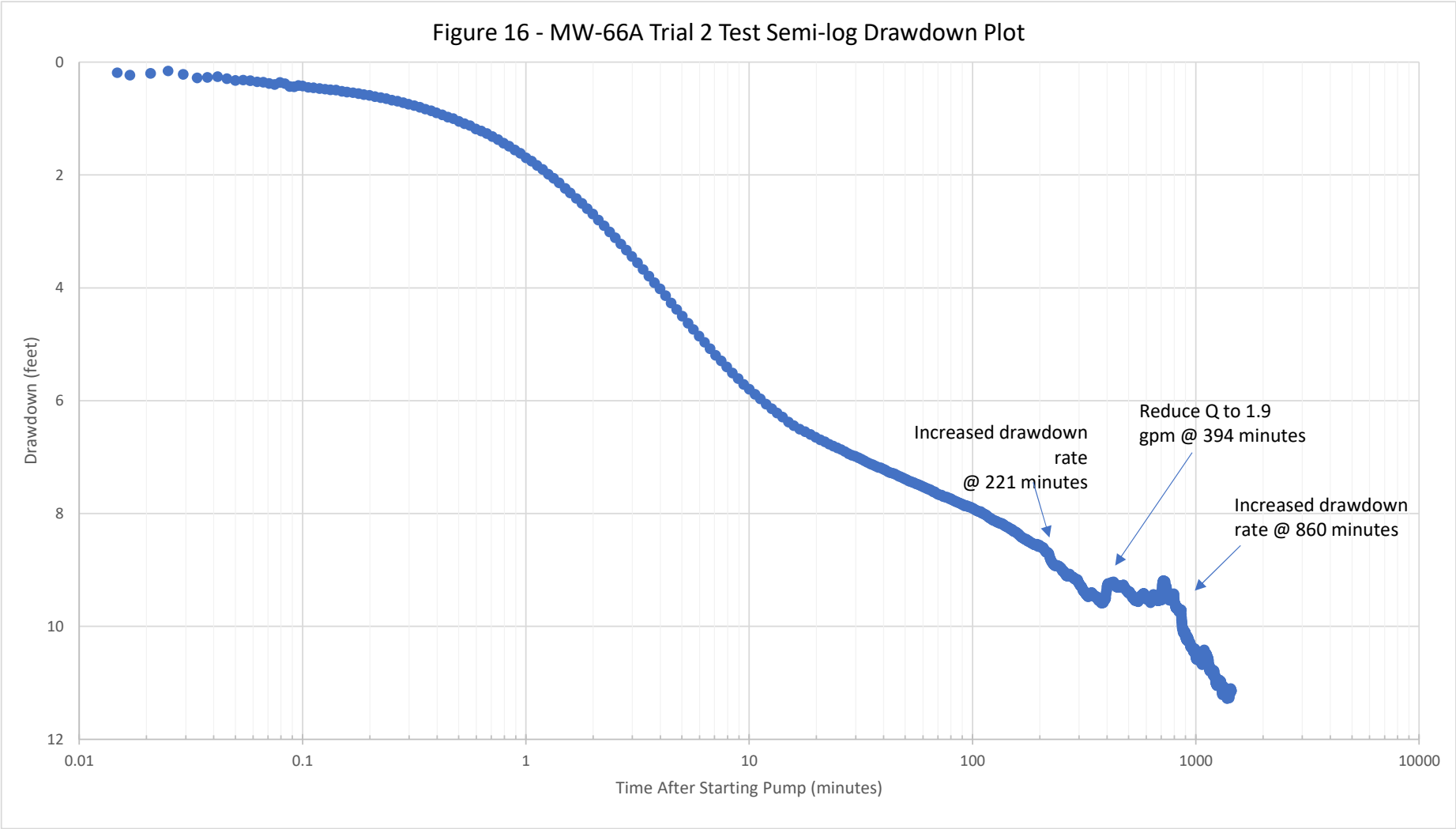


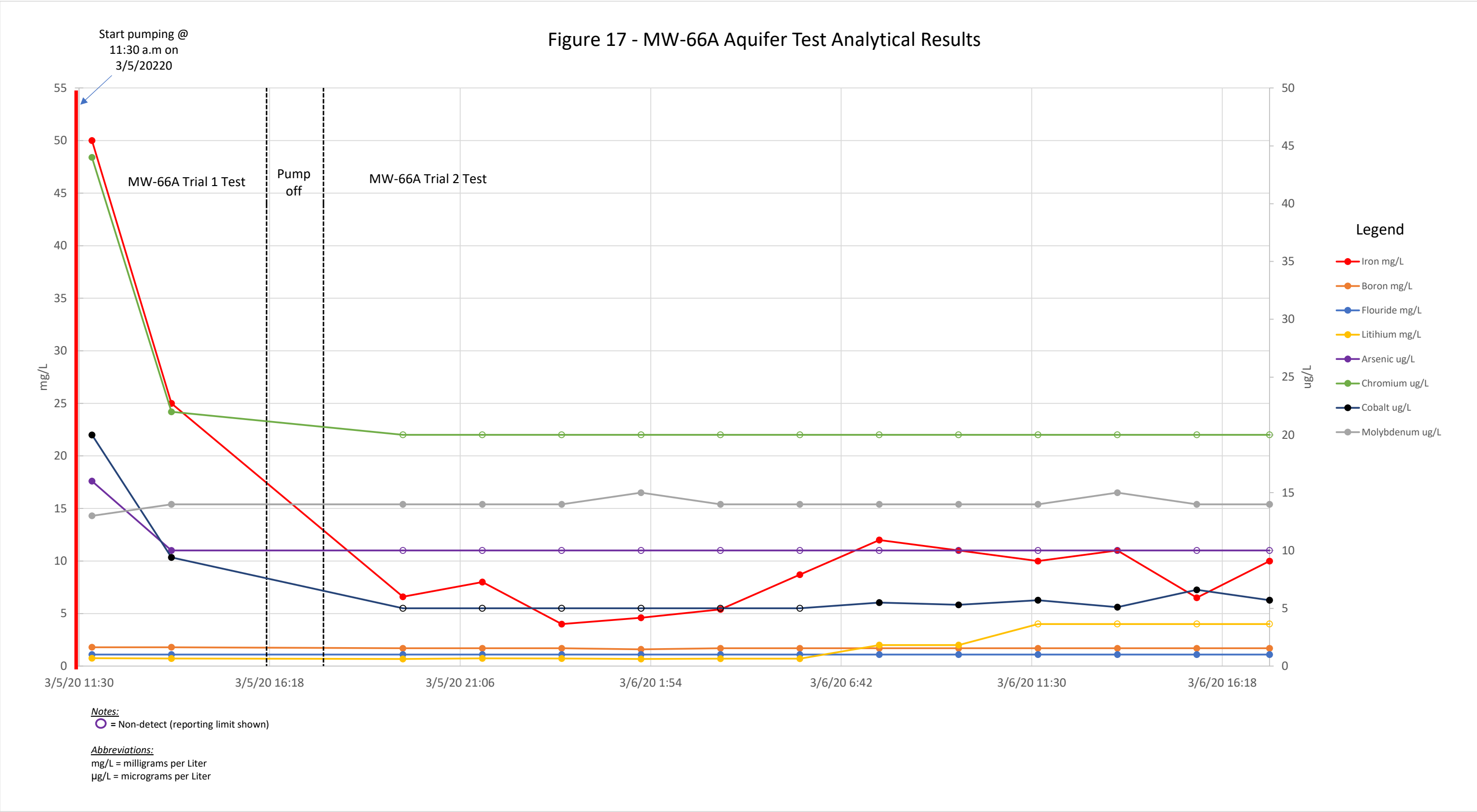












ATTACHMENT A – ANALYTICAL LABORATORY REPORT

ANALYTICAL REPORT

Eurofins TestAmerica, Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-139091-1

Client Project/Site: FAP Aquaifer Test

For:

Wood E&I Solutions Inc
4600 E. Washington St
6th Floor
Phoenix, Arizona 85034

Attn: Dane Andersen



Authorized for release by:
4/2/2020 5:22:35 PM

Rachel Sester, Project Manager I
(602)659-7615
rachel.sester@testamericainc.com

LINKS

Review your project
results through

TotalAccess

Have a Question?



Visit us at:

www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Sample Summary	5
Detection Summary	6
Client Sample Results	10
QC Sample Results	18
QC Association Summary	21
Lab Chronicle	25
Certification Summary	32
Method Summary	33
Chain of Custody	34
Receipt Checklists	36



Definitions/Glossary

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquifer Test

Job ID: 550-139091-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D1	Sample required dilution due to matrix.

Metals

Qualifier	Qualifier Description
B7	Target analyte detected in method blank at or above method reporting limit. Concentration found in the sample was 10 times above the concentration found in the blank.
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
M1	Matrix spike recovery was high, the associated blank spike recovery was acceptable.
M2	Matrix spike recovery was low, the associated blank spike recovery was acceptable.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquifer Test

Job ID: 550-139091-1

Job ID: 550-139091-1

Laboratory: Eurofins TestAmerica, Phoenix

Narrative

Job Narrative 550-139091-1

Comments

No additional comments.

Receipt

The samples were received on 3/9/2020 10:12 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.3° C and 2.2° C.

HPLC/IC

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals

Method 6010C: The following samples were diluted due to the nature of the sample matrix (internal standard failures undiluted and at lower dilutions): GERONIMO-C-03052020 (550-139091-1), GERONIMO-B-03052020 (550-139091-2), HUNT-B-03052020 (550-139091-3), MW66A-AQTEST-03052020-1 (550-139091-4), MW66A-AQTEST-03052020-2 (550-139091-5), MW66A-AQTEST-03052020-3 (550-139091-6), MW66A-AQTEST-03052020-4 (550-139091-7), MW66A-AQTEST-03052020-5 (550-139091-8), MW66A-AQTEST-03062020-6 (550-139091-9), MW66A-AQTEST-03062020-7 (550-139091-10), MW66A-AQTEST-03062020-8 (550-139091-11), MW66A-AQTEST-03062020-9 (550-139091-12), MW66A-AQTEST-03062020-10 (550-139091-13), MW66A-AQTEST-03062020-11 (550-139091-14), MW66A-AQTEST-03062020-12 (550-139091-15), MW66A-AQTEST-03062020-13 (550-139091-16), MW66A-AQTEST-03062020-14 (550-139091-17), HUNTA-03072020 (550-139091-18), HUNTC-03072020 (550-139091-19), MW66A-AQTEST-03052020-13 (550-139091-20), (550-139091-B-3-C MS ^10), (550-139091-B-3-D MSD ^10) and (550-139091-B-3-E PDS ^10). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquifer Test

Job ID: 550-139091-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
550-139091-1	GERONIMO-C-03052020	Water	03/05/20 09:25	03/09/20 10:12	
550-139091-2	GERONIMO-B-03052020	Water	03/05/20 09:50	03/09/20 10:12	
550-139091-3	HUNT-B-03052020	Water	03/05/20 10:30	03/09/20 10:12	
550-139091-4	MW66A-AQTEST-03052020-1	Water	03/05/20 11:50	03/09/20 10:12	
550-139091-5	MW66A-AQTEST-03052020-2	Water	03/05/20 13:50	03/09/20 10:12	
550-139091-6	MW66A-AQTEST-03052020-3	Water	03/05/20 19:40	03/09/20 10:12	
550-139091-7	MW66A-AQTEST-03052020-4	Water	03/05/20 21:40	03/09/20 10:12	
550-139091-8	MW66A-AQTEST-03052020-5	Water	03/05/20 23:40	03/09/20 10:12	
550-139091-9	MW66A-AQTEST-03062020-6	Water	03/06/20 01:40	03/09/20 10:12	
550-139091-10	MW66A-AQTEST-03062020-7	Water	03/06/20 03:40	03/09/20 10:12	
550-139091-11	MW66A-AQTEST-03062020-8	Water	03/06/20 05:40	03/09/20 10:12	
550-139091-12	MW66A-AQTEST-03062020-9	Water	03/06/20 07:40	03/09/20 10:12	
550-139091-13	MW66A-AQTEST-03062020-10	Water	03/06/20 09:40	03/09/20 10:12	
550-139091-14	MW66A-AQTEST-03062020-11	Water	03/06/20 11:40	03/09/20 10:12	
550-139091-15	MW66A-AQTEST-03062020-12	Water	03/06/20 13:40	03/09/20 10:12	
550-139091-16	MW66A-AQTEST-03062020-13	Water	03/06/20 15:40	03/09/20 10:12	
550-139091-17	MW66A-AQTEST-03062020-14	Water	03/06/20 17:30	03/09/20 10:12	
550-139091-18	HUNTA-03072020	Water	03/07/20 08:30	03/09/20 10:12	
550-139091-19	HUNTC-03072020	Water	03/07/20 08:40	03/09/20 10:12	
550-139091-20	MW66A-AQTEST-03052020-13	Water	03/05/20 15:50	03/09/20 10:12	

Detection Summary

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Client Sample ID: GERONIMO-C-03052020

Lab Sample ID: 550-139091-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	6.7	D1	2.0		mg/L	5		300.0	Total/NA
Boron	67	D1	0.50		mg/L	10		6010C	Total/NA
Iron	0.11		0.10		mg/L	1		6010C	Total/NA
Lithium	1.2	M1	0.20		mg/L	1		6010C	Total/NA
Arsenic	10	D1	10		ug/L	10		6020B	Total/NA
Molybdenum	25	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	180	D1 M2	25		ug/L	10		6020B	Total/NA

Client Sample ID: GERONIMO-B-03052020

Lab Sample ID: 550-139091-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.6	D1	0.80		mg/L	2		300.0	Total/NA
Boron	20	D1	0.50		mg/L	10		6010C	Total/NA
Iron	34		0.10		mg/L	1		6010C	Total/NA
Lithium	0.71		0.20		mg/L	1		6010C	Total/NA
Arsenic	24	D1	10		ug/L	10		6020B	Total/NA
Chromium	450	D1	20		ug/L	10		6020B	Total/NA
Molybdenum	700	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	920	D2	25		ug/L	10		6020B	Total/NA

Client Sample ID: HUNT-B-03052020

Lab Sample ID: 550-139091-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	3.2	D1	0.80		mg/L	2		300.0	Total/NA
Boron	31	D1 M3	0.50		mg/L	10		6010C	Total/NA
Lithium	0.72		0.20		mg/L	1		6010C	Total/NA
Molybdenum	410	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	890	D1	25		ug/L	10		6020B	Total/NA

Client Sample ID: MW66A-AQTEST-03052020-1

Lab Sample ID: 550-139091-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Boron	1.8	D1	0.50		mg/L	10		6010C	Total/NA
Iron	50		0.10		mg/L	1		6010C	Total/NA
Lithium	0.75		0.20		mg/L	1		6010C	Total/NA
Arsenic	16	D1	10		ug/L	10		6020B	Total/NA
Chromium	44	D1	20		ug/L	10		6020B	Total/NA
Cobalt	20	D1	5.0		ug/L	10		6020B	Total/NA
Molybdenum	13	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	4900	D2	25		ug/L	10		6020B	Total/NA

Client Sample ID: MW66A-AQTEST-03052020-2

Lab Sample ID: 550-139091-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Boron	1.8	D1	0.50		mg/L	10		6010C	Total/NA
Iron	25		0.10		mg/L	1		6010C	Total/NA
Lithium	0.73		0.20		mg/L	1		6010C	Total/NA
Arsenic	10	D1	10		ug/L	10		6020B	Total/NA
Chromium	22	D1	20		ug/L	10		6020B	Total/NA
Cobalt	9.4	D1	5.0		ug/L	10		6020B	Total/NA
Molybdenum	14	B7 D1	5.0		ug/L	10		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Client Sample ID: MW66A-AQTEST-03052020-2 (Continued)

Lab Sample ID: 550-139091-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	4100	D2	25		ug/L	10		6020B	Total/NA

Client Sample ID: MW66A-AQTEST-03052020-3

Lab Sample ID: 550-139091-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Boron	1.7	D1	0.50		mg/L	10		6010C	Total/NA
Iron	6.6		0.10		mg/L	1		6010C	Total/NA
Lithium	0.68		0.20		mg/L	1		6010C	Total/NA
Molybdenum	14	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	3800	D2	25		ug/L	10		6020B	Total/NA

Client Sample ID: MW66A-AQTEST-03052020-4

Lab Sample ID: 550-139091-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Boron	1.7	D1	0.50		mg/L	10		6010C	Total/NA
Iron	8.0		0.10		mg/L	1		6010C	Total/NA
Lithium	0.74		0.20		mg/L	1		6010C	Total/NA
Molybdenum	14	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	3800	D2	25		ug/L	10		6020B	Total/NA

Client Sample ID: MW66A-AQTEST-03052020-5

Lab Sample ID: 550-139091-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Boron	1.7	D1	0.50		mg/L	10		6010C	Total/NA
Iron	4.0		0.10		mg/L	1		6010C	Total/NA
Lithium	0.72		0.20		mg/L	1		6010C	Total/NA
Molybdenum	14	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	3600	D2	25		ug/L	10		6020B	Total/NA

Client Sample ID: MW66A-AQTEST-03062020-6

Lab Sample ID: 550-139091-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Boron	1.6	D1	1.0		mg/L	20		6010C	Total/NA
Iron	4.6		0.10		mg/L	1		6010C	Total/NA
Lithium	0.69		0.20		mg/L	1		6010C	Total/NA
Molybdenum	15	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	3800	D2	25		ug/L	10		6020B	Total/NA

Client Sample ID: MW66A-AQTEST-03062020-7

Lab Sample ID: 550-139091-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Boron	1.7	D1	0.50		mg/L	10		6010C	Total/NA
Iron	5.4		0.10		mg/L	1		6010C	Total/NA
Lithium	0.71		0.20		mg/L	1		6010C	Total/NA
Molybdenum	14	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	3700	D2	25		ug/L	10		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Client Sample ID: MW66A-AQTEST-03062020-8

Lab Sample ID: 550-139091-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Boron	1.7	D1	0.50		mg/L	10		6010C	Total/NA
Iron	8.7		0.10		mg/L	1		6010C	Total/NA
Lithium	0.71		0.20		mg/L	1		6010C	Total/NA
Molybdenum	14	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	3600	D2	25		ug/L	10		6020B	Total/NA

Client Sample ID: MW66A-AQTEST-03062020-9

Lab Sample ID: 550-139091-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Boron	1.7	D1	0.50		mg/L	10		6010C	Total/NA
Iron	12	D1	1.0		mg/L	10		6010C	Total/NA
Cobalt	5.5	D1	5.0		ug/L	10		6020B	Total/NA
Molybdenum	14	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	3700	D2	25		ug/L	10		6020B	Total/NA

Client Sample ID: MW66A-AQTEST-03062020-10

Lab Sample ID: 550-139091-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Boron	1.7	D1	0.50		mg/L	10		6010C	Total/NA
Iron	11	D1	1.0		mg/L	10		6010C	Total/NA
Cobalt	5.3	D1	5.0		ug/L	10		6020B	Total/NA
Molybdenum	14	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	4000	D2	25		ug/L	10		6020B	Total/NA

Client Sample ID: MW66A-AQTEST-03062020-11

Lab Sample ID: 550-139091-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Boron	1.7	D1	1.0		mg/L	20		6010C	Total/NA
Iron	10	D1	2.0		mg/L	20		6010C	Total/NA
Cobalt	5.7	D1	5.0		ug/L	10		6020B	Total/NA
Molybdenum	14	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	3900	D2	25		ug/L	10		6020B	Total/NA

Client Sample ID: MW66A-AQTEST-03062020-12

Lab Sample ID: 550-139091-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Boron	1.7	D1	1.0		mg/L	20		6010C	Total/NA
Iron	11	D1	2.0		mg/L	20		6010C	Total/NA
Cobalt	5.1	D1	5.0		ug/L	10		6020B	Total/NA
Molybdenum	15	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	4000	D2	25		ug/L	10		6020B	Total/NA

Client Sample ID: MW66A-AQTEST-03062020-13

Lab Sample ID: 550-139091-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Boron	1.7	D1	1.0		mg/L	20		6010C	Total/NA
Iron	6.5	D1	2.0		mg/L	20		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Client Sample ID: MW66A-AQTEST-03062020-13 (Continued)

Lab Sample ID: 550-139091-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Molybdenum	14	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	3800	D2	25		ug/L	10		6020B	Total/NA

Client Sample ID: MW66A-AQTEST-03062020-14

Lab Sample ID: 550-139091-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Boron	1.7	D1	1.0		mg/L	20		6010C	Total/NA
Iron	10	D1	2.0		mg/L	20		6010C	Total/NA
Cobalt	5.7	D1	5.0		ug/L	10		6020B	Total/NA
Molybdenum	14	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	4000	D2	25		ug/L	10		6020B	Total/NA

Client Sample ID: HUNTA-03072020

Lab Sample ID: 550-139091-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.5	D1	0.80		mg/L	2		300.0	Total/NA
Boron	31	D1	0.50		mg/L	10		6010C	Total/NA
Molybdenum	220	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	230	D1	25		ug/L	10		6020B	Total/NA

Client Sample ID: HUNTC-03072020

Lab Sample ID: 550-139091-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.5	D1	0.80		mg/L	2		300.0	Total/NA
Boron	31	D1	1.0		mg/L	20		6010C	Total/NA
Molybdenum	230	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	230	D1	25		ug/L	10		6020B	Total/NA

Client Sample ID: MW66A-AQTEST-03052020-13

Lab Sample ID: 550-139091-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Boron	1.6	D1	1.0		mg/L	20		6010C	Total/NA
Iron	14	D1	2.0		mg/L	20		6010C	Total/NA
Cobalt	6.6	D1	5.0		ug/L	10		6020B	Total/NA
Molybdenum	14	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	4100	D2	25		ug/L	10		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquifer Test

Job ID: 550-139091-1

Client Sample ID: GERONIMO-C-03052020

Lab Sample ID: 550-139091-1

Date Collected: 03/05/20 09:25

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	6.7	D1	2.0		mg/L			03/20/20 00:00	5

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	67	D1	0.50		mg/L		03/26/20 10:53	04/02/20 10:01	10
Iron	0.11		0.10		mg/L		03/12/20 05:01	03/24/20 10:57	1
Lithium	1.2	M1	0.20		mg/L		03/12/20 05:01	03/24/20 10:57	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	10	D1	10		ug/L		03/12/20 04:38	03/22/20 13:54	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:11	10
Cobalt	ND	D1	5.0		ug/L		03/12/20 04:38	03/22/20 13:54	10
Molybdenum	25	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 13:54	10
Manganese	180	D1 M2	25		ug/L		03/12/20 04:38	03/22/20 16:11	10

Client Sample ID: GERONIMO-B-03052020

Lab Sample ID: 550-139091-2

Date Collected: 03/05/20 09:50

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.6	D1	0.80		mg/L			03/20/20 00:18	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	20	D1	0.50		mg/L		03/26/20 10:53	04/02/20 10:05	10
Iron	34		0.10		mg/L		03/12/20 05:01	03/24/20 11:17	1
Lithium	0.71		0.20		mg/L		03/12/20 05:01	03/24/20 11:17	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	24	D1	10		ug/L		03/12/20 04:38	03/22/20 14:00	10
Chromium	450	D1	20		ug/L		03/12/20 04:38	03/22/20 16:17	10
Cobalt	ND	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:00	10
Molybdenum	700	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:00	10
Manganese	920	D2	25		ug/L		03/12/20 04:38	03/22/20 16:17	10

Client Sample ID: HUNT-B-03052020

Lab Sample ID: 550-139091-3

Date Collected: 03/05/20 10:30

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	3.2	D1	0.80		mg/L			03/20/20 00:37	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	31	D1 M3	0.50		mg/L		03/26/20 10:53	04/02/20 09:41	10
Iron	ND		0.10		mg/L		03/12/20 05:01	03/24/20 11:21	1
Lithium	0.72		0.20		mg/L		03/12/20 05:01	03/24/20 11:21	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquifer Test

Job ID: 550-139091-1

Client Sample ID: HUNT-B-03052020

Lab Sample ID: 550-139091-3

Date Collected: 03/05/20 10:30

Matrix: Water

Date Received: 03/09/20 10:12

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	10		ug/L		03/12/20 04:38	03/22/20 14:02	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:19	10
Cobalt	ND	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:02	10
Molybdenum	410	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:02	10
Manganese	890	D1	25		ug/L		03/12/20 04:38	03/22/20 16:19	10

Client Sample ID: MW66A-AQTEST-03052020-1

Lab Sample ID: 550-139091-4

Date Collected: 03/05/20 11:50

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.1	D1	0.80		mg/L			03/20/20 00:55	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.8	D1	0.50		mg/L		03/26/20 10:53	04/02/20 10:09	10
Iron	50		0.10		mg/L		03/12/20 05:01	03/24/20 11:25	1
Lithium	0.75		0.20		mg/L		03/12/20 05:01	03/24/20 11:25	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	16	D1	10		ug/L		03/12/20 04:38	03/22/20 14:04	10
Chromium	44	D1	20		ug/L		03/12/20 04:38	03/22/20 16:22	10
Cobalt	20	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:04	10
Molybdenum	13	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:04	10
Manganese	4900	D2	25		ug/L		03/12/20 04:38	03/22/20 16:22	10

Client Sample ID: MW66A-AQTEST-03052020-2

Lab Sample ID: 550-139091-5

Date Collected: 03/05/20 13:50

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.1	D1	0.80		mg/L			03/20/20 01:13	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.8	D1	0.50		mg/L		03/26/20 10:53	04/02/20 10:13	10
Iron	25		0.10		mg/L		03/12/20 05:01	03/24/20 11:29	1
Lithium	0.73		0.20		mg/L		03/12/20 05:01	03/24/20 11:29	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	10	D1	10		ug/L		03/12/20 04:38	03/22/20 14:06	10
Chromium	22	D1	20		ug/L		03/12/20 04:38	03/22/20 16:24	10
Cobalt	9.4	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:06	10
Molybdenum	14	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:06	10
Manganese	4100	D2	25		ug/L		03/12/20 04:38	03/22/20 16:24	10

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquifer Test

Job ID: 550-139091-1

Client Sample ID: MW66A-AQTEST-03052020-3

Lab Sample ID: 550-139091-6

Date Collected: 03/05/20 19:40

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.1	D1	0.80		mg/L			03/20/20 01:32	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.7	D1	0.50		mg/L		03/26/20 10:53	04/02/20 10:17	10
Iron	6.6		0.10		mg/L		03/12/20 05:01	03/24/20 11:33	1
Lithium	0.68		0.20		mg/L		03/12/20 05:01	03/24/20 11:33	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	10		ug/L		03/12/20 04:38	03/22/20 14:08	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:26	10
Cobalt	ND	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:08	10
Molybdenum	14	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:08	10
Manganese	3800	D2	25		ug/L		03/12/20 04:38	03/22/20 16:26	10

Client Sample ID: MW66A-AQTEST-03052020-4

Lab Sample ID: 550-139091-7

Date Collected: 03/05/20 21:40

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.1	D1	0.80		mg/L			03/20/20 01:50	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.7	D1	0.50		mg/L		03/26/20 10:53	04/02/20 10:21	10
Iron	8.0		0.10		mg/L		03/12/20 05:01	03/24/20 11:37	1
Lithium	0.74		0.20		mg/L		03/12/20 05:01	03/24/20 11:37	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	10		ug/L		03/12/20 04:38	03/22/20 14:11	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:28	10
Cobalt	ND	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:11	10
Molybdenum	14	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:11	10
Manganese	3800	D2	25		ug/L		03/12/20 04:38	03/22/20 16:28	10

Client Sample ID: MW66A-AQTEST-03052020-5

Lab Sample ID: 550-139091-8

Date Collected: 03/05/20 23:40

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.1	D1	0.80		mg/L			03/20/20 02:09	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.7	D1	0.50		mg/L		03/26/20 10:53	04/02/20 10:25	10
Iron	4.0		0.10		mg/L		03/12/20 05:01	03/24/20 11:41	1
Lithium	0.72		0.20		mg/L		03/12/20 05:01	03/24/20 11:41	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquifer Test

Job ID: 550-139091-1

Client Sample ID: MW66A-AQTEST-03052020-5

Lab Sample ID: 550-139091-8

Date Collected: 03/05/20 23:40

Matrix: Water

Date Received: 03/09/20 10:12

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	10		ug/L		03/12/20 04:38	03/22/20 14:13	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:30	10
Cobalt	ND	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:13	10
Molybdenum	14	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:13	10
Manganese	3600	D2	25		ug/L		03/12/20 04:38	03/22/20 16:30	10

Client Sample ID: MW66A-AQTEST-03062020-6

Lab Sample ID: 550-139091-9

Date Collected: 03/06/20 01:40

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.1	D1	0.80		mg/L			03/20/20 02:27	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.6	D1	1.0		mg/L		03/26/20 10:53	04/02/20 10:29	20
Iron	4.6		0.10		mg/L		03/12/20 05:01	03/24/20 11:45	1
Lithium	0.69		0.20		mg/L		03/12/20 05:01	03/24/20 11:45	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	10		ug/L		03/12/20 04:38	03/22/20 14:15	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:32	10
Cobalt	ND	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:15	10
Molybdenum	15	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:15	10
Manganese	3800	D2	25		ug/L		03/12/20 04:38	03/22/20 16:32	10

Client Sample ID: MW66A-AQTEST-03062020-7

Lab Sample ID: 550-139091-10

Date Collected: 03/06/20 03:40

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.1	D1	0.80		mg/L			03/20/20 02:46	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.7	D1	0.50		mg/L		03/26/20 10:53	04/02/20 10:33	10
Iron	5.4		0.10		mg/L		03/12/20 05:01	03/24/20 11:49	1
Lithium	0.71		0.20		mg/L		03/12/20 05:01	03/24/20 11:49	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	10		ug/L		03/12/20 04:38	03/22/20 14:17	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:34	10
Cobalt	ND	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:17	10
Molybdenum	14	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:17	10
Manganese	3700	D2	25		ug/L		03/12/20 04:38	03/22/20 16:34	10

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquifer Test

Job ID: 550-139091-1

Client Sample ID: MW66A-AQTEST-03062020-8

Lab Sample ID: 550-139091-11

Date Collected: 03/06/20 05:40

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.1	D1	0.80		mg/L			03/20/20 03:41	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.7	D1	0.50		mg/L		03/26/20 10:53	04/02/20 10:37	10
Iron	8.7		0.10		mg/L		03/12/20 05:01	03/24/20 11:53	1
Lithium	0.71		0.20		mg/L		03/12/20 05:01	03/24/20 11:53	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	10		ug/L		03/12/20 04:38	03/22/20 14:26	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:40	10
Cobalt	ND	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:26	10
Molybdenum	14	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:26	10
Manganese	3600	D2	25		ug/L		03/12/20 04:38	03/22/20 16:40	10

Client Sample ID: MW66A-AQTEST-03062020-9

Lab Sample ID: 550-139091-12

Date Collected: 03/06/20 07:40

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.1	D1	0.80		mg/L			03/20/20 03:59	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.7	D1	0.50		mg/L		03/26/20 10:53	04/02/20 10:57	10
Iron	12	D1	1.0		mg/L		03/26/20 10:53	04/02/20 10:57	10
Lithium	ND	D1	2.0		mg/L		03/26/20 10:53	04/02/20 10:57	10

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	10		ug/L		03/12/20 04:38	03/22/20 14:28	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:42	10
Cobalt	5.5	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:28	10
Molybdenum	14	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:28	10
Manganese	3700	D2	25		ug/L		03/12/20 04:38	03/22/20 16:42	10

Client Sample ID: MW66A-AQTEST-03062020-10

Lab Sample ID: 550-139091-13

Date Collected: 03/06/20 09:40

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.1	D1	0.80		mg/L			03/20/20 04:18	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.7	D1	0.50		mg/L		03/26/20 10:53	04/02/20 11:01	10
Iron	11	D1	1.0		mg/L		03/26/20 10:53	04/02/20 11:01	10
Lithium	ND	D1	2.0		mg/L		03/26/20 10:53	04/02/20 11:01	10

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquifer Test

Job ID: 550-139091-1

Client Sample ID: MW66A-AQTEST-03062020-10

Lab Sample ID: 550-139091-13

Date Collected: 03/06/20 09:40

Matrix: Water

Date Received: 03/09/20 10:12

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	10		ug/L		03/12/20 04:38	03/22/20 14:31	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:44	10
Cobalt	5.3	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:31	10
Molybdenum	14	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:31	10
Manganese	4000	D2	25		ug/L		03/12/20 04:38	03/22/20 16:44	10

Client Sample ID: MW66A-AQTEST-03062020-11

Lab Sample ID: 550-139091-14

Date Collected: 03/06/20 11:40

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.1	D1	0.80		mg/L			03/20/20 04:36	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.7	D1	1.0		mg/L		03/26/20 10:53	04/02/20 11:05	20
Iron	10	D1	2.0		mg/L		03/26/20 10:53	04/02/20 11:05	20
Lithium	ND	D1	4.0		mg/L		03/26/20 10:53	04/02/20 11:05	20

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	10		ug/L		03/12/20 04:38	03/22/20 14:33	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:46	10
Cobalt	5.7	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:33	10
Molybdenum	14	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:33	10
Manganese	3900	D2	25		ug/L		03/12/20 04:38	03/22/20 16:46	10

Client Sample ID: MW66A-AQTEST-03062020-12

Lab Sample ID: 550-139091-15

Date Collected: 03/06/20 13:40

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.1	D1	0.80		mg/L			03/20/20 04:54	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.7	D1	1.0		mg/L		03/26/20 10:53	04/02/20 11:09	20
Iron	11	D1	2.0		mg/L		03/26/20 10:53	04/02/20 11:09	20
Lithium	ND	D1	4.0		mg/L		03/26/20 10:53	04/02/20 11:09	20

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	10		ug/L		03/12/20 04:38	03/22/20 14:35	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:48	10
Cobalt	5.1	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:35	10
Molybdenum	15	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:35	10
Manganese	4000	D2	25		ug/L		03/12/20 04:38	03/22/20 16:48	10

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Client Sample ID: MW66A-AQTEST-03062020-13

Lab Sample ID: 550-139091-16

Date Collected: 03/06/20 15:40

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.1	D1	0.80		mg/L			03/20/20 05:13	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.7	D1	1.0		mg/L		03/26/20 10:53	04/02/20 11:13	20
Iron	6.5	D1	2.0		mg/L		03/26/20 10:53	04/02/20 11:13	20
Lithium	ND	D1	4.0		mg/L		03/26/20 10:53	04/02/20 11:13	20

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	10		ug/L		03/12/20 04:38	03/22/20 14:37	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:50	10
Cobalt	ND	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:37	10
Molybdenum	14	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:37	10
Manganese	3800	D2	25		ug/L		03/12/20 04:38	03/22/20 16:50	10

Client Sample ID: MW66A-AQTEST-03062020-14

Lab Sample ID: 550-139091-17

Date Collected: 03/06/20 17:30

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.1	D1	0.80		mg/L			03/20/20 05:31	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.7	D1	1.0		mg/L		03/26/20 10:53	04/02/20 11:17	20
Iron	10	D1	2.0		mg/L		03/26/20 10:53	04/02/20 11:17	20
Lithium	ND	D1	4.0		mg/L		03/26/20 10:53	04/02/20 11:17	20

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	10		ug/L		03/12/20 04:38	03/22/20 14:39	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:53	10
Cobalt	5.7	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:39	10
Molybdenum	14	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:39	10
Manganese	4000	D2	25		ug/L		03/12/20 04:38	03/22/20 16:53	10

Client Sample ID: HUNTA-03072020

Lab Sample ID: 550-139091-18

Date Collected: 03/07/20 08:30

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.5	D1	0.80		mg/L			03/20/20 05:50	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	31	D1	0.50		mg/L		03/26/20 10:53	04/02/20 11:21	10
Iron	ND	D1	1.0		mg/L		03/26/20 10:53	04/02/20 11:21	10
Lithium	ND	D1	2.0		mg/L		03/26/20 10:53	04/02/20 11:21	10

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquifer Test

Job ID: 550-139091-1

Client Sample ID: HUNTA-03072020

Lab Sample ID: 550-139091-18

Date Collected: 03/07/20 08:30

Matrix: Water

Date Received: 03/09/20 10:12

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	10		ug/L		03/12/20 04:38	03/22/20 14:41	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:55	10
Cobalt	ND	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:41	10
Molybdenum	220	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:41	10
Manganese	230	D1	25		ug/L		03/12/20 04:38	03/22/20 16:55	10

Client Sample ID: HUNTC-03072020

Lab Sample ID: 550-139091-19

Date Collected: 03/07/20 08:40

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.5	D1	0.80		mg/L			03/20/20 06:45	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	31	D1	1.0		mg/L		03/26/20 10:53	04/02/20 11:25	20
Iron	ND	D1	2.0		mg/L		03/26/20 10:53	04/02/20 11:25	20
Lithium	ND	D1	4.0		mg/L		03/26/20 10:53	04/02/20 11:25	20

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	10		ug/L		03/12/20 04:38	03/22/20 14:43	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:57	10
Cobalt	ND	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:43	10
Molybdenum	230	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:43	10
Manganese	230	D1	25		ug/L		03/12/20 04:38	03/22/20 16:57	10

Client Sample ID: MW66A-AQTEST-03052020-13

Lab Sample ID: 550-139091-20

Date Collected: 03/05/20 15:50

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.1	D1	0.80		mg/L			03/20/20 07:03	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.6	D1	1.0		mg/L		03/26/20 10:53	04/02/20 11:29	20
Iron	14	D1	2.0		mg/L		03/26/20 10:53	04/02/20 11:29	20
Lithium	ND	D1	4.0		mg/L		03/26/20 10:53	04/02/20 11:29	20

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	10		ug/L		03/12/20 04:38	03/22/20 14:45	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:59	10
Cobalt	6.6	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:45	10
Molybdenum	14	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:45	10
Manganese	4100	D2	25		ug/L		03/12/20 04:38	03/22/20 16:59	10

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-205834/2

Matrix: Water

Analysis Batch: 205834

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.40		mg/L			03/19/20 22:28	1

Lab Sample ID: LCS 550-205834/5

Matrix: Water

Analysis Batch: 205834

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	4.10		mg/L		103	90 - 110

Lab Sample ID: LCSD 550-205834/6

Matrix: Water

Analysis Batch: 205834

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	4.00	4.13		mg/L		103	90 - 110	1	20

Lab Sample ID: 550-139091-20 MS

Matrix: Water

Analysis Batch: 205834

Client Sample ID: MW66A-AQTEST-03052020-13

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	1.1	D1	8.00	8.61	D1	mg/L		93	80 - 120

Lab Sample ID: 550-139091-20 MSD

Matrix: Water

Analysis Batch: 205834

Client Sample ID: MW66A-AQTEST-03052020-13

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	1.1	D1	8.00	8.78	D1	mg/L		96	80 - 120	2	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 550-205129/1-A

Matrix: Water

Analysis Batch: 206198

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 205129

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10		mg/L		03/12/20 05:01	03/24/20 10:33	1
Lithium	ND		0.20		mg/L		03/12/20 05:01	03/24/20 10:33	1

Lab Sample ID: MB 550-206402/1-A

Matrix: Water

Analysis Batch: 207012

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 206402

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.050		mg/L		03/26/20 10:53	04/02/20 09:17	1
Iron	ND		0.10		mg/L		03/26/20 10:53	04/02/20 09:17	1
Lithium	ND		0.20		mg/L		03/26/20 10:53	04/02/20 09:17	1

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquifer Test

Job ID: 550-139091-1

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 550-205128/1-A
Matrix: Water
Analysis Batch: 205960

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 205128

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.0		ug/L		03/12/20 04:38	03/22/20 13:25	1
Cobalt	ND		0.50		ug/L		03/12/20 04:38	03/22/20 13:25	1
Molybdenum	0.519	B7	0.50		ug/L		03/12/20 04:38	03/22/20 13:25	1

Lab Sample ID: MB 550-205128/1-A
Matrix: Water
Analysis Batch: 205962

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 205128

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND		2.0		ug/L		03/12/20 04:38	03/22/20 15:59	1
Manganese	ND		2.5		ug/L		03/12/20 04:38	03/22/20 15:59	1

Lab Sample ID: LCS 550-205128/2-A
Matrix: Water
Analysis Batch: 205960

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 205128

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	102		ug/L		102	80 - 120
Cobalt	100	96.7		ug/L		97	80 - 120
Molybdenum	100	97.9		ug/L		98	80 - 120

Lab Sample ID: LCS 550-205128/2-A
Matrix: Water
Analysis Batch: 205962

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 205128

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	100	91.8		ug/L		92	80 - 120
Manganese	100	93.9		ug/L		94	80 - 120

Lab Sample ID: LCSD 550-205128/3-A
Matrix: Water
Analysis Batch: 205960

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 205128

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	100	99.9		ug/L		100	80 - 120	2	20
Cobalt	100	95.1		ug/L		95	80 - 120	2	20
Molybdenum	100	96.0		ug/L		96	80 - 120	2	20

Lab Sample ID: LCSD 550-205128/3-A
Matrix: Water
Analysis Batch: 205962

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 205128

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium	100	92.6		ug/L		93	80 - 120	1	20
Manganese	100	94.5		ug/L		94	80 - 120	1	20

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 550-139091-1 MS

Matrix: Water

Analysis Batch: 205960

Client Sample ID: GERONIMO-C-03052020

Prep Type: Total/NA

Prep Batch: 205128

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	10	D1	100	104		ug/L		94	75 - 125
Cobalt	ND	D1	100	79.4		ug/L		77	75 - 125
Molybdenum	25	D1 B7	100	130		ug/L		104	75 - 125

Lab Sample ID: 550-139091-1 MS

Matrix: Water

Analysis Batch: 205962

Client Sample ID: GERONIMO-C-03052020

Prep Type: Total/NA

Prep Batch: 205128

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	ND	D1	100	80.8		ug/L		81	75 - 125
Manganese	180	M2 D1	100	243	M2	ug/L		63	75 - 125

Lab Sample ID: 550-139091-1 MSD

Matrix: Water

Analysis Batch: 205960

Client Sample ID: GERONIMO-C-03052020

Prep Type: Total/NA

Prep Batch: 205128

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	10	D1	100	110		ug/L		100	75 - 125	6	20
Cobalt	ND	D1	100	79.4		ug/L		77	75 - 125	0	20
Molybdenum	25	D1 B7	100	127		ug/L		102	75 - 125	2	20

Lab Sample ID: 550-139091-1 MSD

Matrix: Water

Analysis Batch: 205962

Client Sample ID: GERONIMO-C-03052020

Prep Type: Total/NA

Prep Batch: 205128

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium	ND	D1	100	79.9		ug/L		80	75 - 125	1	20
Manganese	180	M2 D1	100	249	M2	ug/L		69	75 - 125	2	20

QC Association Summary

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

HPLC/IC

Analysis Batch: 205834

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-139091-1	GERONIMO-C-03052020	Total/NA	Water	300.0	
550-139091-2	GERONIMO-B-03052020	Total/NA	Water	300.0	
550-139091-3	HUNT-B-03052020	Total/NA	Water	300.0	
550-139091-4	MW66A-AQTEST-03052020-1	Total/NA	Water	300.0	
550-139091-5	MW66A-AQTEST-03052020-2	Total/NA	Water	300.0	
550-139091-6	MW66A-AQTEST-03052020-3	Total/NA	Water	300.0	
550-139091-7	MW66A-AQTEST-03052020-4	Total/NA	Water	300.0	
550-139091-8	MW66A-AQTEST-03052020-5	Total/NA	Water	300.0	
550-139091-9	MW66A-AQTEST-03062020-6	Total/NA	Water	300.0	
550-139091-10	MW66A-AQTEST-03062020-7	Total/NA	Water	300.0	
550-139091-11	MW66A-AQTEST-03062020-8	Total/NA	Water	300.0	
550-139091-12	MW66A-AQTEST-03062020-9	Total/NA	Water	300.0	
550-139091-13	MW66A-AQTEST-03062020-10	Total/NA	Water	300.0	
550-139091-14	MW66A-AQTEST-03062020-11	Total/NA	Water	300.0	
550-139091-15	MW66A-AQTEST-03062020-12	Total/NA	Water	300.0	
550-139091-16	MW66A-AQTEST-03062020-13	Total/NA	Water	300.0	
550-139091-17	MW66A-AQTEST-03062020-14	Total/NA	Water	300.0	
550-139091-18	HUNTA-03072020	Total/NA	Water	300.0	
550-139091-19	HUNTC-03072020	Total/NA	Water	300.0	
550-139091-20	MW66A-AQTEST-03052020-13	Total/NA	Water	300.0	
MB 550-205834/2	Method Blank	Total/NA	Water	300.0	
LCS 550-205834/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-205834/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-139091-20 MS	MW66A-AQTEST-03052020-13	Total/NA	Water	300.0	
550-139091-20 MSD	MW66A-AQTEST-03052020-13	Total/NA	Water	300.0	

Metals

Prep Batch: 205128

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-139091-1	GERONIMO-C-03052020	Total/NA	Water	3005A	
550-139091-2	GERONIMO-B-03052020	Total/NA	Water	3005A	
550-139091-3	HUNT-B-03052020	Total/NA	Water	3005A	
550-139091-4	MW66A-AQTEST-03052020-1	Total/NA	Water	3005A	
550-139091-5	MW66A-AQTEST-03052020-2	Total/NA	Water	3005A	
550-139091-6	MW66A-AQTEST-03052020-3	Total/NA	Water	3005A	
550-139091-7	MW66A-AQTEST-03052020-4	Total/NA	Water	3005A	
550-139091-8	MW66A-AQTEST-03052020-5	Total/NA	Water	3005A	
550-139091-9	MW66A-AQTEST-03062020-6	Total/NA	Water	3005A	
550-139091-10	MW66A-AQTEST-03062020-7	Total/NA	Water	3005A	
550-139091-11	MW66A-AQTEST-03062020-8	Total/NA	Water	3005A	
550-139091-12	MW66A-AQTEST-03062020-9	Total/NA	Water	3005A	
550-139091-13	MW66A-AQTEST-03062020-10	Total/NA	Water	3005A	
550-139091-14	MW66A-AQTEST-03062020-11	Total/NA	Water	3005A	
550-139091-15	MW66A-AQTEST-03062020-12	Total/NA	Water	3005A	
550-139091-16	MW66A-AQTEST-03062020-13	Total/NA	Water	3005A	
550-139091-17	MW66A-AQTEST-03062020-14	Total/NA	Water	3005A	
550-139091-18	HUNTA-03072020	Total/NA	Water	3005A	
550-139091-19	HUNTC-03072020	Total/NA	Water	3005A	
550-139091-20	MW66A-AQTEST-03052020-13	Total/NA	Water	3005A	
MB 550-205128/1-A	Method Blank	Total/NA	Water	3005A	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquifer Test

Job ID: 550-139091-1

Metals (Continued)

Prep Batch: 205128 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 550-205128/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 550-205128/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	
550-139091-1 MS	GERONIMO-C-03052020	Total/NA	Water	3005A	
550-139091-1 MSD	GERONIMO-C-03052020	Total/NA	Water	3005A	

Prep Batch: 205129

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-139091-1	GERONIMO-C-03052020	Total/NA	Water	3005A	
550-139091-2	GERONIMO-B-03052020	Total/NA	Water	3005A	
550-139091-3	HUNT-B-03052020	Total/NA	Water	3005A	
550-139091-4	MW66A-AQTEST-03052020-1	Total/NA	Water	3005A	
550-139091-5	MW66A-AQTEST-03052020-2	Total/NA	Water	3005A	
550-139091-6	MW66A-AQTEST-03052020-3	Total/NA	Water	3005A	
550-139091-7	MW66A-AQTEST-03052020-4	Total/NA	Water	3005A	
550-139091-8	MW66A-AQTEST-03052020-5	Total/NA	Water	3005A	
550-139091-9	MW66A-AQTEST-03062020-6	Total/NA	Water	3005A	
550-139091-10	MW66A-AQTEST-03062020-7	Total/NA	Water	3005A	
550-139091-11	MW66A-AQTEST-03062020-8	Total/NA	Water	3005A	
MB 550-205129/1-A	Method Blank	Total/NA	Water	3005A	
LCS 550-205129/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 550-205129/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	
550-139091-1 MS	GERONIMO-C-03052020	Total/NA	Water	3005A	
550-139091-1 MSD	GERONIMO-C-03052020	Total/NA	Water	3005A	

Analysis Batch: 205960

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-139091-1	GERONIMO-C-03052020	Total/NA	Water	6020B	205128
550-139091-2	GERONIMO-B-03052020	Total/NA	Water	6020B	205128
550-139091-3	HUNT-B-03052020	Total/NA	Water	6020B	205128
550-139091-4	MW66A-AQTEST-03052020-1	Total/NA	Water	6020B	205128
550-139091-5	MW66A-AQTEST-03052020-2	Total/NA	Water	6020B	205128
550-139091-6	MW66A-AQTEST-03052020-3	Total/NA	Water	6020B	205128
550-139091-7	MW66A-AQTEST-03052020-4	Total/NA	Water	6020B	205128
550-139091-8	MW66A-AQTEST-03052020-5	Total/NA	Water	6020B	205128
550-139091-9	MW66A-AQTEST-03062020-6	Total/NA	Water	6020B	205128
550-139091-10	MW66A-AQTEST-03062020-7	Total/NA	Water	6020B	205128
550-139091-11	MW66A-AQTEST-03062020-8	Total/NA	Water	6020B	205128
550-139091-12	MW66A-AQTEST-03062020-9	Total/NA	Water	6020B	205128
550-139091-13	MW66A-AQTEST-03062020-10	Total/NA	Water	6020B	205128
550-139091-14	MW66A-AQTEST-03062020-11	Total/NA	Water	6020B	205128
550-139091-15	MW66A-AQTEST-03062020-12	Total/NA	Water	6020B	205128
550-139091-16	MW66A-AQTEST-03062020-13	Total/NA	Water	6020B	205128
550-139091-17	MW66A-AQTEST-03062020-14	Total/NA	Water	6020B	205128
550-139091-18	HUNTA-03072020	Total/NA	Water	6020B	205128
550-139091-19	HUNTC-03072020	Total/NA	Water	6020B	205128
550-139091-20	MW66A-AQTEST-03052020-13	Total/NA	Water	6020B	205128
MB 550-205128/1-A	Method Blank	Total/NA	Water	6020B	205128
LCS 550-205128/2-A	Lab Control Sample	Total/NA	Water	6020B	205128
LCSD 550-205128/3-A	Lab Control Sample Dup	Total/NA	Water	6020B	205128
550-139091-1 MS	GERONIMO-C-03052020	Total/NA	Water	6020B	205128
550-139091-1 MSD	GERONIMO-C-03052020	Total/NA	Water	6020B	205128

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Metals

Analysis Batch: 205962

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-139091-1	GERONIMO-C-03052020	Total/NA	Water	6020B	205128
550-139091-2	GERONIMO-B-03052020	Total/NA	Water	6020B	205128
550-139091-3	HUNT-B-03052020	Total/NA	Water	6020B	205128
550-139091-4	MW66A-AQTEST-03052020-1	Total/NA	Water	6020B	205128
550-139091-5	MW66A-AQTEST-03052020-2	Total/NA	Water	6020B	205128
550-139091-6	MW66A-AQTEST-03052020-3	Total/NA	Water	6020B	205128
550-139091-7	MW66A-AQTEST-03052020-4	Total/NA	Water	6020B	205128
550-139091-8	MW66A-AQTEST-03052020-5	Total/NA	Water	6020B	205128
550-139091-9	MW66A-AQTEST-03062020-6	Total/NA	Water	6020B	205128
550-139091-10	MW66A-AQTEST-03062020-7	Total/NA	Water	6020B	205128
550-139091-11	MW66A-AQTEST-03062020-8	Total/NA	Water	6020B	205128
550-139091-12	MW66A-AQTEST-03062020-9	Total/NA	Water	6020B	205128
550-139091-13	MW66A-AQTEST-03062020-10	Total/NA	Water	6020B	205128
550-139091-14	MW66A-AQTEST-03062020-11	Total/NA	Water	6020B	205128
550-139091-15	MW66A-AQTEST-03062020-12	Total/NA	Water	6020B	205128
550-139091-16	MW66A-AQTEST-03062020-13	Total/NA	Water	6020B	205128
550-139091-17	MW66A-AQTEST-03062020-14	Total/NA	Water	6020B	205128
550-139091-18	HUNTA-03072020	Total/NA	Water	6020B	205128
550-139091-19	HUNTC-03072020	Total/NA	Water	6020B	205128
550-139091-20	MW66A-AQTEST-03052020-13	Total/NA	Water	6020B	205128
MB 550-205128/1-A	Method Blank	Total/NA	Water	6020B	205128
LCS 550-205128/2-A	Lab Control Sample	Total/NA	Water	6020B	205128
LCSD 550-205128/3-A	Lab Control Sample Dup	Total/NA	Water	6020B	205128
550-139091-1 MS	GERONIMO-C-03052020	Total/NA	Water	6020B	205128
550-139091-1 MSD	GERONIMO-C-03052020	Total/NA	Water	6020B	205128

Analysis Batch: 206198

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-139091-1	GERONIMO-C-03052020	Total/NA	Water	6010C	205129
550-139091-2	GERONIMO-B-03052020	Total/NA	Water	6010C	205129
550-139091-3	HUNT-B-03052020	Total/NA	Water	6010C	205129
550-139091-4	MW66A-AQTEST-03052020-1	Total/NA	Water	6010C	205129
550-139091-5	MW66A-AQTEST-03052020-2	Total/NA	Water	6010C	205129
550-139091-6	MW66A-AQTEST-03052020-3	Total/NA	Water	6010C	205129
550-139091-7	MW66A-AQTEST-03052020-4	Total/NA	Water	6010C	205129
550-139091-8	MW66A-AQTEST-03052020-5	Total/NA	Water	6010C	205129
550-139091-9	MW66A-AQTEST-03062020-6	Total/NA	Water	6010C	205129
550-139091-10	MW66A-AQTEST-03062020-7	Total/NA	Water	6010C	205129
550-139091-11	MW66A-AQTEST-03062020-8	Total/NA	Water	6010C	205129
MB 550-205129/1-A	Method Blank	Total/NA	Water	6010C	205129
LCS 550-205129/2-A	Lab Control Sample	Total/NA	Water	6010C	205129
LCSD 550-205129/3-A	Lab Control Sample Dup	Total/NA	Water	6010C	205129
550-139091-1 MS	GERONIMO-C-03052020	Total/NA	Water	6010C	205129
550-139091-1 MSD	GERONIMO-C-03052020	Total/NA	Water	6010C	205129

Prep Batch: 206402

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-139091-1	GERONIMO-C-03052020	Total/NA	Water	3005A	
550-139091-2	GERONIMO-B-03052020	Total/NA	Water	3005A	
550-139091-3	HUNT-B-03052020	Total/NA	Water	3005A	
550-139091-4	MW66A-AQTEST-03052020-1	Total/NA	Water	3005A	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquifer Test

Job ID: 550-139091-1

Metals (Continued)

Prep Batch: 206402 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-139091-5	MW66A-AQTEST-03052020-2	Total/NA	Water	3005A	
550-139091-6	MW66A-AQTEST-03052020-3	Total/NA	Water	3005A	
550-139091-7	MW66A-AQTEST-03052020-4	Total/NA	Water	3005A	
550-139091-8	MW66A-AQTEST-03052020-5	Total/NA	Water	3005A	
550-139091-9	MW66A-AQTEST-03062020-6	Total/NA	Water	3005A	
550-139091-10	MW66A-AQTEST-03062020-7	Total/NA	Water	3005A	
550-139091-11	MW66A-AQTEST-03062020-8	Total/NA	Water	3005A	
550-139091-12	MW66A-AQTEST-03062020-9	Total/NA	Water	3005A	
550-139091-13	MW66A-AQTEST-03062020-10	Total/NA	Water	3005A	
550-139091-14	MW66A-AQTEST-03062020-11	Total/NA	Water	3005A	
550-139091-15	MW66A-AQTEST-03062020-12	Total/NA	Water	3005A	
550-139091-16	MW66A-AQTEST-03062020-13	Total/NA	Water	3005A	
550-139091-17	MW66A-AQTEST-03062020-14	Total/NA	Water	3005A	
550-139091-18	HUNTA-03072020	Total/NA	Water	3005A	
550-139091-19	HUNTC-03072020	Total/NA	Water	3005A	
550-139091-20	MW66A-AQTEST-03052020-13	Total/NA	Water	3005A	
MB 550-206402/1-A	Method Blank	Total/NA	Water	3005A	
LCS 550-206402/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 550-206402/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	
550-139091-3 MS	HUNT-B-03052020	Total/NA	Water	3005A	
550-139091-3 MSD	HUNT-B-03052020	Total/NA	Water	3005A	

Analysis Batch: 207012

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-139091-1	GERONIMO-C-03052020	Total/NA	Water	6010C	206402
550-139091-2	GERONIMO-B-03052020	Total/NA	Water	6010C	206402
550-139091-3	HUNT-B-03052020	Total/NA	Water	6010C	206402
550-139091-4	MW66A-AQTEST-03052020-1	Total/NA	Water	6010C	206402
550-139091-5	MW66A-AQTEST-03052020-2	Total/NA	Water	6010C	206402
550-139091-6	MW66A-AQTEST-03052020-3	Total/NA	Water	6010C	206402
550-139091-7	MW66A-AQTEST-03052020-4	Total/NA	Water	6010C	206402
550-139091-8	MW66A-AQTEST-03052020-5	Total/NA	Water	6010C	206402
550-139091-9	MW66A-AQTEST-03062020-6	Total/NA	Water	6010C	206402
550-139091-10	MW66A-AQTEST-03062020-7	Total/NA	Water	6010C	206402
550-139091-11	MW66A-AQTEST-03062020-8	Total/NA	Water	6010C	206402
550-139091-12	MW66A-AQTEST-03062020-9	Total/NA	Water	6010C	206402
550-139091-13	MW66A-AQTEST-03062020-10	Total/NA	Water	6010C	206402
550-139091-14	MW66A-AQTEST-03062020-11	Total/NA	Water	6010C	206402
550-139091-15	MW66A-AQTEST-03062020-12	Total/NA	Water	6010C	206402
550-139091-16	MW66A-AQTEST-03062020-13	Total/NA	Water	6010C	206402
550-139091-17	MW66A-AQTEST-03062020-14	Total/NA	Water	6010C	206402
550-139091-18	HUNTA-03072020	Total/NA	Water	6010C	206402
550-139091-19	HUNTC-03072020	Total/NA	Water	6010C	206402
550-139091-20	MW66A-AQTEST-03052020-13	Total/NA	Water	6010C	206402
MB 550-206402/1-A	Method Blank	Total/NA	Water	6010C	206402
LCS 550-206402/2-A	Lab Control Sample	Total/NA	Water	6010C	206402
LCSD 550-206402/3-A	Lab Control Sample Dup	Total/NA	Water	6010C	206402
550-139091-3 MS	HUNT-B-03052020	Total/NA	Water	6010C	206402
550-139091-3 MSD	HUNT-B-03052020	Total/NA	Water	6010C	206402

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Client Sample ID: GERONIMO-C-03052020

Lab Sample ID: 550-139091-1

Date Collected: 03/05/20 09:25

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	205834	03/20/20 00:00	NEL	TAL PHX
Total/NA	Prep	3005A			205129	03/12/20 05:01	SGO	TAL PHX
Total/NA	Analysis	6010C		1	206198	03/24/20 10:57	SRA	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		10	207012	04/02/20 10:01	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 13:54	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:11	ARE	TAL PHX

Client Sample ID: GERONIMO-B-03052020

Lab Sample ID: 550-139091-2

Date Collected: 03/05/20 09:50

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 00:18	NEL	TAL PHX
Total/NA	Prep	3005A			205129	03/12/20 05:01	SGO	TAL PHX
Total/NA	Analysis	6010C		1	206198	03/24/20 11:17	SRA	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		10	207012	04/02/20 10:05	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:00	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:17	ARE	TAL PHX

Client Sample ID: HUNT-B-03052020

Lab Sample ID: 550-139091-3

Date Collected: 03/05/20 10:30

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 00:37	NEL	TAL PHX
Total/NA	Prep	3005A			205129	03/12/20 05:01	SGO	TAL PHX
Total/NA	Analysis	6010C		1	206198	03/24/20 11:21	SRA	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		10	207012	04/02/20 09:41	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:02	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:19	ARE	TAL PHX

Lab Chronicle

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Client Sample ID: MW66A-AQTEST-03052020-1

Lab Sample ID: 550-139091-4

Date Collected: 03/05/20 11:50

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 00:55	NEL	TAL PHX
Total/NA	Prep	3005A			205129	03/12/20 05:01	SGO	TAL PHX
Total/NA	Analysis	6010C		1	206198	03/24/20 11:25	SRA	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		10	207012	04/02/20 10:09	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:04	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:22	ARE	TAL PHX

Client Sample ID: MW66A-AQTEST-03052020-2

Lab Sample ID: 550-139091-5

Date Collected: 03/05/20 13:50

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 01:13	NEL	TAL PHX
Total/NA	Prep	3005A			205129	03/12/20 05:01	SGO	TAL PHX
Total/NA	Analysis	6010C		1	206198	03/24/20 11:29	SRA	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		10	207012	04/02/20 10:13	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:06	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:24	ARE	TAL PHX

Client Sample ID: MW66A-AQTEST-03052020-3

Lab Sample ID: 550-139091-6

Date Collected: 03/05/20 19:40

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 01:32	NEL	TAL PHX
Total/NA	Prep	3005A			205129	03/12/20 05:01	SGO	TAL PHX
Total/NA	Analysis	6010C		1	206198	03/24/20 11:33	SRA	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		10	207012	04/02/20 10:17	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:08	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:26	ARE	TAL PHX

Lab Chronicle

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Client Sample ID: MW66A-AQTEST-03052020-4

Lab Sample ID: 550-139091-7

Date Collected: 03/05/20 21:40

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 01:50	NEL	TAL PHX
Total/NA	Prep	3005A			205129	03/12/20 05:01	SGO	TAL PHX
Total/NA	Analysis	6010C		1	206198	03/24/20 11:37	SRA	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		10	207012	04/02/20 10:21	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:11	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:28	ARE	TAL PHX

Client Sample ID: MW66A-AQTEST-03052020-5

Lab Sample ID: 550-139091-8

Date Collected: 03/05/20 23:40

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 02:09	NEL	TAL PHX
Total/NA	Prep	3005A			205129	03/12/20 05:01	SGO	TAL PHX
Total/NA	Analysis	6010C		1	206198	03/24/20 11:41	SRA	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		10	207012	04/02/20 10:25	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:13	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:30	ARE	TAL PHX

Client Sample ID: MW66A-AQTEST-03062020-6

Lab Sample ID: 550-139091-9

Date Collected: 03/06/20 01:40

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 02:27	NEL	TAL PHX
Total/NA	Prep	3005A			205129	03/12/20 05:01	SGO	TAL PHX
Total/NA	Analysis	6010C		1	206198	03/24/20 11:45	SRA	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		20	207012	04/02/20 10:29	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:15	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:32	ARE	TAL PHX

Lab Chronicle

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Client Sample ID: MW66A-AQTEST-03062020-7

Lab Sample ID: 550-139091-10

Date Collected: 03/06/20 03:40

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 02:46	NEL	TAL PHX
Total/NA	Prep	3005A			205129	03/12/20 05:01	SGO	TAL PHX
Total/NA	Analysis	6010C		1	206198	03/24/20 11:49	SRA	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		10	207012	04/02/20 10:33	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:17	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:34	ARE	TAL PHX

Client Sample ID: MW66A-AQTEST-03062020-8

Lab Sample ID: 550-139091-11

Date Collected: 03/06/20 05:40

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 03:41	NEL	TAL PHX
Total/NA	Prep	3005A			205129	03/12/20 05:01	SGO	TAL PHX
Total/NA	Analysis	6010C		1	206198	03/24/20 11:53	SRA	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		10	207012	04/02/20 10:37	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:26	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:40	ARE	TAL PHX

Client Sample ID: MW66A-AQTEST-03062020-9

Lab Sample ID: 550-139091-12

Date Collected: 03/06/20 07:40

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 03:59	NEL	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		10	207012	04/02/20 10:57	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:28	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:42	ARE	TAL PHX

Client Sample ID: MW66A-AQTEST-03062020-10

Lab Sample ID: 550-139091-13

Date Collected: 03/06/20 09:40

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 04:18	NEL	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Client Sample ID: MW66A-AQTEST-03062020-10

Lab Sample ID: 550-139091-13

Date Collected: 03/06/20 09:40

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		10	207012	04/02/20 11:01	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:31	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:44	ARE	TAL PHX

Client Sample ID: MW66A-AQTEST-03062020-11

Lab Sample ID: 550-139091-14

Date Collected: 03/06/20 11:40

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 04:36	NEL	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		20	207012	04/02/20 11:05	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:33	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:46	ARE	TAL PHX

Client Sample ID: MW66A-AQTEST-03062020-12

Lab Sample ID: 550-139091-15

Date Collected: 03/06/20 13:40

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 04:54	NEL	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		20	207012	04/02/20 11:09	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:35	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:48	ARE	TAL PHX

Client Sample ID: MW66A-AQTEST-03062020-13

Lab Sample ID: 550-139091-16

Date Collected: 03/06/20 15:40

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 05:13	NEL	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		20	207012	04/02/20 11:13	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:37	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:50	ARE	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Client Sample ID: MW66A-AQTEST-03062020-14

Lab Sample ID: 550-139091-17

Date Collected: 03/06/20 17:30

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 05:31	NEL	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		20	207012	04/02/20 11:17	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:39	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:53	ARE	TAL PHX

Client Sample ID: HUNTA-03072020

Lab Sample ID: 550-139091-18

Date Collected: 03/07/20 08:30

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 05:50	NEL	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		10	207012	04/02/20 11:21	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:41	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:55	ARE	TAL PHX

Client Sample ID: HUNTC-03072020

Lab Sample ID: 550-139091-19

Date Collected: 03/07/20 08:40

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 06:45	NEL	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		20	207012	04/02/20 11:25	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:43	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:57	ARE	TAL PHX

Client Sample ID: MW66A-AQTEST-03052020-13

Lab Sample ID: 550-139091-20

Date Collected: 03/05/20 15:50

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 07:03	NEL	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		20	207012	04/02/20 11:29	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:45	ARE	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Client Sample ID: MW66A-AQTEST-03052020-13

Lab Sample ID: 550-139091-20

Date Collected: 03/05/20 15:50

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:59	ARE	TAL PHX

Laboratory References:

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Laboratory: Eurofins TestAmerica, Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-08-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020B	3005A	Water	Molybdenum

Method Summary

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PHX
6010C	Metals (ICP)	SW846	TAL PHX
6020B	Metals (ICP/MS)	SW846	TAL PHX
3005A	Preparation, Total Metals	SW846	TAL PHX

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Chain of Custody Record 429310 eurofins

Address: _____

Regulatory Program: ☐ DW ☐ MDES ☐ RCRA ☐ Other: _____

TAL-8210

Environment TestAmerica

4/2/2020

Client Contact

Company Name: **WOOD PLC**
 Address: **4600 E Washington St., Suite 600**
 City/State/Zip: **Phoenix, AZ, 85034**
 Phone: _____
 Fax: _____
 Project Name: **FAP Aquifer Test**
 Site: _____
 PO # **1420182040.000.01**

Project Manager: Emily Lovell

Tel/Email: **480-733-6081**
 Analysis Turnaround Time
☐ CALENDAR DAYS ☐ WORKING DAYS
 TAT if different from Below **STD**
☐ 2 weeks
☐ 1 week
☐ 2 days
☐ 1 day

Site Contact: Dave Andersen

Lab Contact: **R. Sester**
 Date: _____
 Carrier: _____
 COC No: **1** of **2** COCs

Sample Specific Notes:

Sampler: _____
 For Lab Use Only:
 Walk-in Client: _____
 Lab Sampling: _____
 Job / SDG No.: _____

Sample Identification

Sample Identification	Sample Date	Sample Time	Sample Type (G=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Carrier	Sample Specific Notes
GERONIMO-C-03052020	3-5-20	0925	G	W	2	N	N		Analytes: Arsenic, Barium, Cobalt, Chromium, Fluoride, Lithium, Molybdenum, Iron, Nitric, Manganese,
GERONIMO-B-03052020	3-5-20	0950	G	W	2	N	N		
HUNT-B-03052020	3-5-20	1030	G	W	2	N	N		
HUNT-A-03052020	3-5-20	1037	G	W	2	N	N		
MW66A-AQTEST-03052020-1	3-5-20	1150	G	W	2	N	N		
MW66A-AQTEST-03052020-2	3-5-20	1350	G	W	2	N	N		
MW66A-AQTEST-03052020-3	3-5-20	1940	G	W	2	N	N		
MW66A-AQTEST-03052020-4	3-5-20	2140	G	W	2	N	N		
MW66A-AQTEST-03052020-5	3-5-20	2340	G	W	2	N	N		
MW66A-AQTEST-03062020-6	3-6-20	0140	G	W	2	N	N		
MW66A-AQTEST-03062020-7	3-6-20	0340	G	W	2	N	N		
MW66A-AQTEST-03062020-8	3-6-20	0540	G	W	2	N	N		



550-139091 Chain of Custody

Preservation Used:

1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other _____

Possible Hazard Identification:

Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

03/2/20

Special Instructions/QC Requirements & Comments:

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Custody Seals Intact: ☐ Yes ☐ No
 Relinquished by: **Ruby Gino**
 Relinquished by: **WOOD**
 Relinquished by: _____
 Relinquished by: _____

Cooler Temp. (°C): Obs'd: _____
 Therm ID No.: _____
 Date/Time: **3/9/2020**
 Date/Time: **3/9/2020**
 Date/Time: **3/9/2020**
 Date/Time: **3/9/2020**

CPO

Address: _____

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TAL-8210

Client Contact Company Name: <u>Wood PLC</u> Address: <u>4600 E Washington St, Suite 600</u> City/State/Zip: <u>Phoenix, AZ 85034</u> Phone: _____ Fax: _____ Project Name: <u>EAP Aquifer Test</u> Site: _____ P.O. # <u>142182010.rrr.01</u>				Project Manager: Emily LeJole Tel/Email: <u>602-733-1081</u> Analysis Turnaround Time <input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below: <u>5TD</u> <input type="checkbox"/> 1 day <input type="checkbox"/> 2 days <input type="checkbox"/> 1 week <input type="checkbox"/> 2 weeks				Site Contact: Dave Anderson Lab Contact: <u>R. Jester</u> Date: _____ Carrier: _____		COC No.: _____ of <u>2</u> COCs	
Sample Identification											
Sample		Sample Date	Sample Time	Sample Type (G=Comp, S=Grav)	Matrix	# of Cont.	Filtered Sample (Y / N)		Perform MS / MSD (Y / N)		
MWB6A-AQTest-03062020-9		3-6-20	07:40	G	W	2	/		/		
MWB6A-AQTest-03062020-10		3-6-20	09:40	G	W	2	/		/		
MWB6A-AQTest-03062020-11		3-6-20	11:40	G	W	2	/		/		
MWB6A-AQTest-03062020-12		3-6-20	13:40	G	W	2	/		/		
MWB6A-AQTest-03062020-13		3-6-20	15:40	G	W	2	/		/		
MWB6A-ABTest-03062020-14		3-6-20	17:30	G	W	2	/		/		
HUNT-03072020		3-7-20	08:30	G	W	2	/		/		
HUNT-03072020		3-7-20	08:40	G	W	2	/		/		
MWB6A-AQTest-03062020-13		3-6-20	15:50	G	W	2	/		/		
Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4= HNO3, 5= NaOH, 6= Other _____											
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample. <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown											
Special Instructions/QC Requirements & Comments: <input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months											
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.: _____		Cooler Temp. (°C): Obsd: _____		Corrd: _____		Therm ID No.: _____			
Relinquished by: <u>John Wood</u>		Company: <u>Wood</u>		Date/Time: <u>3/9/20 10:12</u>		Received by: _____		Company: _____			
Relinquished by: _____		Company: _____		Date/Time: _____		Received in Laboratory by: _____		Company: <u>TTA-04H</u>			
Relinquished by: _____		Company: _____		Date/Time: _____		Received in Laboratory by: _____		Company: _____			

Login Sample Receipt Checklist

Client: Wood E&I Solutions Inc

Job Number: 550-139091-1

Login Number: 139091

List Source: Eurofins TestAmerica, Phoenix

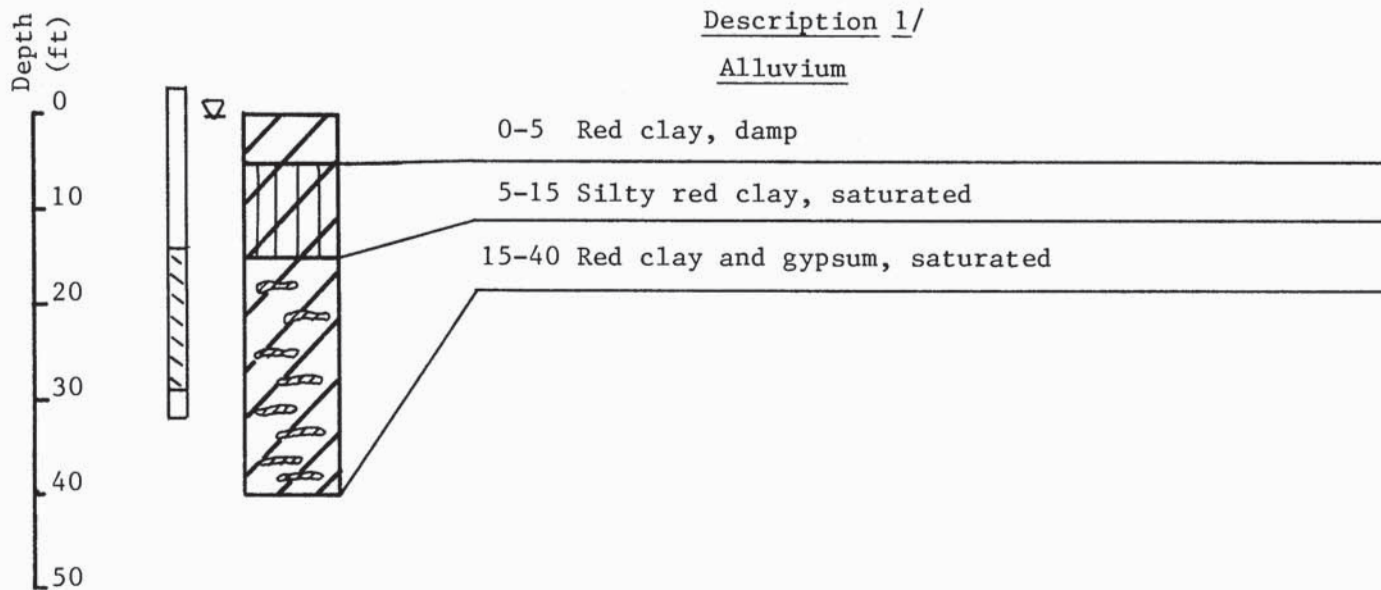
List Number: 1

Creator: Gravlin, Andrea

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

**ATTACHMENT B – LITHOLOGIC LOGS AND WELL CONSTRUCTION
DIAGRAMS**

Log of Well: W-123



1/ Descriptions based on inspection of drill cuttings. Samples taken at 5 ft. intervals.

Note: Depth to water shown is for April 5, 1984

ARIZONA PUBLIC SERVICE

PROJECT Hunt Seep Monitor Well and LOG OF TEST BORING NO. W-126
Extraction Well Installation
Cholla Power Plant
 JOB NO. 30-9147 DATE 12/19/95

Depth in Feet		Soil Sample						RIG TYPE	CME-75	
								BORING TYPE	8-5/8" OD Hollow Stem Auger	
								SURFACE ELEV.	Estimate: 5031 ft.	
								DATUM		
REMARKS										
0								NOTE: Drill site conditions-- grass covered saturated soils		
5										
10										
15										

GROUNDWATER

DEPTH	HOUR	DATE
2ft 11in*	14:35	12/19/95

WELL CONSTRUCTION

8 inch Steel Casing - 2ft. 4inches above grade to 7ft. 8inches below grade
4 inch Sch 40 PVC Casing - 1ft. 7 inches above grade to 15ft. below grade.
4 inch Sch 40, 0.010 well screen - 15ft. below grade to 45 ft. below grade.
Colorado silica (8-12) - 13ft. below grade to 45ft. below grade.
Sides of the hole came in after setting sand filter & prior to setting surface casing. Filled available space with bentonite.

* NOTE: Depth to water measured from top of PVC casing. Depth to water from ground surface was 1ft. 4 inches.



Environment & Infrastructure Solutions, Inc.
4600 East Washington Street, Suite 600
Phoenix, Arizona 85034

BORING LOG I.D.: MW-66A

Page 1 of 3

PROJECT:	APS Cholla Power Plant CCR Compliance			PROJECT LOCATION:	APS Cholla Power Plant			
LOGGED BY:	Isaac Torres			PROJECT FEATURE:	Fly Ash Pond			
DRILLER:	Darius Cervantez			WOOD PROJECT #:	14-2018-2040			
DRILLER FIRM:	Boart Longyear			ADWR REG. #:	55-922300			
RIG I.D.:	- - -			COORDINATES:	N1429526.69, E668254.52			
RIG TYPE:	Rotasonic			COORDINATE SYS:	Arizona State Plane East Zone 0201, International Feet			
BORING TYPE:	- - -	BORING DIA.:	8"	SURFACE ELEV. (FT):	5032.46'			
ORIENTATION:	90°			MEAS. PT. ELEV. (FT):	5033.35'			
HAMMER TYPE:	Not Applicable			VERTICAL DATUM:	NAVD88			
HAMMER CALIBRATION-ENERGY TRANSFER RATIO:			N/A	COMPLETION DATE:	11-12-2018	COMPLETION TIME:	15:40	
START DATE:	11-12-2018	START TIME:	09:35					

Elevation in Feet	Depth in Feet	Graphical Log	Sample ID. or Date (Time)	PID Meter Reading (ppm)	Unified Soil Classification	VISUAL CLASSIFICATION (Color, Moist, % by wt., Plasticity, Dilatancy, Toughness, Dry Strength, Consistency)	Depth in Feet	WELL INFORMATION (Construction Details and/or Drilling Remarks)
-5032.5	0				ML	SANDY SILT , 80% fines, 15% fine to coarse grained, subrounded sand, 5% fine to coarse grained, subrounded to subangular gravel, brown (7.5 YR 4/3), nonlithified, granular to single grain soil structure, weakly effervescent, nonplastic, slightly moist, loose density, low dry strength, no stains, no odors note: at 2.5' sharp basal contact	0	Steel casing stick up +2', minimum 8" clearance between top of steel casing and top of 4" PVC well casing
					CL			4000 PSI Concrete Mix from 0 to 5'
-5027.5	5		11-12-18 (09:35)			SILTY CLAY , 90% fines, 10% fine to coarse grained, subrounded to subangular sand, dark brown (7.5YR 3/3), predominant calcium carbonate filaments, angular blocky soil structure, weakly cemented, highly effervescent, thin laminae (<1 mm), nonplastic, slightly moist, very firm to hard, low medium dry strength, friable, no stains, no odors note: at 13' calcium carbonate filaments absent; gradational basal contact	5	4" Nominal Diameter Schedule 80 PVC Blank Casing from +1' to 24'
-5022.5	10		11-12-18 (09:45)				10	
					CL	CLAY , 90% to 95% fines, 5% to 10% fine to coarse grained, subrounded to subangular sand, dark reddish-brown (5YR 3/4), massive, effervescent, medium plasticity, moist, soft firmness, medium dry strength, ductile, no stains, no odors		Portland Neat Cement from 5' to 20'
-5017.5	15		11-12-18 (09:58)				15	
-5012.5	20		11-12-18 (10:10)				20	

GROUNDWATER

	DEPTH(ft bgs)	HOUR	DATE
▽	31.9	15:50	11/12/18
▼	29.3	08:00	11/13/18
▼	28.9	07:35	11/14/18
▼	28.5	09:30	11/16/18

METHOD Not Applicable

(Continued Next Page)

PROJECT:	APS Cholla Power Plant CCR Compliance	PROJECT LOCATION:	APS Cholla Power Plant
ADWR REG. #:	55-922300	PROJECT FEATURE:	Fly Ash Pond

Elevation in Feet	Depth in Feet	Graphical Log	Sample ID. or Date (Time)	PID Meter Reading (ppm)	Unified Soil Classification	VISUAL CLASSIFICATION (Color, Moist, % by wt., Plasticity, Dilatancy, Toughness, Dry Strength, Consistency)	Depth in Feet	WELL INFORMATION (Construction Details and/or Drilling Remarks)
-5012.5	20				CL	CLAY , continued note: at 23' sand decreases; gradational basal contact	20	(Continued) Bentonite Plug from 20' to 22'
-5007.5	25		11-12-18 (10:35)		CL	CLAY , 98% fines, 2% fine to coarse grained, subrounded to subangular sand, dark brown (7.5YR 3/3), effervescent, medium to high plasticity, moist, soft to stiff firmness, medium dry strength, ductile, no stains, no odors note: at 25.5' sand slightly increases; gradational basal contact	25	Filter Pack (8-12) from 22' to 49'
-5002.5	30		11-12-18 (12:20)		CL	CLAY , 95% fines, 5% fine to coarse grained, subrounded to subangular sand, dark reddish-brown (5YR 3/2), trace gypsum nodules (~3 mm) and occ filaments (~1 cm), effervescent, medium to high plasticity, moist, medium stiff to stiff firmness, medium dry strength, ductile, no stains, no odors note: at 32.5' gypsum filaments increase in length (~2.5 cm) note: at 33.0' clay decreases while silt increases	30	
-4997.5	35		11-12-18 (12:40)		CL	 note: at 37.5' bgs gypsum nodules decrease and no filaments, sand decreases, core sample more compact in diameter; gradational basal contact	35	
-4992.5	40		11-12-18 (13:06)		CL	CLAY , 98% fines, 2% fine to coarse grained, subrounded to subangular sand, dark reddish-brown (5YR 3/3), occasional gypsum nodules, massive, effervescent, high plasticity, moist, soft to medium stiff firmness, medium dry strength, ductile, no stains, no odors note: at about 40' sand decreases; sharp basal contact	40	
-4987.5	45					SILTY CLAY , 95% to 98% fines, 2% to 5% fine to coarse grained, subrounded to subangular sand, dark-reddish brown (5YR 3/4), rare gypsum nodules, massive, effervescent, medium to high plasticity wet, soft to medium stiff firmness, medium dry strength, ductile, no stains, no odors note: at about 40' core samples more compact in diameter	45	4" Nominal Diameter Schedule 80 PVC (0.020" Slot Screen) from 24' to 49'

GROUNDWATER

DEPTH(ft bgs)	HOUR	DATE
31.9	15:50	11/12/18
29.3	08:00	11/13/18
28.9	07:35	11/14/18
28.5	09:30	11/16/18

METHOD Not Applicable

(Continued Next Page)

PROJECT:	APS Cholla Power Plant CCR Compliance	PROJECT LOCATION:	APS Cholla Power Plant
ADWR REG. #:	55-922300	PROJECT FEATURE:	Fly Ash Pond

Elevation in Feet	Depth in Feet	Graphical Log	Sample ID. or Date (Time)	PID Meter Reading (ppm)	Unified Soil Classification	VISUAL CLASSIFICATION (Color, Moist, % by wt., Plasticity, Dilatancy, Toughness, Dry Strength, Consistency)	Depth in Feet	WELL INFORMATION (Construction Details and/or Drilling Remarks)
-4987.5	45		11-12-18 (13:22)		CL	SILTY CLAY , continued note: at 47.5' trace gravels (<1 cm), sand increases; gradational basal contact	45	(Continued)
-4982.5	50				CL	GRAVELLY CLAY , 75% fines, 20% fine to coarse grained, subrounded to subangular gravel, 5% fine to coarse grained, subrounded to subangular sand, dark-reddish brown (5YR 4/3), nonlithified, massive, slightly effervescent, low to medium plasticity, wet, soft firmness, low to medium dry strength, no odors note: at 52.5' core samples expanded back to normal, lenses of olive-brown staining, gradational basal contact	50	Pea Gravel from 49' to 51'
-4977.5	55					Trmh - Moqui Member of Moenkopi Formation (mid-unit), mudstone , 60% clay, 25% to 30% silt, 10% to 15% fine grained, subrounded to subangular sand, dark brown (7.5YR 3/3) with considerable lenses of olive brown staining (2.5Y 4/4), lithified, thin laminae (<0.5 mm), highly effervescent, slightly moist, medium to high plasticity, medium stiff, ductile, no odors. note: from 55' to 57' color dark reddish-brown (5YR 4/4), lithified samples in loose soil, trace gypsum nodules (mm), slightly moist, friable note: at 58' sharp basal contact with silty sandstone	55	Bentonite Chips from 51' to 60'
-4972.5	60					Total Depth = 60'	60	Total Depth = 60'
-4967.5	65						65	
-4962.5	70						70	

GROUNDWATER

DEPTH(ft bgs)	HOUR	DATE
31.9	15:50	11/12/18
29.3	08:00	11/13/18
28.9	07:35	11/14/18
28.5	09:30	11/16/18

METHOD Not Applicable

ARIZONA PUBLIC SERVICE

PROJECT Hunt's Seep Geotechnical Investigation
Cholla Power Plant

LOG OF TEST BORING NO. 1

JOB NO. 30-9147 DATE 6/8/1995

Depth in Feet	Graphical Log	Soil Sample	Water Sample	Blow Count	Flouride Content MG/L	Uranium 234 Content pCi/L	Uranium 235 Content pCi/L	Uranium 238 Content pCi/L
---------------	---------------	-------------	--------------	------------	--------------------------	------------------------------	------------------------------	------------------------------

RIG TYPE	CME-75
BORING TYPE	6-5/8" OD Hollow Stem Auger
SURFACE ELEV.	5030.81'
DATUM	N1,428,870.35' E469,821.30'

REMARKS

0									NOTE Hole is adjacent to Hunt's Seep
1									
2									
3									
4									
5									
6									
7									
8									
9									
10				5-7-8					Reddish brown clay with gypsum stringers.
11					0.76	60.2±7.1	1.78±0.3	45.0±5.4	Moist but not saturated.
12									
13									
14									
15									
16									
17									
18									
19									
20				5-7-8					Brown clay with gypsum modules and stringers. Green clay flecks.
21									Saturated.
22									
23									
24									
25									
26									
27									
28									
29									
30					1.79	61.3±7.3	1.61±0.2	46.8±5.6	
31									
32									
33									
34									
35				5-9-9					Reddish brown clay. Nearly saturated. Bottom 6" contains green clay
36									some granular particles, and is more crumbly.
37									
38									
39									
40					2.68	37.1±4.4	1.21±0.2	27.5±3.3	
41									
42									
43									
44									
45									
46									
47									
48									
49									
50				59/3"					Small sample of dark brown weathered clay stone retrieved
									Hollow stem auger refusal at 50'.

GROUNDWATER

DEPTH	HOUR	DATE

SAMPLE TYPE

All soil samples collected with
3" O.D. X 2.42" I.D. split tube.

All water samples collected with
a Hydrop Punch II sampler.

ARIZONA PUBLIC SERVICE

PROJECT Hunt's Seep Geotechnical Investigation
Cholla Power Plant

LOG OF TEST BORING NO. 2

JOB NO. 30-9147 DATE 6/12/1995

Depth in Feet	Graphical Log	Soil Sample	Water Sample	Blow Count	Fluoride Content M/G/L	Uranium 234 Content pCi/L	Uranium 235 Content pCi/L	Uranium 238 Content pCi/L	RIG TYPE	CME-75
									BORING TYPE	6-5/8" OD Hollow Stem Auger
									SURFACE ELEV.	5029.20'
									DATUM	N1,428,581.09' E469,720.95'
REMARKS										

0									NOTE: Hole is approximately 50' NE of irrigation ditch.	
1										
2										
3										
4										
5										
6										
7										
8										
9										
10				2-2-2					Brown clay with gypsum modules. Super Saturated.	
11					0.99	111±13	3.38±0.50	85±10		
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25				4-7-7					Brown clay, some green clay particles. Not quite saturated. Water sample collection attempted between 23'-26'. No yield after 30 min.	
26										
27										
28										
29										
30				7-8-7					Brown clay, some green clay particles. Moist but not saturated.	
31										
32										
33										
34										
35										
36										
37										
38										
39										
40				6-8-9					Brown clay, some green clay clumps and stringers. A few tan clay particles near bottom. Moist but not saturated.	
41										
42										
43										
44										
45										
46										
47										
48										
49										
50				60/1"					Small sample of dark brown, weathered clay stone retrieved. Hollow stem auger refusal at 49'.	

GROUNDWATER		
DEPTH	HOUR	DATE

SAMPLE TYPE
 All soil samples collected with
 3" O.D. X 2.42" I.D. split tube.
 All water samples collected with
 a Hydro Punch II sampler.

ARIZONA PUBLIC SERVICE

PROJECT Hunt's Seep Geotechnical Investigation
Cholla Power Plant

LOG OF TEST BORING NO. 3

JOB NO. 30-9147 DATE 6/14/1995

Depth in Feet	Graphical Log	Soil Sample	Water Sample	Blow Count	Flouride Content MG/L	Uranium 234 Content pCi/L	Uranium 235 Content pCi/L	Uranium 238 Content pCi/L	RIG TYPE	CME-75
									BORING TYPE	6-5/8" OD Hollow Stem Auger
									SURFACE ELEV.	5029.11'
									DATUM	N1,428,236.94' E469,687.95'
REMARKS										

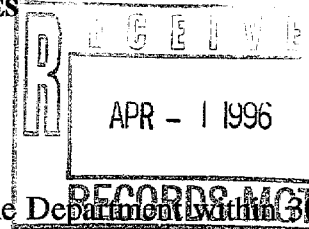
0									NOTE: Field being flood irrigated up to about 20-30' from hole.	
5									Brown clay with silt and sand particles. Super saturated	
10				0					Soil is so fluid that it runs out of tube. No blows recorded - auger floats out of hole as sampler pushed in. Residue on sampler is a brown clay with some silt and sand.	
					1.35	39.7±4.7	1.09±0.20	30.7±3.	Soil is so fluid that it runs out of tube. Water sample attempted. Bailer stuck in mud that has seeped into screen - string broke. Hole abandoned at 27'.	
15										
20										
25										
30										
35										
40										
45										
50										

GROUNDWATER		
DEPTH	HOUR	DATE

SAMPLE TYPE
 All soil samples collected with
 3" O.D. X 2.42" I.D. split tube.
 All water samples collected with
 a Hydropunch II sampler.

ARIZONA DEPARTMENT OF WATER RESOURCES

500 North Third Street
Phoenix, Arizona 85004



WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. GEOMECHANICS SOUTHWEST
7400 SOUTH NOGALES HWY.
TUCSON, AZ 85706-9642

2. Owner Name: ARIZONA PUBLIC SERVICE

Address: (Please reference N.O.I.'s that are on file with ADWR)

Street

City

State

Zip

3. Location: 18 N/SX 20 E/WX 30 1/4 SE 1/4 NW 1/4 SW
Township Range Section 10-acre 40-acre 160-acre

4. Well Registration No. 55-553267 (Required)

5. Permit No. _____ (If issued)

DESCRIPTION OF WELL

6. Total depth of hole 49' ft.

7. Type of casing SCH 40 PVC

8. Diameter and length of casing 5" in. from 0' to 49', _____ in from _____ to _____

9. Method of sealing at reduction points N/A

10. Perforated from 19' to 49', from _____ to _____ from _____ to _____

11. Size of cuts .020" Number of cuts per foot 86

12. If screen was installed: Length 30' ft. Diam 5" in. Type SCH 40 PVC

13. Method of construction Drilled / Hollow Stem

(drilled, dug, driven, bored, jetted, etc)

14. Date started 12-21-95

Month

Day

Year

15. Date completed 12-21-95

Month

Day

Year

16. Depth to water 2' ft. (If flowing well, so state)

17. Describe point from which depth measurements were made, and give sea-level elevation if available
A.G.L.

18. If flowing well, state method of flow regulation: N/A

19. Remarks: GSI job # 028-95P
Hole # HSX1

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Registration No. 55-553267

File No. A(18-20)30CBD

Received _____ By _____

Entered ENTERED APR 9 1996 By _____

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

[illegible]

I hereby certify that this well was drilled by me(or under my supervision), and that each and all statements herein contained are true to the best of my knowledge and belief.

Driller Name: GEOMECHANICS SOUTHWEST, INC.

1212 S. 9th Street

Street
Phoenix, AZ 85034 (602) 252-0559

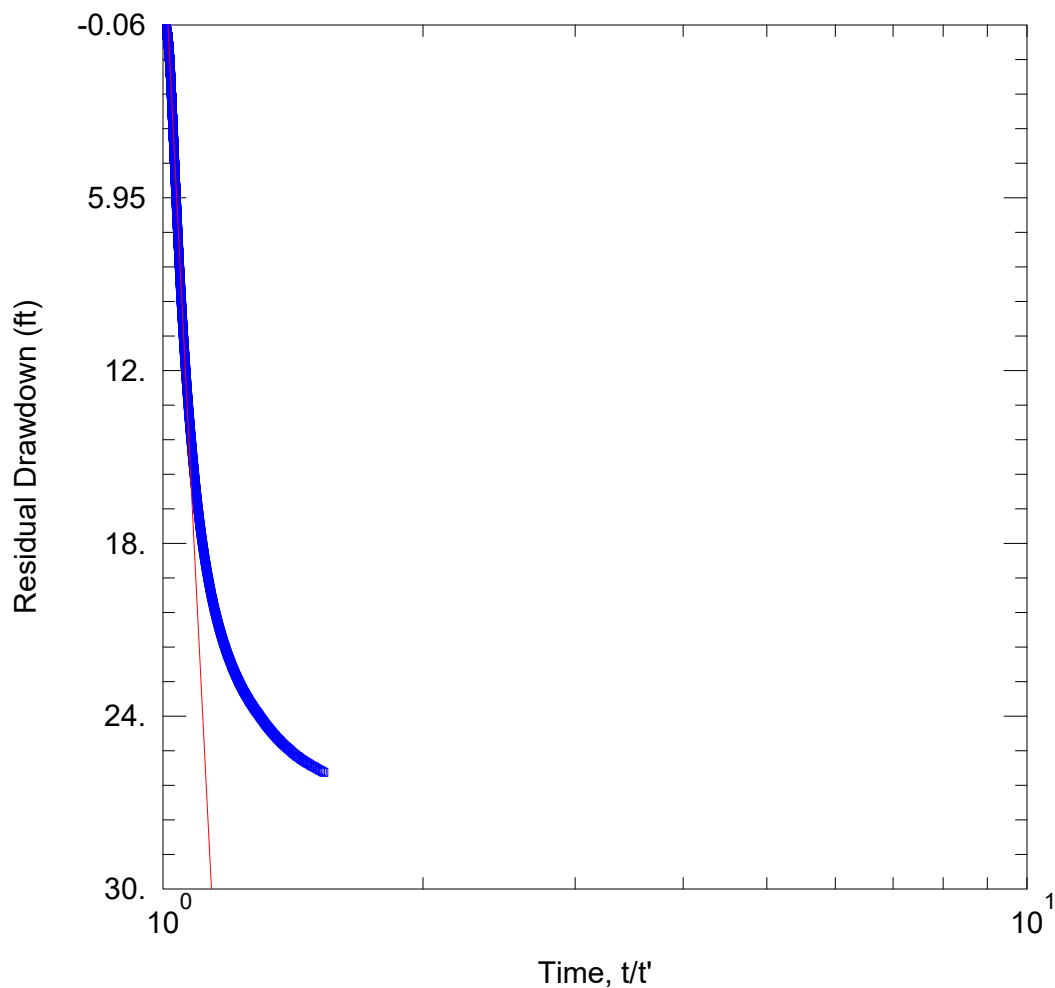
City _____ State _____ Zip 7 Phone No. _____

Sondra Monroe JVG 02-05-96
Signature of Driller

Signature of Driller

Date _____

ATTACHMENT C – AQTESOLV ANALYSES



W-123 PUMPING TEST-RECOVERY DATA

Data Set: C:\...\W-123 Test_Recovery_Theis.aqt

Date: 08/31/20

Time: 15:09:56

PROJECT INFORMATION

Company: Wood PLC

Client: Arizona Public Service

Project: 1420182040

Location: Navajo County, Arizona

Test Well: W-123

Test Date: 3/3/2020

AQUIFER DATA

Saturated Thickness: 75.23 ft

Anisotropy Ratio (Kz/Kr): 0.01

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
W-123	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
□ W-123	0	0

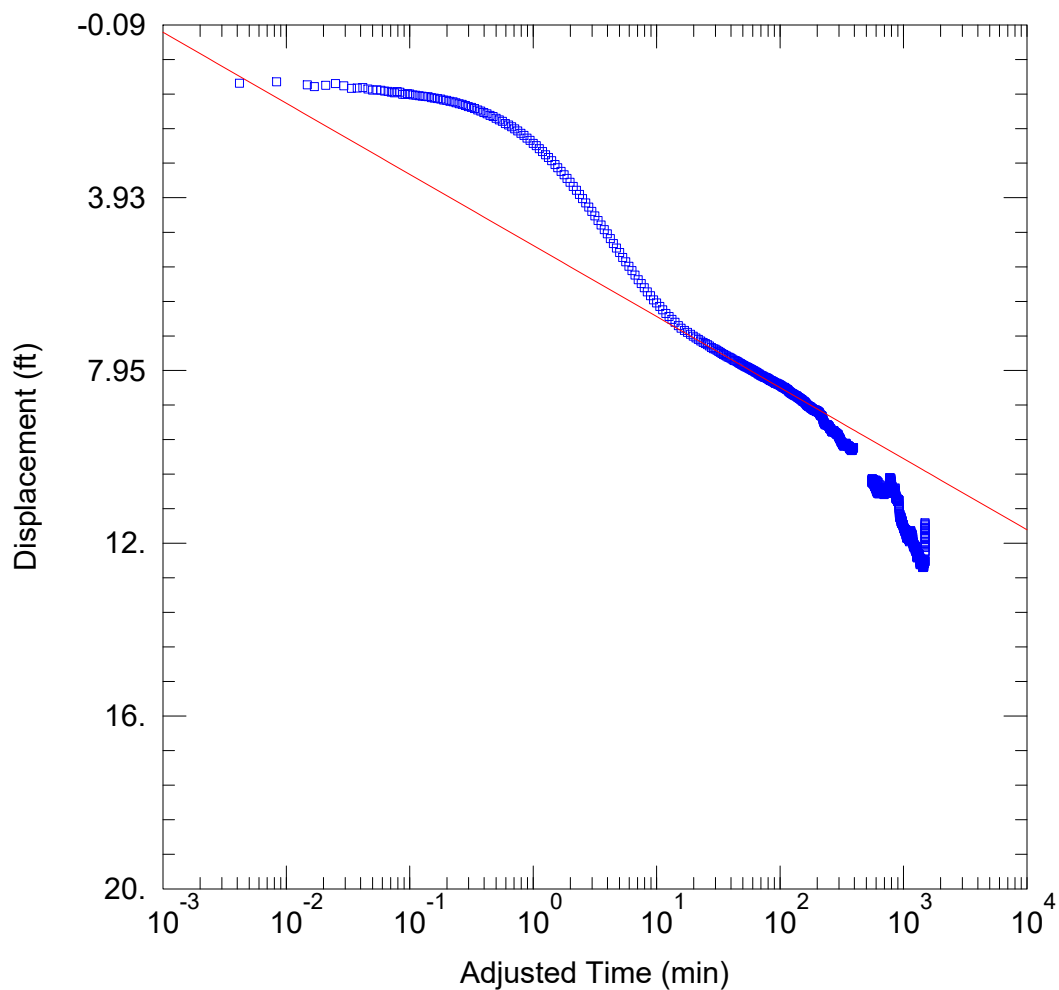
SOLUTION

Aquifer Model: Confined

Solution Method: Theis (Recovery)

T = 0.2208 gal/day/ft

S/S' = 1.014



MW-66A PUMPING TEST TRIAL 2

Data Set: C:\...\MW-66A_CRT2_DD_CJ.aqt

Date: 08/31/20

Time: 15:11:35

PROJECT INFORMATION

Company: Wood PLC

Client: Arizona Public Service

Project: 1420182040

Location: Navajo County, Arizona

Test Well: MW-66A

Test Date: 3/5/2020 - 3/6/2020

AQUIFER DATA

Saturated Thickness: 21.1 ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
MW-66A	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
□ MW-66A	0	0

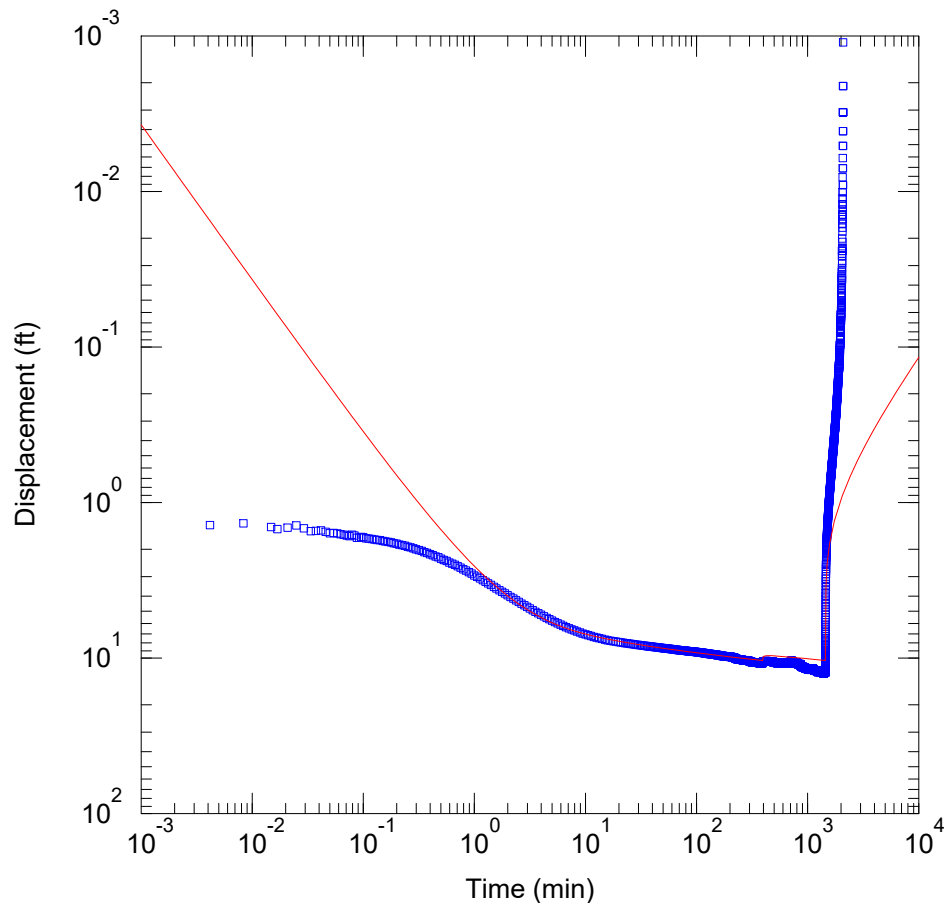
SOLUTION

Aquifer Model: Confined

Solution Method: Cooper-Jacob

T = 303.4 gal/day/ft

S = 0.0004134



MW-66A PUMPING TEST TRIAL 2

Data Set: C:\...\MW-66A_CRT2_DD_Partial_DB.aqt

Date: 08/28/20

Time: 12:10:06

PROJECT INFORMATION

Company: Wood PLC

Client: Arizona Public Service

Project: 1420182040

Location: Navajo County, Arizona

Test Well: MW-66A

Test Date: 3/5/2020 - 3/6/2020

AQUIFER DATA

Saturated Thickness: 21.1 ft

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
MW-66A	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
□ MW-66A	0	0

SOLUTION

Aquifer Model: Confined

Solution Method: Dougherty-Babu

T = 299.7 gal/day/ft

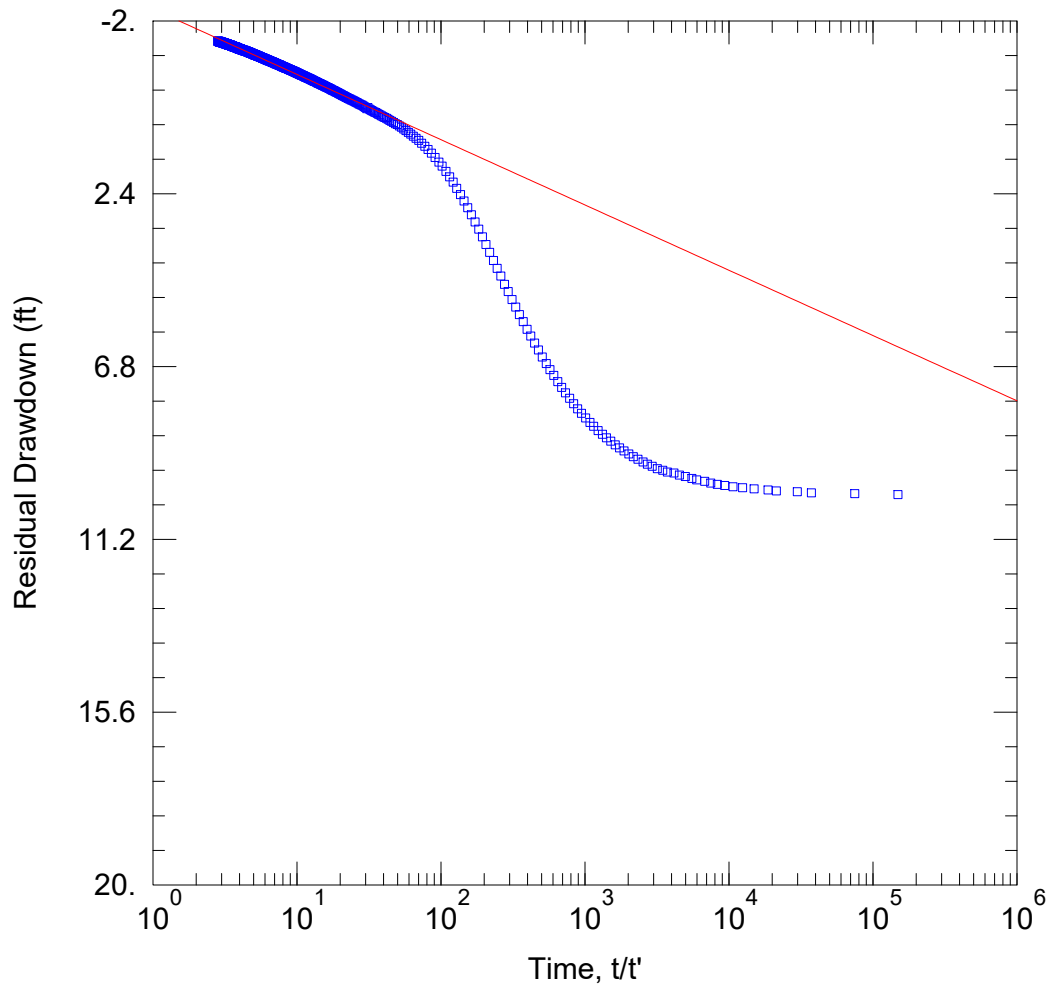
S = 0.00043

Kz/Kr = 0.1

Sw = 0.

r(w) = 0.37 ft

r(c) = 0.167 ft



MW-66A CONSTANT RATE TEST 2

Data Set: C:\...\MW-66A_CRT2_recovery_Theis.aqt

Date: 08/31/20

Time: 15:12:21

PROJECT INFORMATION

Company: Wood PLC

Client: Arizona Public Service

Project: 1420182040

Location: Navajo County, Arizona

Test Well: MW-66A

Test Date: 3/5/2020 - 3/6/2020

AQUIFER DATA

Saturated Thickness: 21.1 ft

Anisotropy Ratio (K_z/K_r): 0.1

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
MW-66A	0	0

Observation Wells

Well Name	X (ft)	Y (ft)
□ MW-66A	0	0

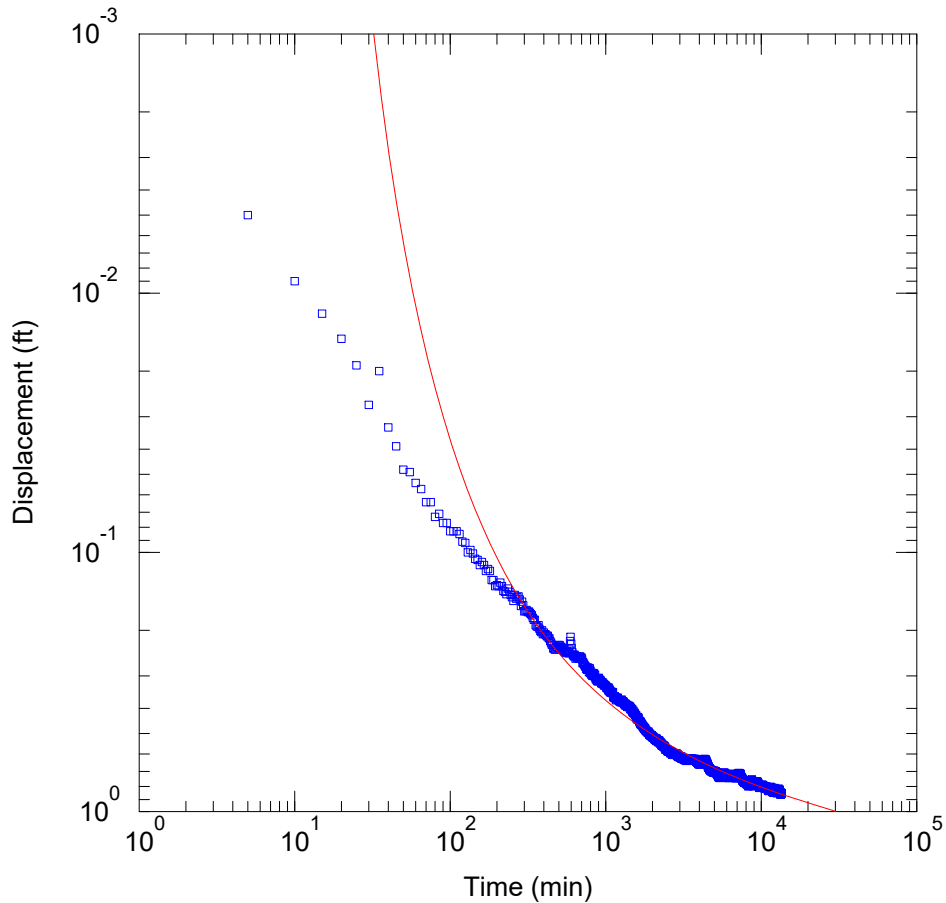
SOLUTION

Aquifer Model: Confined

Solution Method: Theis (Recovery)

T = 301.7 gal/day/ft

S/S' = 24.21



W-126 OW FOR HUNT B OPERATION (3/12 THROUGH 3/21)

Data Set: C:\...\W-126 Observation Data-Hunt B_0312to0321_Fractured_Moench.aqt
 Date: 08/27/20 Time: 08:29:07

PROJECT INFORMATION

Company: Wood PLC
 Client: Arizona Public Service
 Project: 1420182040
 Location: Navajo County, Arizona
 Test Well: Hunt B
 Test Date: 3/12/2020-3/21/2020

AQUIFER DATA

Saturated Thickness: 65.9 ft Slab Block Thickness: 2 ft

WELL DATA

Pumping Wells			Observation Wells		
Well Name	X (ft)	Y (ft)	Well Name	X (ft)	Y (ft)
Hunt B	669757.169	1428784.085	W-126	669678.48	1428723.33

SOLUTION

Aquifer Model: Fractured

Solution Method: Moench w/slab blocks

K = 7.223 ft/day

Ss = 0.0002426 ft⁻¹

K' = 1.717E-5 ft/day

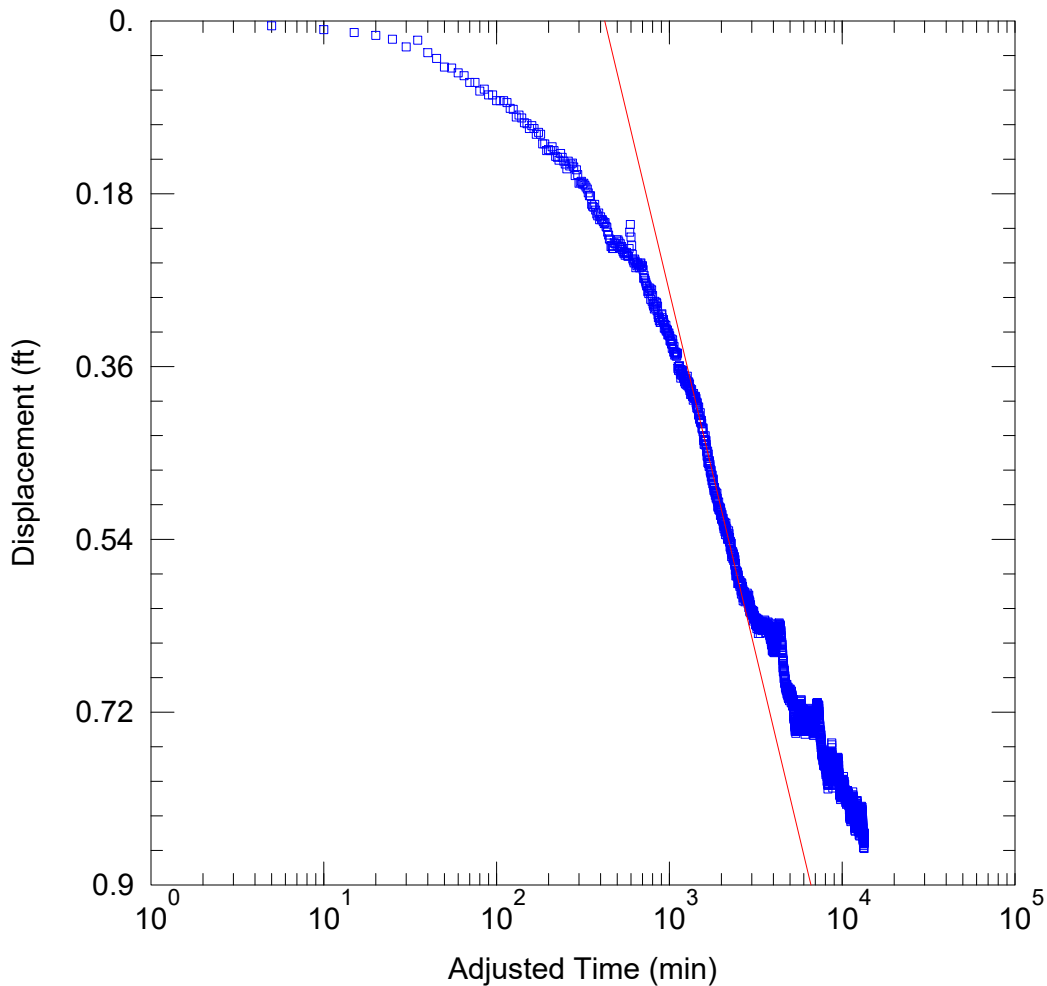
Ss' = 0.0008727 ft⁻¹

Sw = 0

Sf = 0

r(w) = 0.38 ft

r(c) = 0.21 ft



W-126 OW FOR HUNT B OPERATION (3/12 THROUGH 3/21)

Data Set: G:\...\W-126 Observation Data-Hunt B_0312to0321_Conf_CJ.aqt

Date: 01/19/21

Time: 10:07:12

PROJECT INFORMATION

Company: Wood PLC

Client: Arizona Public Service

Project: 1420182040

Location: Navajo County, Arizona

Test Well: Hunt B

Test Date: 3/6/2020 - 3/12/2020

AQUIFER DATA

Saturated Thickness: 65.9 ft

Anisotropy Ratio (Kz/Kr): 0.00298

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
Hunt B	669757.169	1428784.085

Observation Wells

Well Name	X (ft)	Y (ft)
□ W-126	669678.48	1428723.33

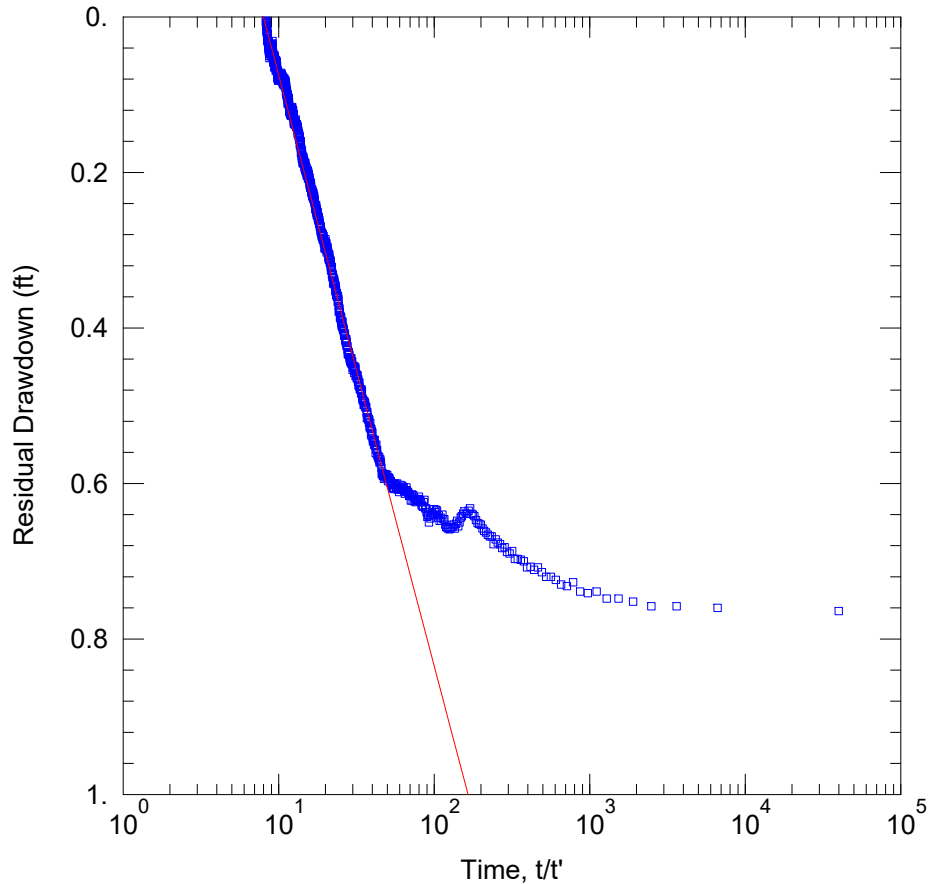
SOLUTION

Aquifer Model: Confined

Solution Method: Cooper-Jacob

T = 2974.1 gal/day/ft

S = 0.02653



W-126 OW FOR HUNT B RECOVERY DATA (3/12 THROUGH 4/13)

Data Set: C:\...\W-126 Observation Data-Hunt B_Recovery_theis.aqt
 Date: 08/27/20 Time: 08:14:39

PROJECT INFORMATION

Company: Wood PLC
 Client: Arizona Public Service
 Project: 1420182040
 Location: Navajo County, Arizona
 Test Well: Hunt B
 Test Date: 3/12/2020 - 4/13/2020

AQUIFER DATA

Saturated Thickness: 65.9 ft Anisotropy Ratio (Kz/Kr): 0.01

WELL DATA

Pumping Wells			Observation Wells		
Well Name	X (ft)	Y (ft)	Well Name	X (ft)	Y (ft)
Hunt B	669757.169	1428784.085	W-126	669678.48	1428723.33

SOLUTION

Aquifer Model: Confined Solution Method: Theis (Recovery)
 T = 2951.7 gal/day/ft S/S' = 7.979

APPENDIX C

SEEPAGE INTERCEPT SYSTEM EVALUATION AT THE FAP

Technical Memorandum

To:	Arizona Public Service Company	Project No:	14-2018-2040
From:	Dane Andersen, PG	Reviewed by:	Maren Henley, PE
Date:	January 31, 2021		
Project:	Cholla Power Plant Fly Ash Pond		
Re:	SEEPAGE INTERCEPT SYSTEM EVALUATION AT THE FAP Arizona Public Service Cholla Power Plant – Navajo County, Arizona		

1.0 INTRODUCTION

Wood Environment and Infrastructure Solutions, Inc. (Wood) has prepared this Technical Memorandum to document the inspection of seepage intercept systems at the Arizona Public Service Company (APS) Cholla Power Plant (the Plant) Fly Ash Pond (FAP). The purpose of the inspection was to evaluate the equipment, operation, and performance of the Geronimo and Hunt seepage intercept systems at the FAP. The work described herein was performed as part of pre-design studies to support the assessment of potential corrective measures for the FAP in accordance with 40 Code of Federal Regulations Sections 257.90 through 257.98 (herein referred to as the CCR Rule) (Federal Register, 2018).

APS maintains several seepage intercept trenches and extraction wells at the FAP which capture shallow impacted groundwater before it migrates downgradient in the alluvial aquifer system. The captured groundwater is then conveyed to the plant directly. Operational activities for these systems include weekly visits to each system by APS personnel and maintenance as required by APS contractors.

In December 2019, Wood visited the active seepage intercept systems at the FAP (i.e., the Geronimo and Hunt seepage collection systems) to inspect the seepage intercept system infrastructure, record which extraction wells and seepage collection sumps were equipped with pumps and set to operate, evaluate whether accessible wellhead control equipment was functional, deploy pressure transducers at the Geronimo and Hunt seepage collection sumps, and gather information regarding how to better monitor operations in the future. Additional inspections were conducted at the FAP in February and March 2020 in which extraction well pumping rates were measured, pressure transducers were deployed at the Geronimo seepage extraction wells, a voltage logger was installed at the Hunt seepage extraction well, and water quality samples were collected from the extraction wells and seepage collection sumps. The following sections discuss the data collected during the inspection activities.

2.0 EXISTING INFRASTRUCTURE

The Geronimo seepage collection system is depicted on Figure 1. Infrastructure design drawings (APS Drawing G-114438, Sheets 1, 3, and 4) and associated Arizona Department of Water Resources (ADWR) well records for are included in Attachment A. The Geronimo seepage intercept system consists of two intercept trenches connected to collection sumps and two seepage extraction wells. The intercept trenches are French



Drains that contain 4-inch (in.) diameter perforated high-density polyethylene (HDPE) pipes bedded in drainage rock wrapped by non-woven geotextile which are aligned subparallel to each other along the toe of the FAP dam. The perforated HDPE pipes are installed along the base of the intercept trenches at depths ranging between 4 and 6 feet (ft) below ground surface (bgs). The northeastern intercept trench also includes a retention basin connected to the eastern end of the HDPE pipe. The intercept trenches channel seepage water to collection sumps designated as Geronimo C and Geronimo D (also referred to as GSX-3 and GSX-4). The collection sumps are approximately 4 ft in diameter and extend to approximately 10.5 ft below bgs. The Geronimo seepage extraction wells Geronimo A and Geronimo B (also referred to as GSX-1 and GSX-2) are constructed of 5-in. diameter Schedule (SCH) 40 polyvinylchloride (PVC). The Geronimo A and B well screens are each installed from 20 to 40 ft bgs and have a 0.010-in. slot size. Geronimo A and B well discharge piping connects subgrade to discharge piping from sump Geronimo C prior to a confluence with discharge piping from sump Geronimo D and routing and connection to an above-grade piping system that conveys seepage back to the Plant.

The Hunt seepage collection system is depicted on Figure 2 and infrastructure design drawings (APS Drawing G-143718) and associated ADWR well records are included in Attachment A. The Hunt seepage intercept system consists of one intercept trench connected to a collection sump and one extraction well. The intercept trench is of the same design as the Geronimo intercept trench which is aligned parallel to the FAP dam and channels intercepted water to the Hunt A collection sump. The extraction well, Hunt B, is constructed of 5-in. diameter SCH 40 PVC with a screened interval from 19 to 49 ft bgs and a 0.020-in slot size. The extraction well discharge piping is routed subgrade north of the intercept trench and connects to the discharge piping of the collection sump before being routed through a box culvert that runs under Interstate 40 to above-grade piping that connects to discharge piping for the Geronimo seepage collection system.

Submersible pumps are installed in the Geronimo and Hunt seepage extraction wells and collection sumps and are set to operate when water reaches a defined level in each extraction well and collection sump. The collected water is then conveyed from each collection sump and extraction well through 2-in diameter pipelines to the Plant for disposal.

3.0 INSPECTION SUMMARY

Wood inspected the Geronimo and Hunt seepage collection systems on three separate site visits. The initial inspection occurred on December 3, 2019, the second inspection occurred between March 3 and 7, 2020, and the third inspection occurred on March 12, 2020. Photographs documenting Wood's inspections are included as Attachment B.

The Geronimo and Hunt sumps and extraction wells each contain a Grundfos submersible pump which is operated by a control box at the surface. The discharge pipelines leading from each submersible pump are exposed and insulated at the wellheads and sumps and configured with sampling ports. The Geronimo A and Geronimo B extraction wells each contain a PVC access port for water-level measurements. The ports were opened on March 12, 2020 with the assistance of APS site personnel for the deployment of pressure transducers. The Hunt B well is not configured with an access port, and to evaluate its operational schedule, Wood installed a voltage and amperage logging device on the Hunt B pump electrical panel on March 12, 2020. The Geronimo A and B transducer data and Hunt B logging device data are discussed in Section 5.0.

The pipelines leading from the Geronimo and Hunt seepage intercept systems converge into a single pipeline north of Interstate 40 at the toe of the FAP dam. A flow totalizer is installed on the Hunt discharge pipeline and on the Geronimo discharge pipeline downstream of the junction with the Hunt pipeline.

Because the Geronimo flow totalizer is installed downstream of the junction with the Hunt pipeline, it measures the combined flow collected by the Geronimo and Hunt seepage intercept systems. Site personnel reported frequent totalizer malfunctions resulting from scale buildup, an issue which is reportedly more frequent at the Geronimo totalizer. The malfunctions reportedly require cleaning of the Geronimo totalizer every two weeks and cleaning of the Hunt totalizer every month.

On December 3, 2019, the submersible pumps at Geronimo A, B, C, and D, and Hunt A and B were inspected; all pumps were capable of being started and in good repair. Hunt B and Geronimo C were the only pumps that were in operation (i.e., running) during the inspection. When the submersible pumps were inspected again on March 5, 2020, all pumps were again found to be in good repair and capable of operation except for Geronimo A, which was unable to be started. APS site personnel were notified of the inoperable status of Geronimo A and reported the pump is typically operational. Similar to the December 3 inspection, all of the submersible pumps were not in operation during Wood's inspections on March 5 and 6, 2020 with the exception of Hunt B and Geronimo C, which again were running during the inspection.

Wood estimated pumping rates for Geronimo B on March 5, 2020 and Hunt B on March 5 and 6, 2020. Pumping rates were measured by opening the sampling valves at the extraction well heads and measuring the time necessary to fill a container of known volume. The measurements were collected from the sampling valve after closing the valve on the subgrade pipeline routes the extracted water to the Plant, thereby channeling all extracted water to the sampling valve and measurement container. Geronimo B initially pumped at approximately 6 gallons per minute (gpm), but gradually declined to less than 1 gpm after pumping the well for approximately 10 minutes, suggesting that the initial pumping rate represented water pumped directly from the well casing and not the formation. A water sample was collected from the Geronimo B sampling valve after pumping the well for approximately 30 minutes. The Hunt B pump was noted to be running and pumping at approximately 8.5 gpm during three visits on March 5 and 6, 2020. A water sample was collected from Hunt B on March 6, 2020. Water samples were also collected from the sampling valves at the Geronimo C sump on March 5, 2020 and the Hunt A sump on March 7, 2020. The collected water quality data are discussed in Section 6.0.

4.0 GERONIMO AND HUNT TOTALIZER DATA

Measurements from the Geronimo and Hunt flow totalizers are recorded by APS site personnel on a weekly or bi-weekly basis. The totalizer measurements, which report total gallons, were converted to average gpm by dividing the difference between two totalizer readings by the time interval in-between the two readings (in minutes). The converted totalizer data for the Hunt intercept system and combined Geronimo and Hunt intercept systems are depicted as Figure 3, which also presents FAP water surface elevation measurements in feet above mean sea level.

For the period of examination, average flow rates calculated from the Hunt totalizer measurements have ranged from 0 to approximately 14 gpm, with more consistent flow rates ranging between approximately 6 and 8 gpm. The combined Geronimo/Hunt totalizer has ranged from 0 to approximately 40 gpm, with more consistent flow rates ranging between 10 and 30 gpm. However, several readings at the combined totalizer were less than the Hunt totalizer, which likely indicates issues with the combined totalizer.

Flow rates measured at the combined Geronimo and Hunt totalizer have generally decreased, while the Hunt totalizer measurements have remained relatively consistent. The water level in the FAP has also declined throughout the period of examination, suggesting the reduced flow rates measured at the Geronimo totalizer may result from decreasing head in the FAP. However, as previously discussed, the

accuracy of the totalizer readings is likely affected by malfunctions resulting from scale formation. Recommendations for improved monitoring of the intercept systems are provided in Section 7.0.

5.0 WATER LEVEL EVALUATION

Wood installed pressure transducers at the Geronimo C sump and Hunt A sump on December 3, 2019. On March 12, 2020, pressure transducers were installed at Geronimo A and B and a voltage/amperage logger was installed on the Hunt B electrical panel. The pressure transducer data and voltage/amperage logger are presented as Figures 4 through 9 and discussed in this section. Recommendations for improved monitoring of the extraction wells and collection sumps are provided in Section 7.0.

Figure 4 depicts water-levels collected at the Geronimo C sump between December 3, 2019 and February 12, 2020. As indicated in Figure 1, Geronimo C is a sump connected to the French Drain closest to the FAP dam. The water-level data indicate that the Geronimo C pump was functional from December 3 through January 18. For an unknown reason, the pump did not operate between January 18 and February 7, and then operated sporadically between February 7 and 10. Figure 5 depicts a detailed view of sump water levels while the pump was operating. The Geronimo C pump starts when the sump water level reaches approximately 7.8 ft bgs and stops when the water level reaches approximately 8.5 ft bgs (Figure 5). When the pump shuts off, the sump water level rises from 8.5 to 7.8 ft bgs in approximately 75 minutes. Assuming a sump diameter of 4 ft, an approximate average flow rate for seepage water entering the Geronimo C sump of 0.9 gpm (i.e., the water-level data indicate that the intercept trench connected to Geronimo C captures 0.9 gpm).

Water-level data collected from Geronimo A, Geronimo B, and nearby piezometer F-111 between March 12 and April 13 are depicted as Figure 6. For the period of examination, the Geronimo B pump did not run, as indicated by the stable water level of approximately 15 ft bgs. Possible reasons for this include pump malfunctions, level control malfunctions, or improper placement of the level controls (i.e., the level control which activates the pump was above the static water level). The Geronimo A pump was functional, suggesting the pump was repaired after Wood's inspection on March 5, 2020. Its operation varied between intermittent and continuous pumping (Figure 7), which may indicate issues with the level controls or submersible pump.

No drawdown appears to have occurred in either F-111 or Geronimo B while Geronimo A was pumping. Additionally, the F-111 water level is approximately 11 ft higher than the static water level measured at Geronimo B. It should be noted that the extraction wells and F-111 are relatively close to each other (within approximately 14 to 16 ft) and the F-111 screened interval extends from 25.5 to 45.5 ft bgs, while the Geronimo extraction wells are screened from 20 to 40 ft bgs. The data may be interpreted to indicate:

- A limited cone of depression caused by Geronimo A pumping, as indicated by no drawdown in Geronimo B or F-111; and
- An upward hydraulic gradient at the toe of the FAP, as indicated by the higher water level at F-111 (which is screened 5.5 ft below the bottom of the extraction well screens).

Figure 8 depicts transducer data collected from the Hunt A collection sump between December 3, 2019 and February 12, 2020. As indicated in Figure 2, Hunt A is a sump connected to the French Drain installed south of and parallel to Interstate 40. As depicted on Figure 8, the Hunt A sump water level remained relatively

consistent at approximately 6 ft bgs until February 11, 2020, when an abrupt water level increase occurred, which may be related to the operation of the Hunt B pump.

Figure 9 depicts the operational schedule of Hunt B (based on the voltage and amperage logging device installed on the pump motor controller) and water levels measured at monitoring well W-126 between March 4 and April 13, 2020. As noted on the figure and in Wood's documentation of aquifer tests conducted at the FAP in March 2020, a connection is apparent between the operation of the Hunt B pump and water levels at W-126 (Wood, 2020a). The Hunt B pump was intentionally stopped on March 6 to avoid interfering with the FAP aquifer tests and reset to automatic operation on March 12, 2020. On April 9, the Hunt B pump stopped automatically for an unknown reason. While the Hunt B pumping rate is unknown for the period of examination, the flow totalizer data presented in Section 4.0 suggests an average flow rate of approximately 6 to 7 gpm for March and April 2020; this is considered a reasonable average monthly flow rate estimate given the instantaneous pumping rate measured at Hunt B in March 2020.

6.0 WATER QUALITY DATA

The laboratory analytical report for the samples collected during Wood's inspection is included as Attachment C. Table 1 summarizes the analytical results for the water samples collected at Geronimo B, Geronimo C, Hunt A, and Hunt B. For comparison, Table 1 also presents analytical data from pond water samples collected from the FAP in December 2016 and groundwater samples collected at nearby monitoring wells W-123, and W-126 in May 2020.

The similar concentrations of boron, fluoride, and molybdenum detected in the Geronimo C, Hunt A, Hunt B, W-123, and W-126 samples suggests the Geronimo and Hunt seepage intercept systems capture seepage water that is also intercepted by wells W-123 and W-126.

For the Geronimo B water sample, arsenic, chromium, lithium, and molybdenum were detected above respective CCR Rule Appendix IV groundwater protection standards. The elevated concentrations of arsenic, chromium, and iron (three constituents which are sensitive to oxidation/reduction [redox] reactions in aqueous solutions) are relatively high compared to the other samples, and the detected chromium concentration of 0.450 milligrams per liter is two orders of magnitude higher than the chromium concentration detected in the FAP water sample. It is possible that the anomalously high arsenic, chromium, and iron concentrations in the Geronimo B sample may have resulted from the lack of a sufficient well purge prior to sampling. As previously noted, the Geronimo B extraction well does not run continuously, and the well casing may not have been fully purged of stagnant water before sampling. Therefore, the detected concentrations of arsenic, chromium, and iron are not likely representative of groundwater conditions and may have resulted from redox reactions occurring in stagnant water within the Geronimo B well casing.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Flow totalizer data collected throughout 2020 suggest the entire Geronimo seepage intercept system collects an average of approximately 4 to 5 gpm, though flow estimates using the totalizer data may be questionable due to totalizer issues resulting from scale formation. The operational schedules and pumping rates for the Geronimo seepage extraction wells are currently unknown. The wells are either inoperable (Geronimo B) or operate intermittently with a limited radius of influence (Geronimo A), which may be caused by clogging of the well screen or filter pack by scale formation. Additionally, the Geronimo extraction well screen slot size of 0.010-in is not likely suitable for the fine-grained material in which the wells are screened. The water-level data collected from the Geronimo C sump suggest the northeastern intercept trench

captures approximately 0.9 gpm, while flow rates for the southwestern Geronimo seepage intercept trench are currently unknown.

The majority of seepage water intercepted by the Hunt system is captured by the Hunt B extraction well, as indicated by the minimal amount of seepage water that entered the Hunt A sump during the monitoring period. Hunt B was observed to pump at approximately 8.5 gpm during Wood's inspection, and flow totalizer data collected throughout 2020 from the Hunt discharge pipeline indicates an average flow rate for the Hunt intercept system of approximately 6 gpm. The pumping radius of influence for Hunt B extends at least to W-126, which is located approximately 110 ft southwest of the extraction well.

One of the first actions Wood recommends is to investigate the operation of the extraction wells further. The goal would be to determine whether the observed pumping anomalies (e.g. cyclical pumping of Geronimo A and lack of pumping of Geronimo B despite high water levels) are due to electrical, instrumentation and controls, or pump issues. Wood would bring a troubleshooting operations and electrical expert onsite for a more thorough evaluation.

Based on the results of the data collection activities presented herein, Wood recommends the following improvements to the Geronimo and Hunt seepage intercept systems:

- Equipping the submersible pumps at collection sumps and extraction wells with durable flow meters and hour meters to better determine pumping rates and operational schedules;
 - Magnetic flow meters are a good option for measurement, as they are less susceptible to fouling from scaling;
- Installing an access port and sounding tube in the Hunt B extraction well to monitor water levels at the well;
- Replacing the Geronimo extraction wells with new extraction wells, as proposed in Wood's Well Installation Work Plan for the FAP (Wood, 2020b);
- If each pump location is installed with its own flow meter with totalizing capabilities, then Wood would recommend removing the flow totalizers on the Hunt line and the combined Geronimo/Hunt line, as this data can be obtained from the new flow meters. If totalizers are still desired at these locations, it would be beneficial to replace these with meters that are less susceptible to fouling from scale build-up. Magnetic flow meters are a good option to minimize issues due to scaling. This type of meter does require a power supply.
- Wood also recommends installing an air release valve at the high point in the piping at each well before the piping goes below grade. Air bubbles can build up and cause issues in the line and possibly with pump operation.

8.0 REFERENCES

Federal Register. 2018. 40 *Code of Federal Regulations Part 257 – Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities; Final Rule promulgated April 17, 2015 with Amendments to the National Minimum Criteria (Phase One, Part One) effective August 29, 2018.*

Wood Environment and Infrastructure (Wood), 2020a. *Aquifer Tests at FAP Wells W-123, W-126, and MW-66A. Arizona Public Service Cholla Power Plant – Navajo County, Arizona.* October 20, 2020.

Wood, 2020b. *Work Plan – Well Installation, Aquifer Testing, and Investigative Drilling at the Fly Ash Pond, Arizona Public Service Company Cholla Power Plant. Navajo County, Arizona.* November 23, 2020.

TABLE

Table 1 - Analytical Results for Water Samples Collected in March and May, 2020

Sample Location			FAP Water	Geronimo B	Geronimo C	Hunt A	Hunt B	W-123	W-126
Analyte	Units	GWPS	3/30/2019	3/5/2020	3/5/2020	3/7/2020	3/5/2020	5/6/2020	5/6/2020
Boron	mg/L	---	350	20	67	31	31	37	50
Arsenic	mg/L	0.01	0.17	0.024	0.010	<0.010	<0.010	0.0012	0.0014
Chromium	mg/L	0.1	0.0024	0.450	<0.020	<0.020	<0.020	0.076	0.0053
Cobalt	mg/L	0.006	0.0053	<0.005	<0.005	<0.005	<0.005	0.0030	0.0038
Fluoride	mg/L	4	68	1.6	6.7	1.5	3.2	4.8	4.1
Lithium	mg/L	0.31	4.1	0.71	1.2	<2.0	0.72	0.83	1.1
Molybdenum	mg/L	0.1	0.52	0.700	0.025	0.230	0.410	0.30	0.22
Manganese	mg/L	---	NA	0.920	0.180	0.230	0.890	<0.01	0.12
Iron	mg/L	---	NA	34	0.11	<1.0	<0.10	0.16	<0.10

Notes:

Appendix III constituents are highlighted in light green

Appendix IV constituents are highlighted in dark green

Concentrations exceeding respective Groundwater Protection Standards are bolded

Abbreviations:

FAP - Fly Ash Pond

ft - feet

GWPS - Groundwater Protection Standard

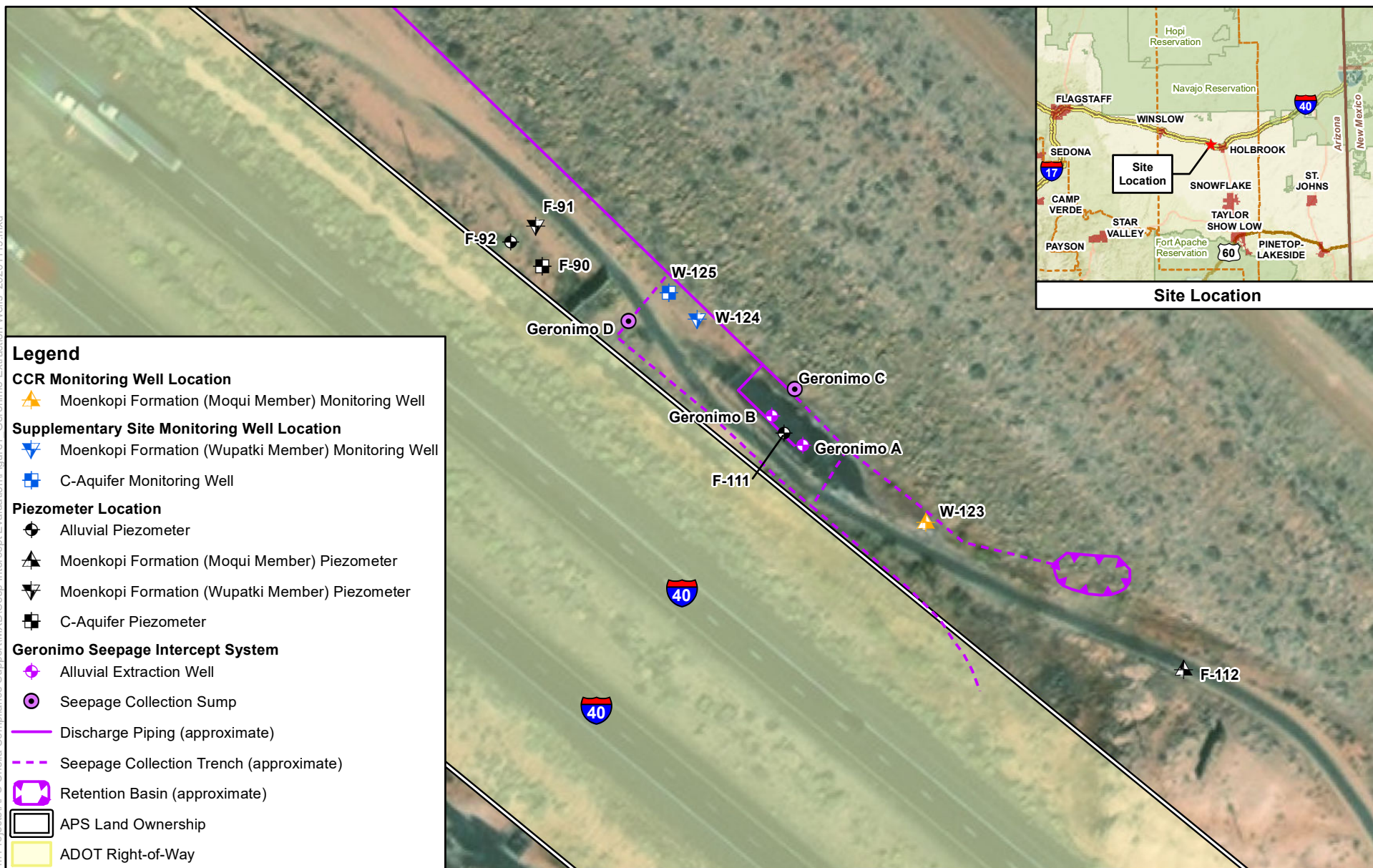
mg/L - milligrams per liter

NA - No data available

ug/L - micrograms per liter

FIGURES

Path: X:\Projects\20-Longterm Projects\APS Cholla Compliance Support\MXD\Seep Intercept Evaluation\Figure1 Geronimo Extraction Wells 20201119.mxd



Legend

CCR Monitoring Well Location

- Orange triangle: Moenkopi Formation (Moqui Member) Monitoring Well

Supplementary Site Monitoring Well Location

- Blue triangle: Moenkopi Formation (Wupatki Member) Monitoring Well
- Blue square: C-Aquifer Monitoring Well

Piezometer Location

- Black circle with cross: Alluvial Piezometer
- Black triangle with cross: Moenkopi Formation (Moqui Member) Piezometer
- Black inverted triangle with cross: Moenkopi Formation (Wupatki Member) Piezometer
- Black square with cross: C-Aquifer Piezometer

Geronimo Seepage Intercept System

- Purple diamond with cross: Alluvial Extraction Well
- Purple circle with cross: Seepage Collection Sump
- Purple line: Discharge Piping (approximate)
- Purple dashed line: Seepage Collection Trench (approximate)
- Purple outline: Retention Basin (approximate)
- White box: APS Land Ownership
- Yellow box: ADOT Right-of-Way

0 50 100 200
Feet



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Job No. 14-2018-2040
PM: MH
Date: 11/24/2020
Scale: 1" = 100'

Arizona Public Service
Cholla Power Plant
Navajo County, Arizona

Geronimo Seepage Intercept System Map

FIGURE
1

wood.

Path: X:\Projects\20-Longterm Projects\APS Cholla Compliance Support\MXD\Seep Intercept Evaluation\Figure2 - HuntSeepageInterceptSystem - 20201123.mxd



Legend

Supplementary Site Monitoring Well Location

- ▲ Moenkopi Formation (Moqui Member) Monitoring Well

Seepage Intercept System

- ▲ Moenkopi Formation (Moqui Member) Extraction Well
- Seepage Collection Sump

- Discharge Piping (approximate)
- - - Seepage Collection Trench (approximate)

- APS Land Ownership
- ADOT Right-of-Way



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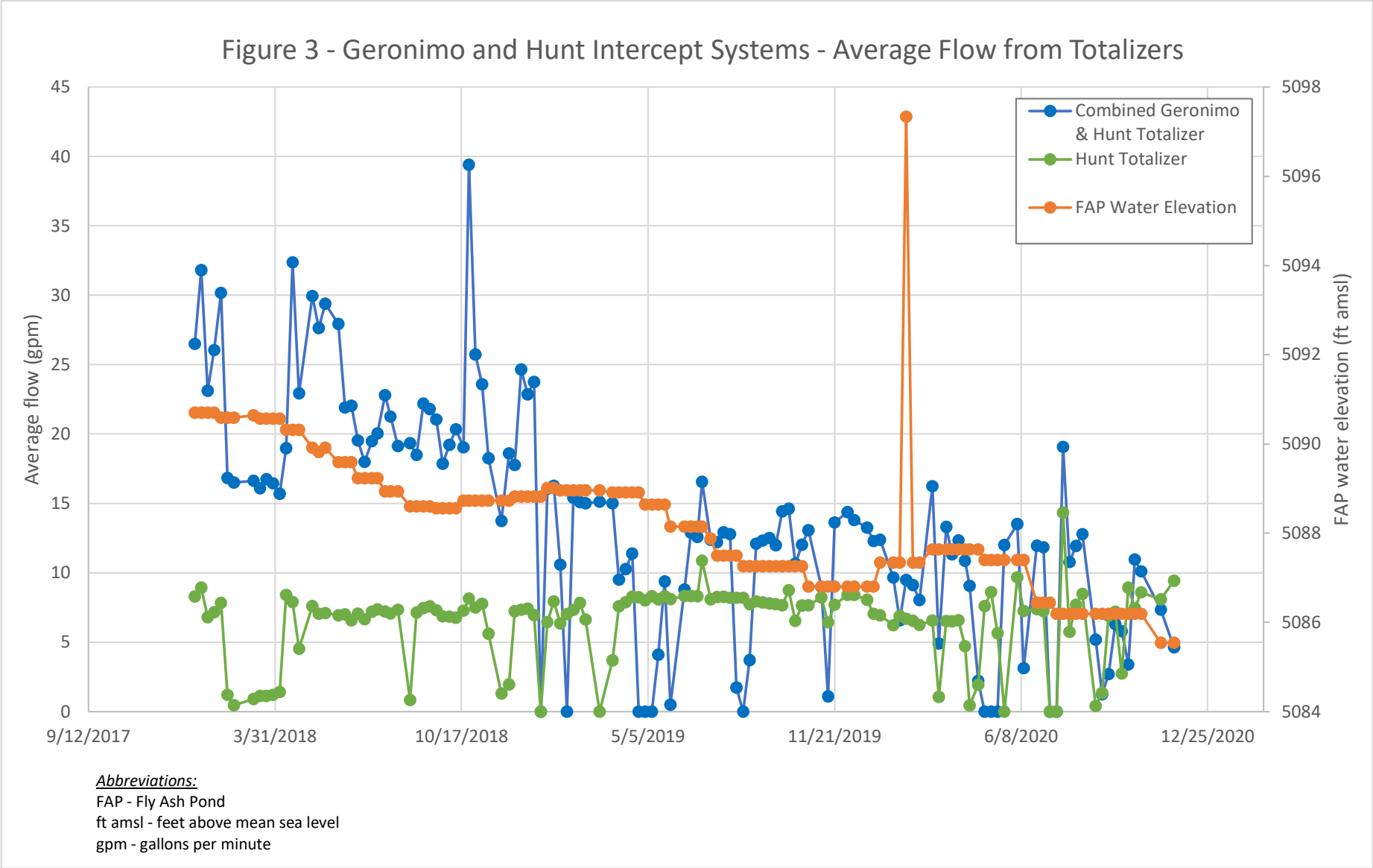
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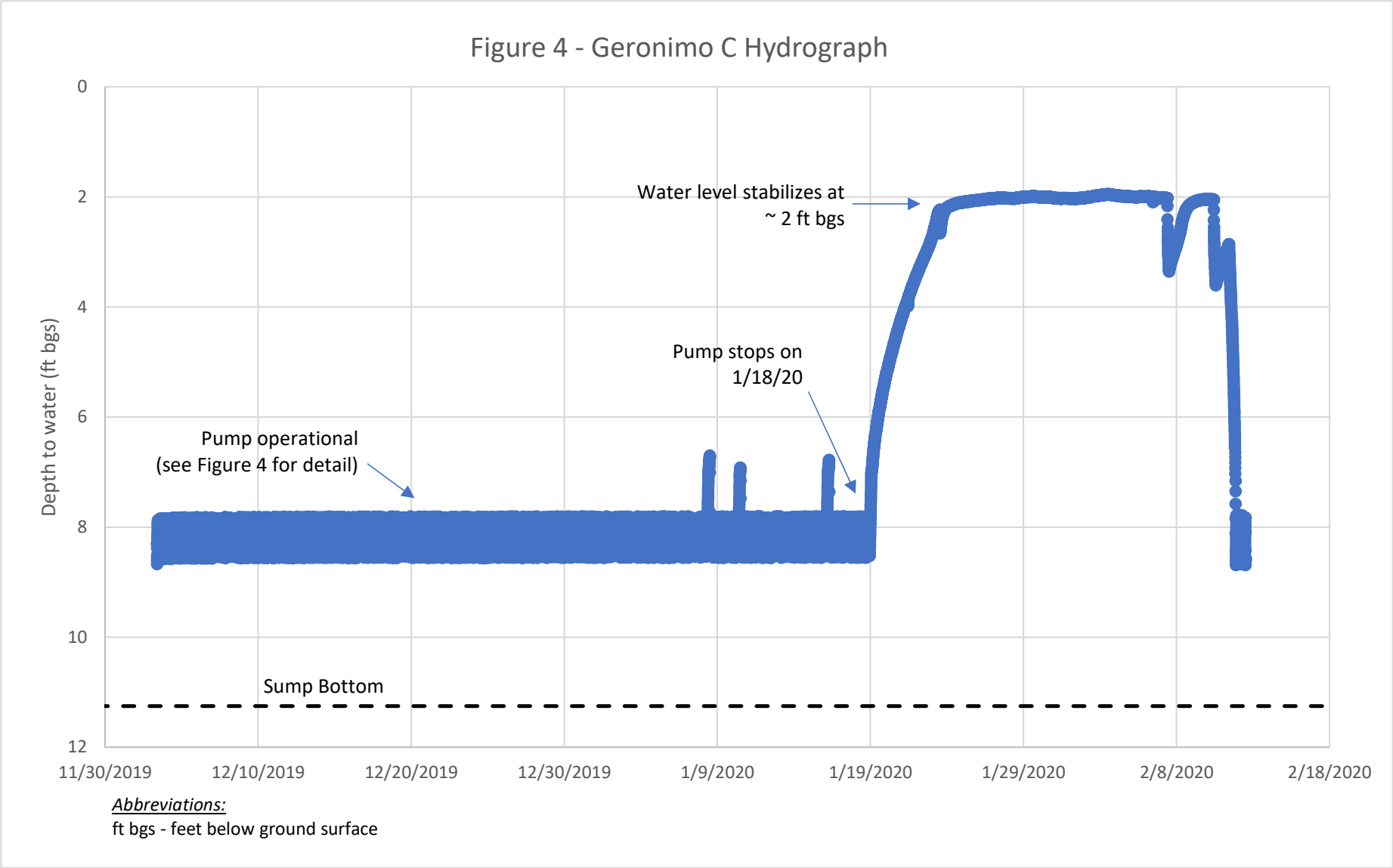
Arizona Public Service
Cholla Power Plant
Navajo County, Arizona

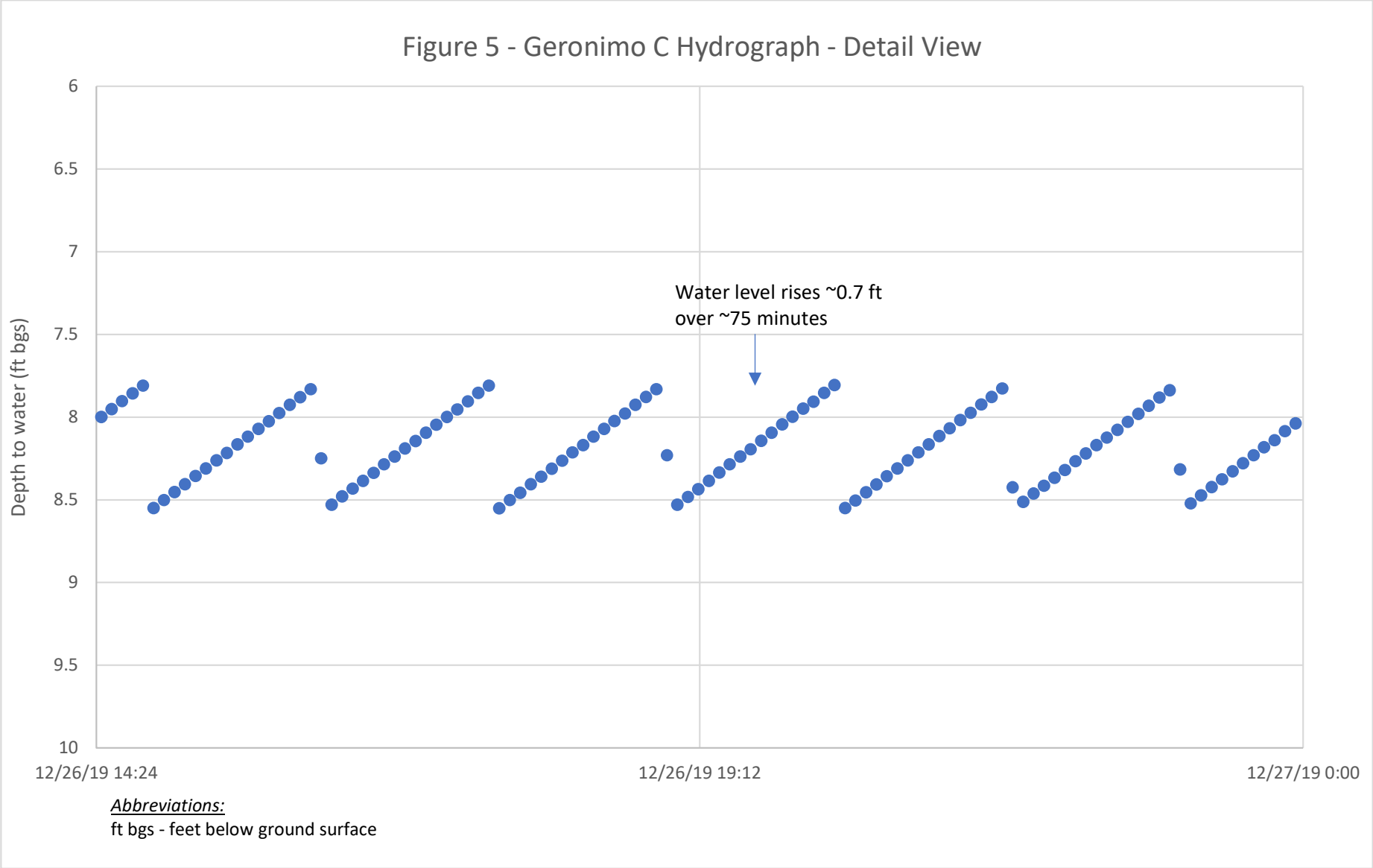
Hunt Seepage Intercept System Map

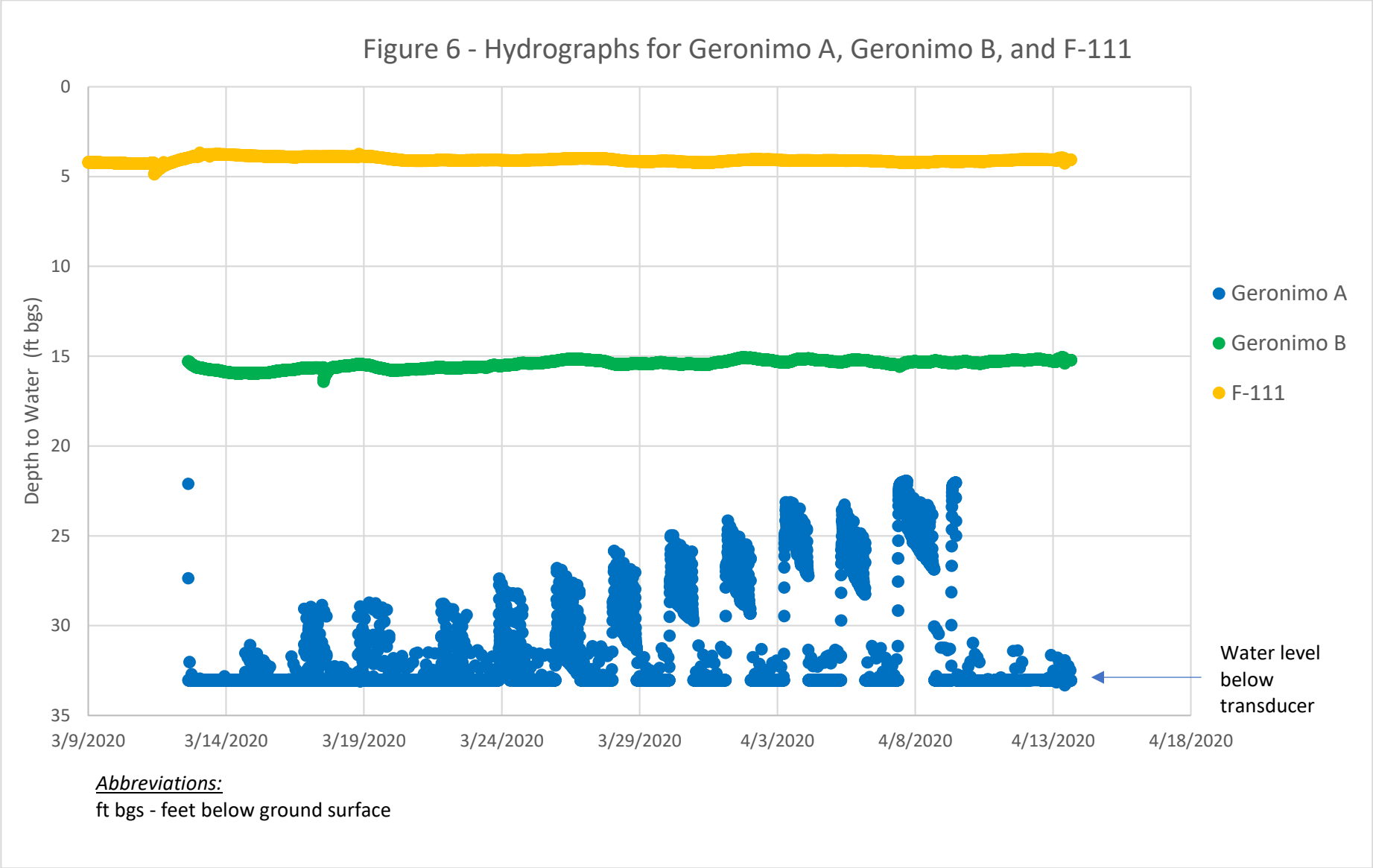
FIGURE
2

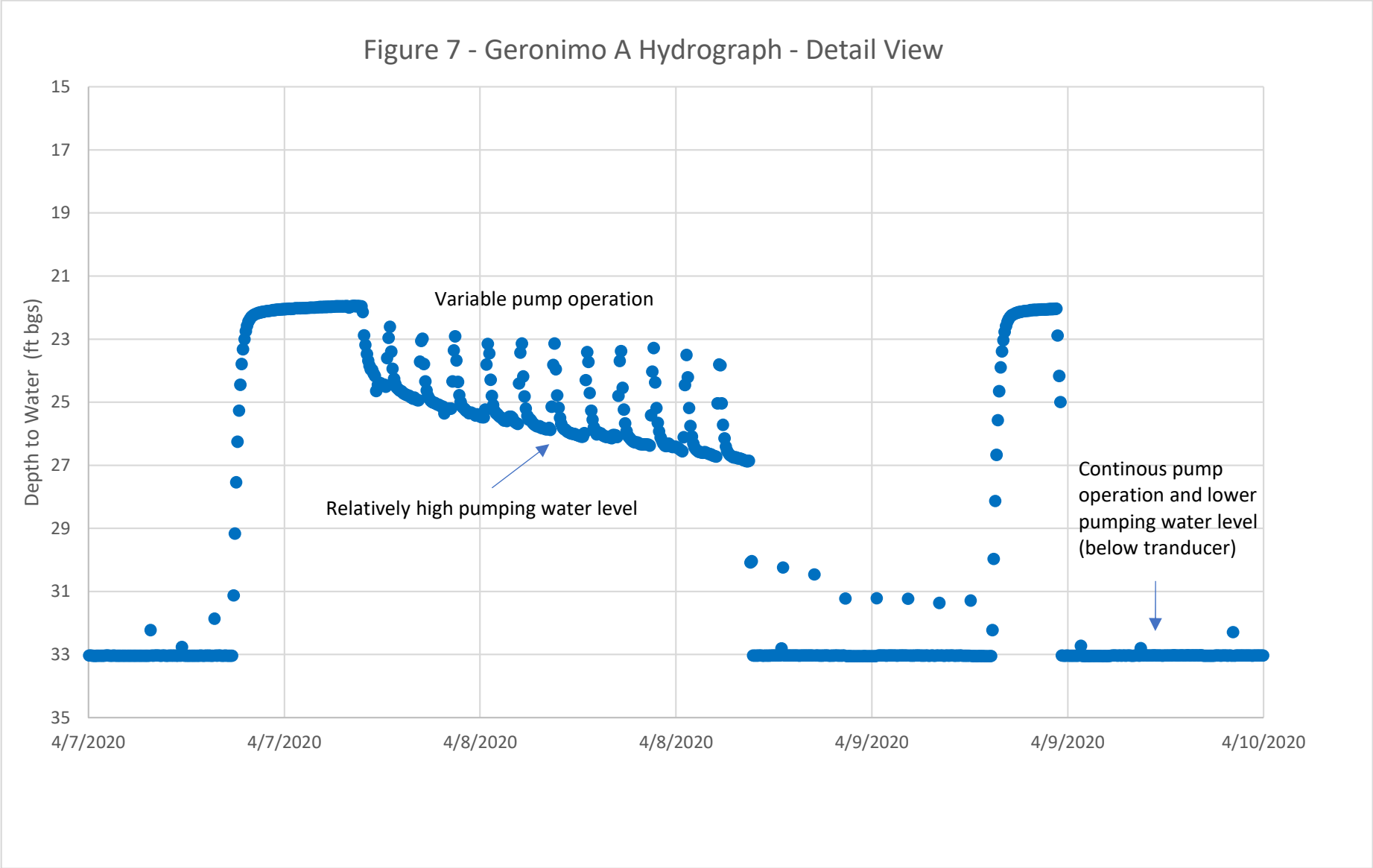
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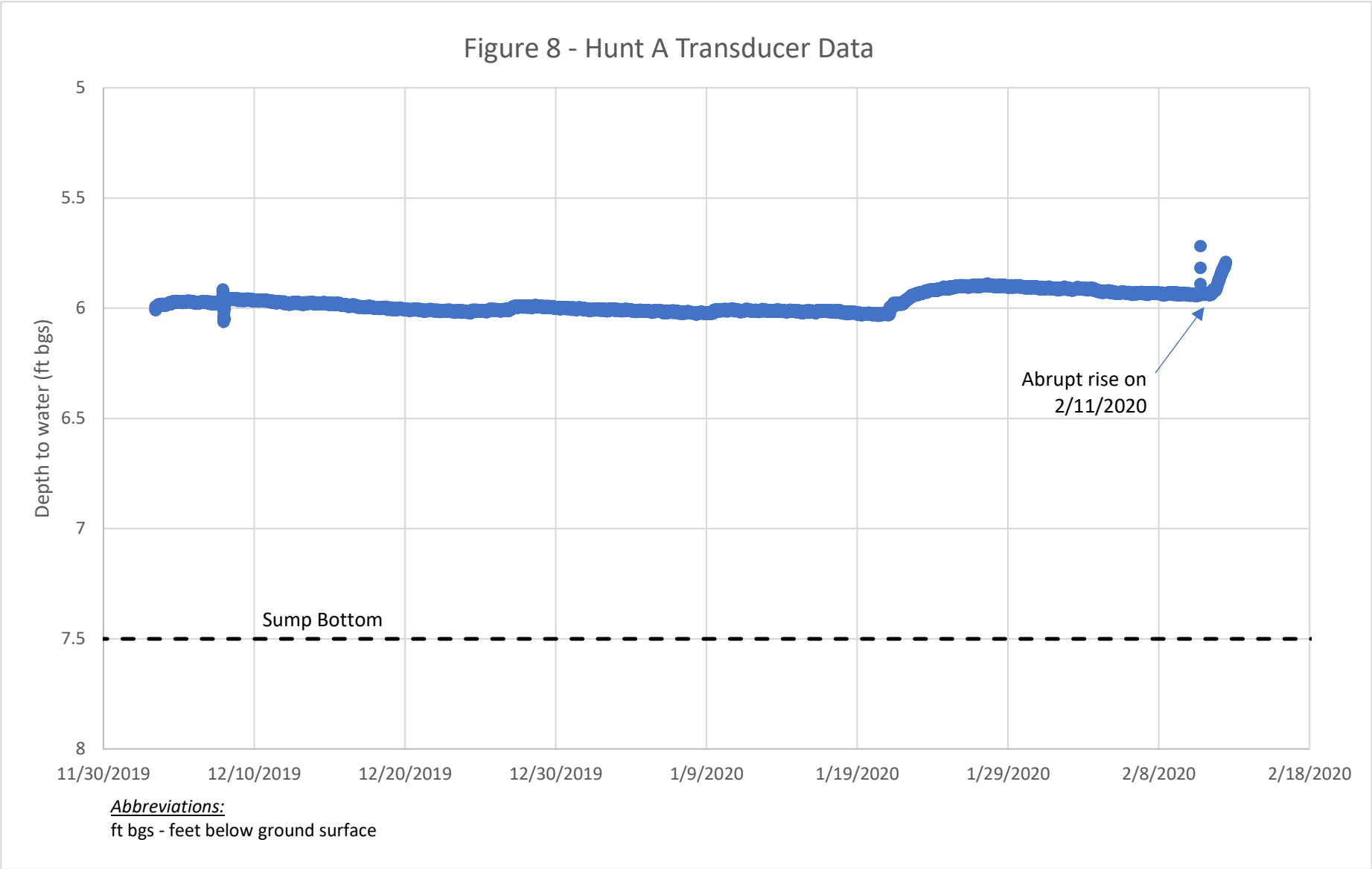


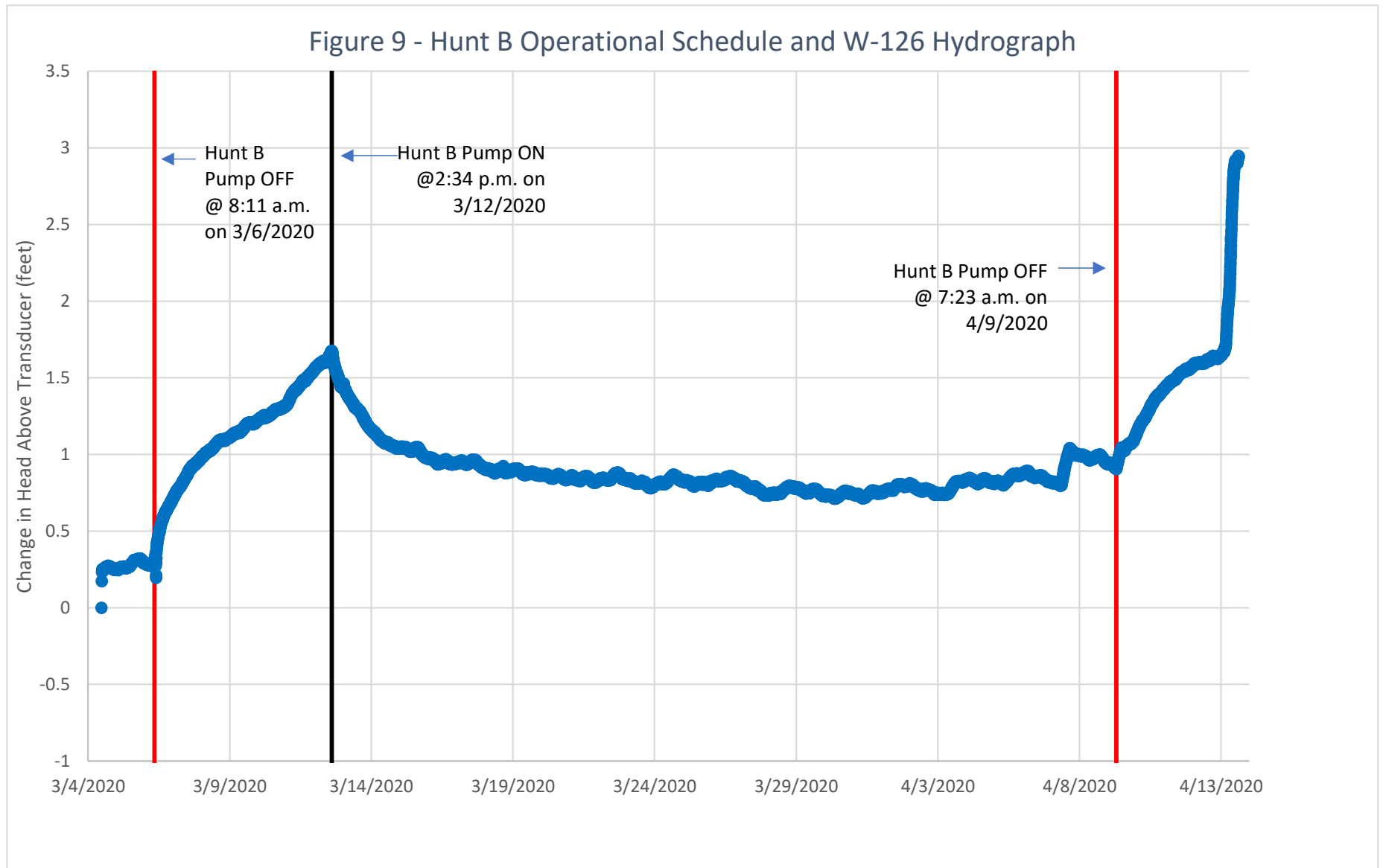




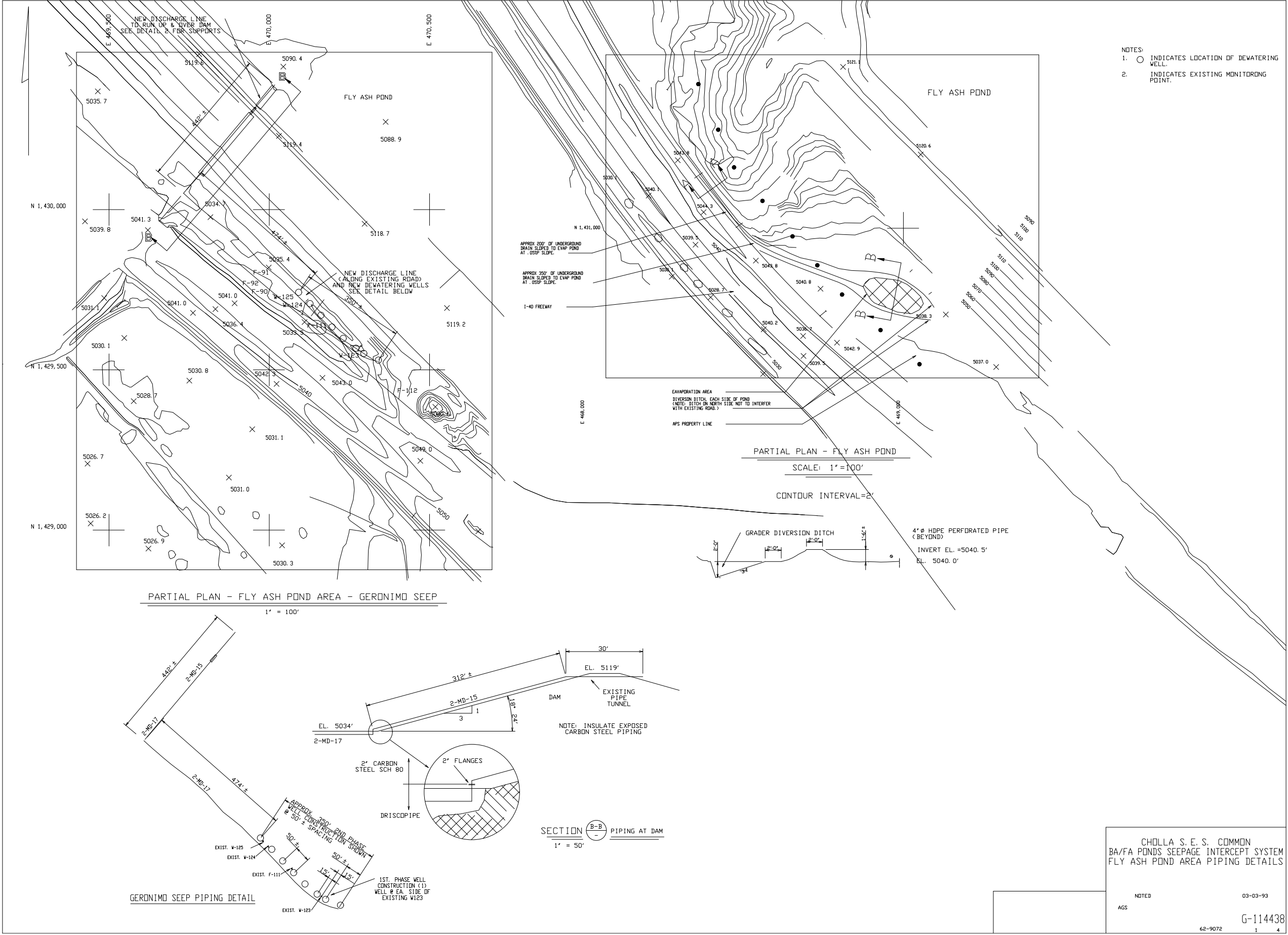








ATTACHMENT A - INTERCEPT SYSTEM DESIGN DRAWINGS

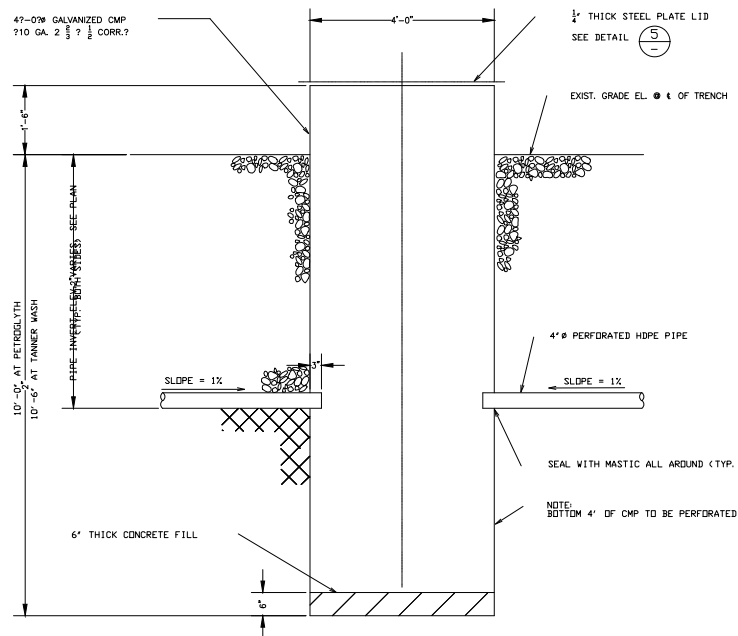


EXTRACTION WELLS AND SUMPS				
FLY ASH POND AREA				
WELL/SUMP NUMBER	PLANT COORDINATES		MAPPING COORDINATES	
	NORTH	EAST	NORTH	EAST
GSX-1	417.7990	11351.3784	1429646.0824	470175.4157
GSX-2	411.5284	11381.5421	1429624.4495	470197.4124
GERONIMO SUMP	422.2951	11355.4277	1429664.4520	470192.0531

BOTTOM ASH POND AREA				
WELL/SUMP NUMBER	PLANT COORDINATES		MAPPING COORDINATES	
	NORTH	EAST	NORTH	EAST
TXW-1	5204.2572	1928.0110	1438762.937	464831.673
TXW-2	5178.2616	1942.2654	1438733.350	464829.629
TXW-3	5113.1017	2131.0823	1438576.484	464953.393
TXW-4	5143.1435	2096.7959	1438620.300	464940.757
TXW-5	5175.5858	2058.5658	1438668.267	464926.098
TXW-6	5208.0803	2020.9724	1438715.934	464912.003
TXW-7	5239.4092	1982.3336	1438763.184	464896.398
TXW-8	5298.1537	1962.1322	1438823.545	464911.144
TXW-9	5346.6895	1955.1735	1438862.774	464939.910
TXW-10	5354.9447	2018.6853	1438840.816	464989.420
TANNER SUMP	4825.8621	2434.8512	1438170.545	465053.958
PETROGLYPH SUMP	4335.7754	2017.8716	1437983.209	464438.132

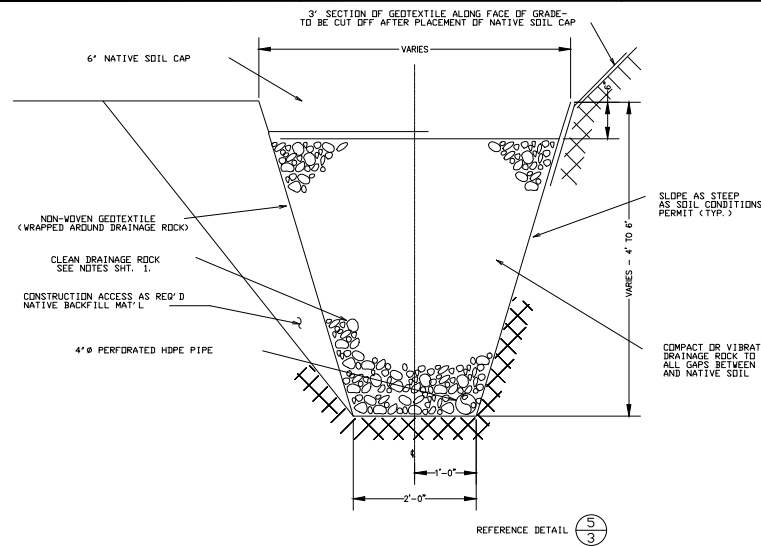
MONITOR WELLS AT B-226 SEEP AREA				
WELL/SUMP NUMBER	PLANT COORDINATES		MAPPING COORDINATES	
	NORTH	EAST	NORTH	EAST
B-226	5191.3692	1934.0914	1438748.802	464829.829
B-228	5108.8360	2138.0474	1438585.965	464967.755
B-229	5339.3267	2070.0092	1438799.939	465024.193
B-230	5379.5081	1926.5358	1438911.279	464925.109

AQUIFER PROTECTION PERMIT WELLS				
WELL/SUMP NUMBER	PLANT COORDINATES		MAPPING COORDINATES	
	NORTH	EAST	NORTH	EAST
UST-1	-1283.876	1301.135	1433639.579	460797.005
CR-1	-3130.265	-2059.037	1433900.451	456970.549



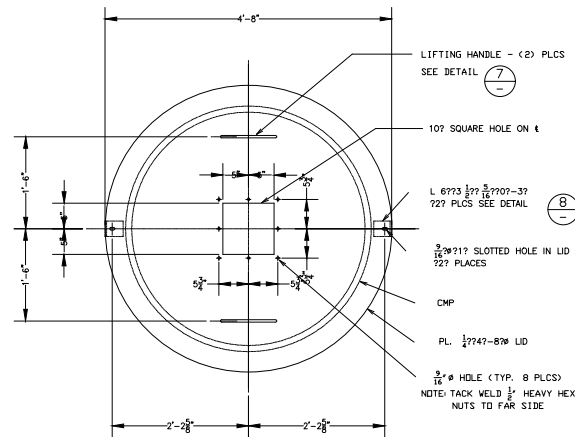
DETAIL 4 TYPICAL COLLECTION SUMP

3/4 = 1' - 0"



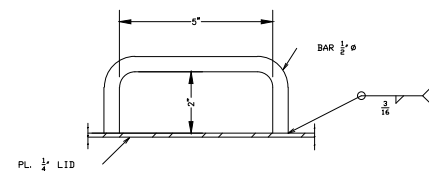
DETAIL 2 TYPICAL INTERCEPT TRENCH

1' = 1' - 0"



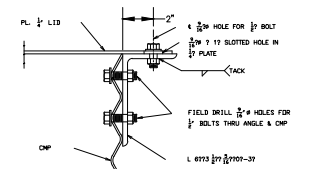
DETAIL 5 TYPICAL SUMP LID

1' = 1' - 0"



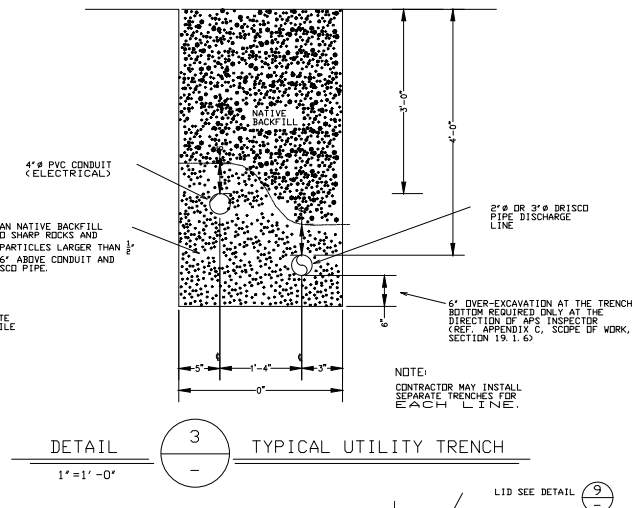
DETAIL 7 TYPICAL SUMP LID HANDLE

6' = 1' - 0"



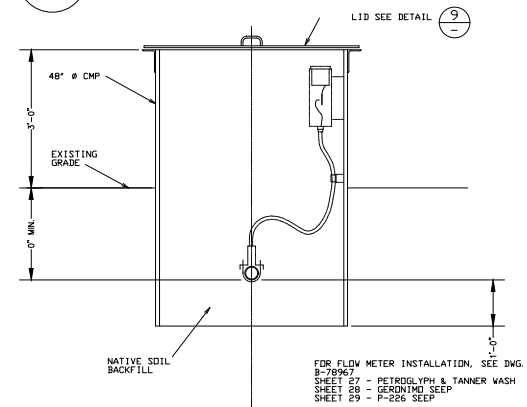
DETAIL 8 TYPICAL CMP LID ATTACHMENT

3' = 1' - 0"



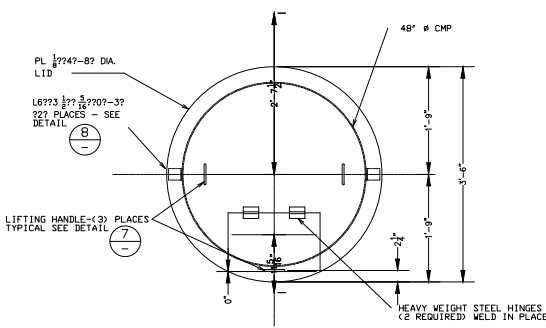
DETAIL 3 TYPICAL UTILITY TRENCH

1' = 1' - 0"



DETAIL 6 TYP. FLOW METER ENCLOSURE

3/4 = 1' - 0"




DETAIL 9 TYP. FLOW METER LID

1' = 1' - 0"

5	3-22-84	ADD WELL LOCATION TABLE	PRATT	WMS			NOS	61-9072
4	12-10-83	DET. 1 ELIMINATED FOR AS-BUILTS	PRATT	WMS			NOS	61-9072
3	11-16-83	REVISED FOR AS-BUILTS	PRATT	WMS			NOS	61-9072
2	5-24-83	REV. PER PRE-BID MEETING	PRATT	WMS			NOS	61-9072
1	4-28-83	REV. PER CONSTR. REVIEW	PSS	WMS			NOS	61-9072
NO.	DATE	REVISION	BY	CHKD	EXTD	APPROV	W.A.	

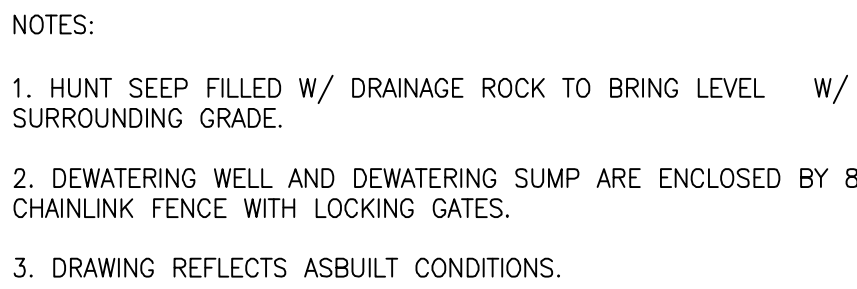
**CHOLLA S.E.S. COMMON
 BOTTOM ASH / FLY ASH PONDS
 SEEPAGE INTERCEPT SYSTEM
 SECTIONS & DETAILS**



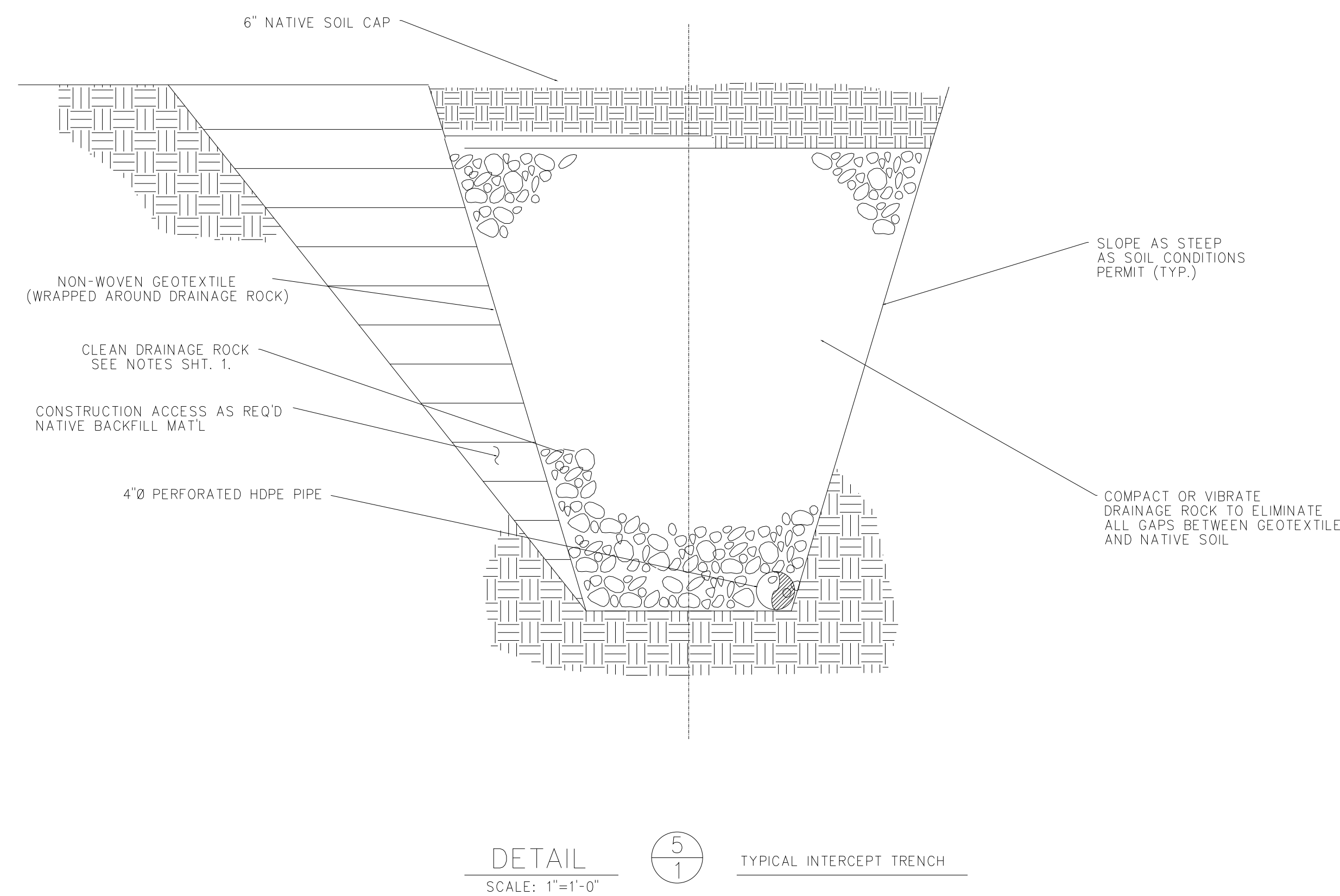
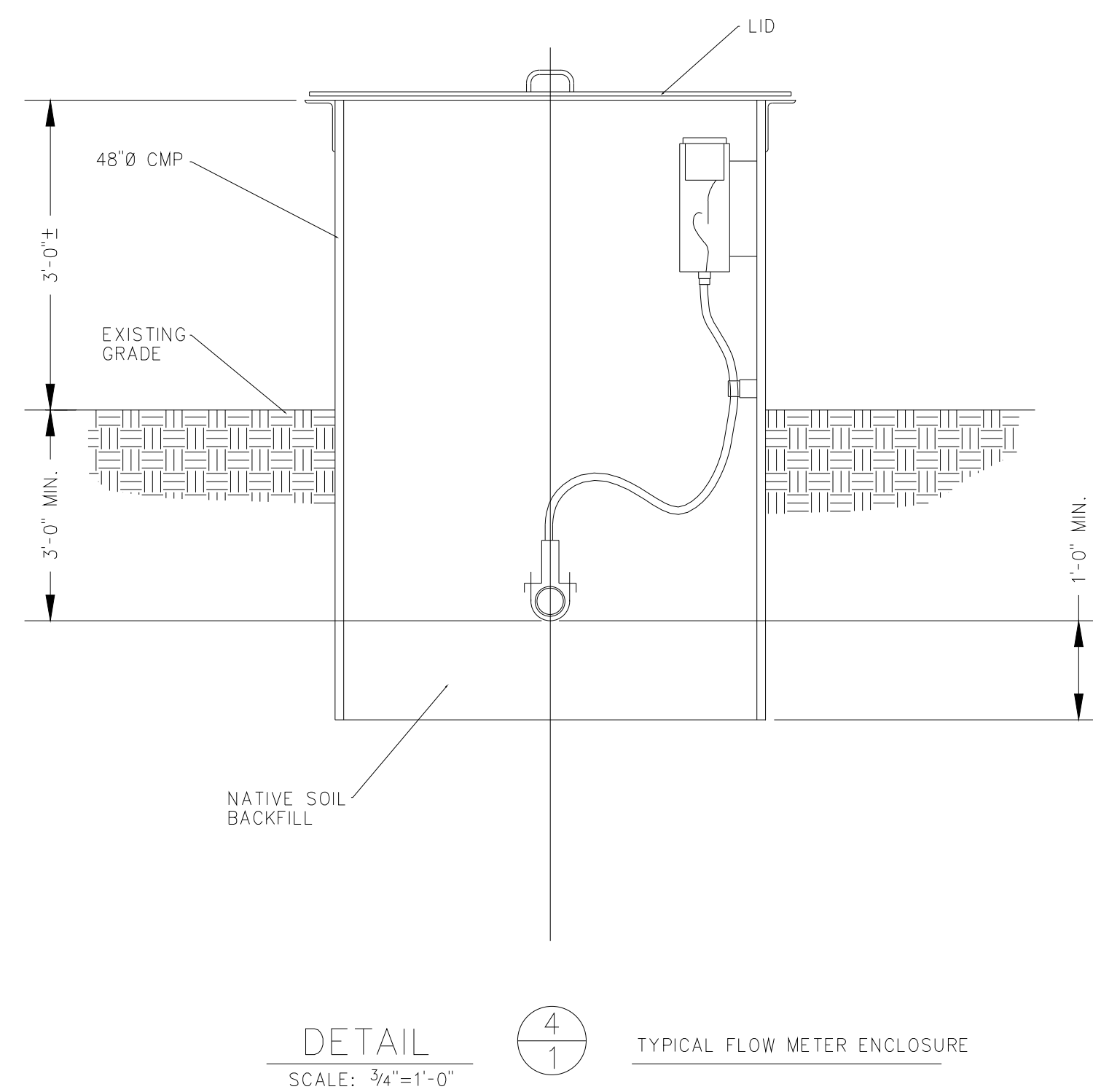
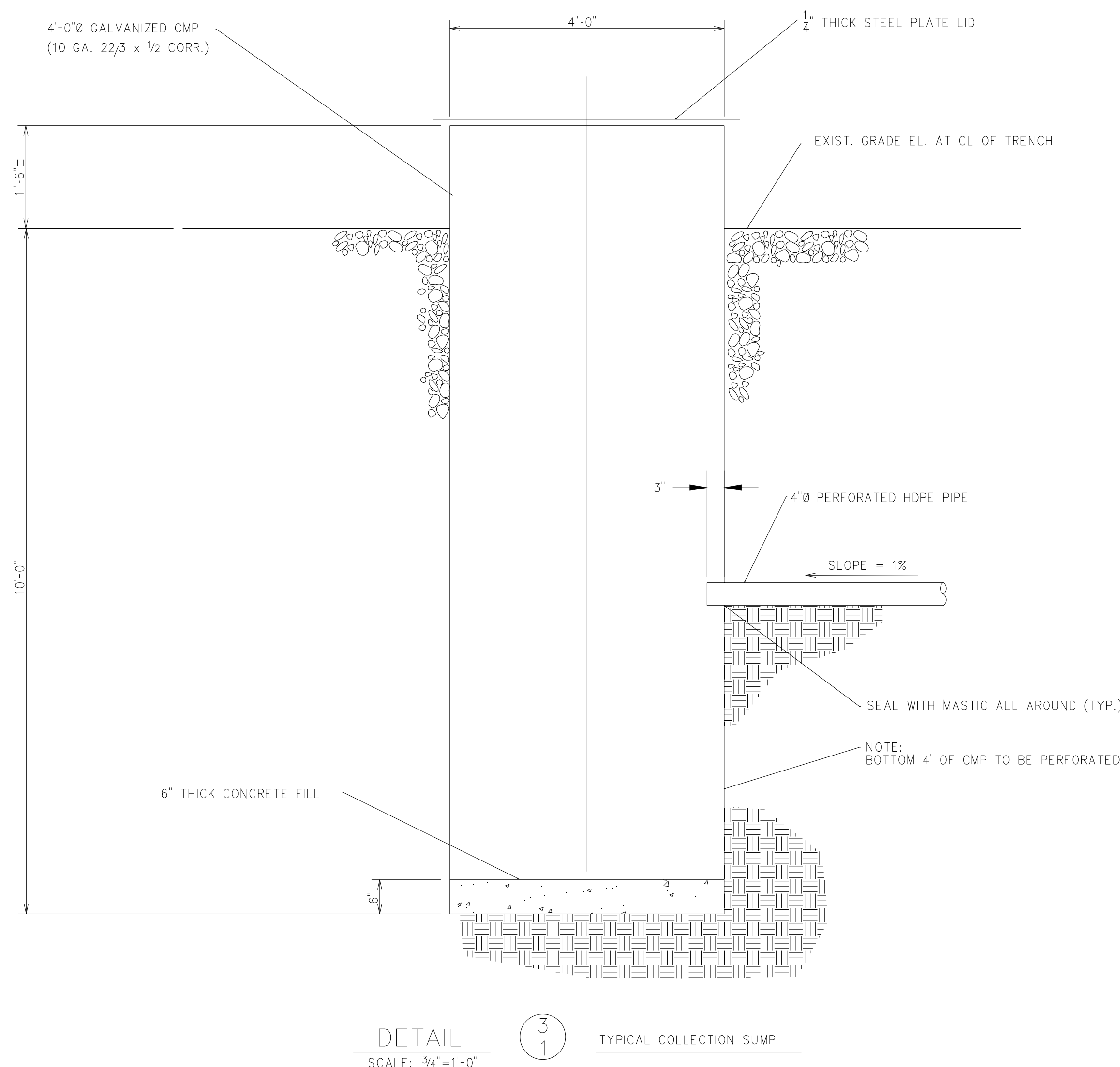
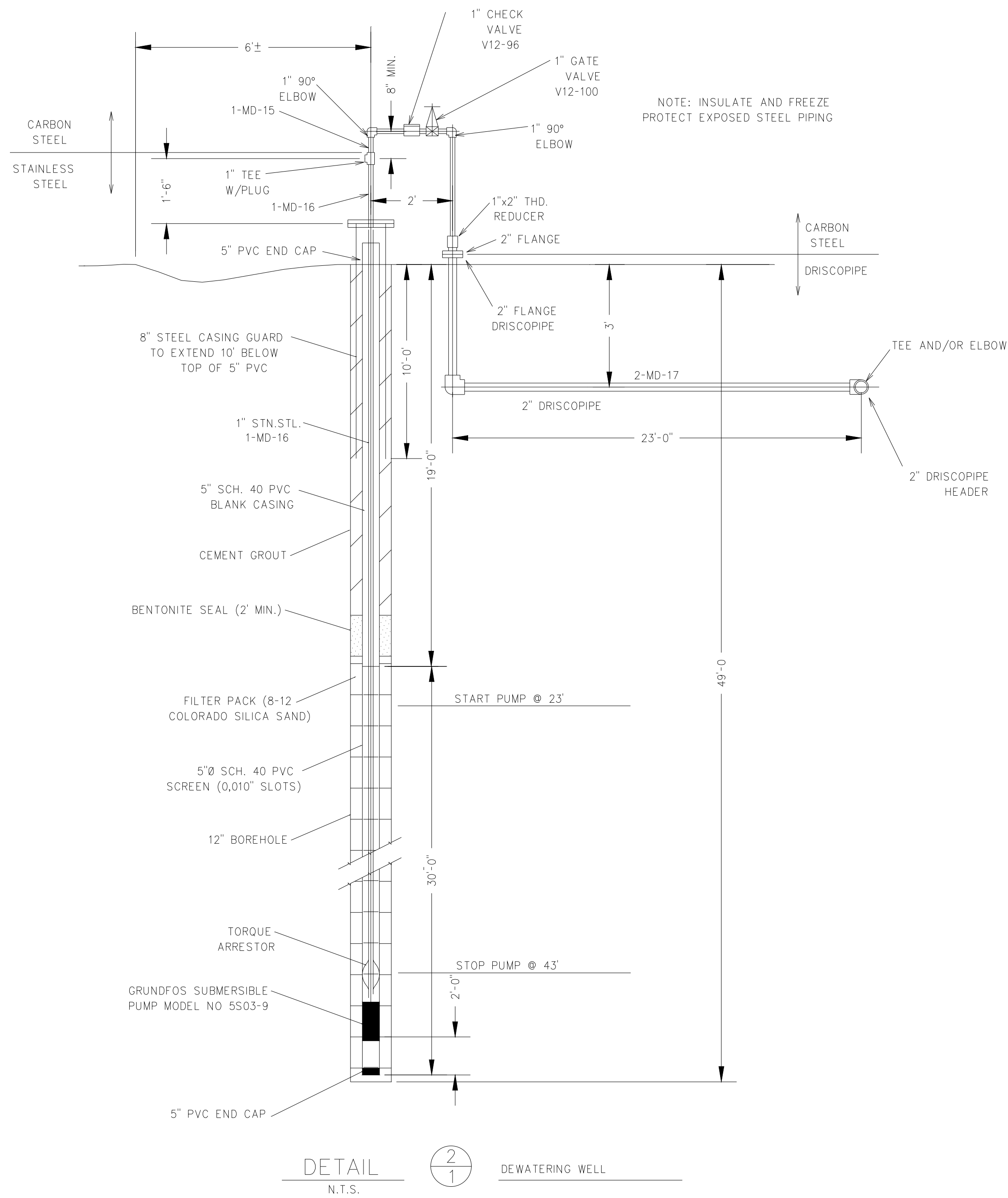
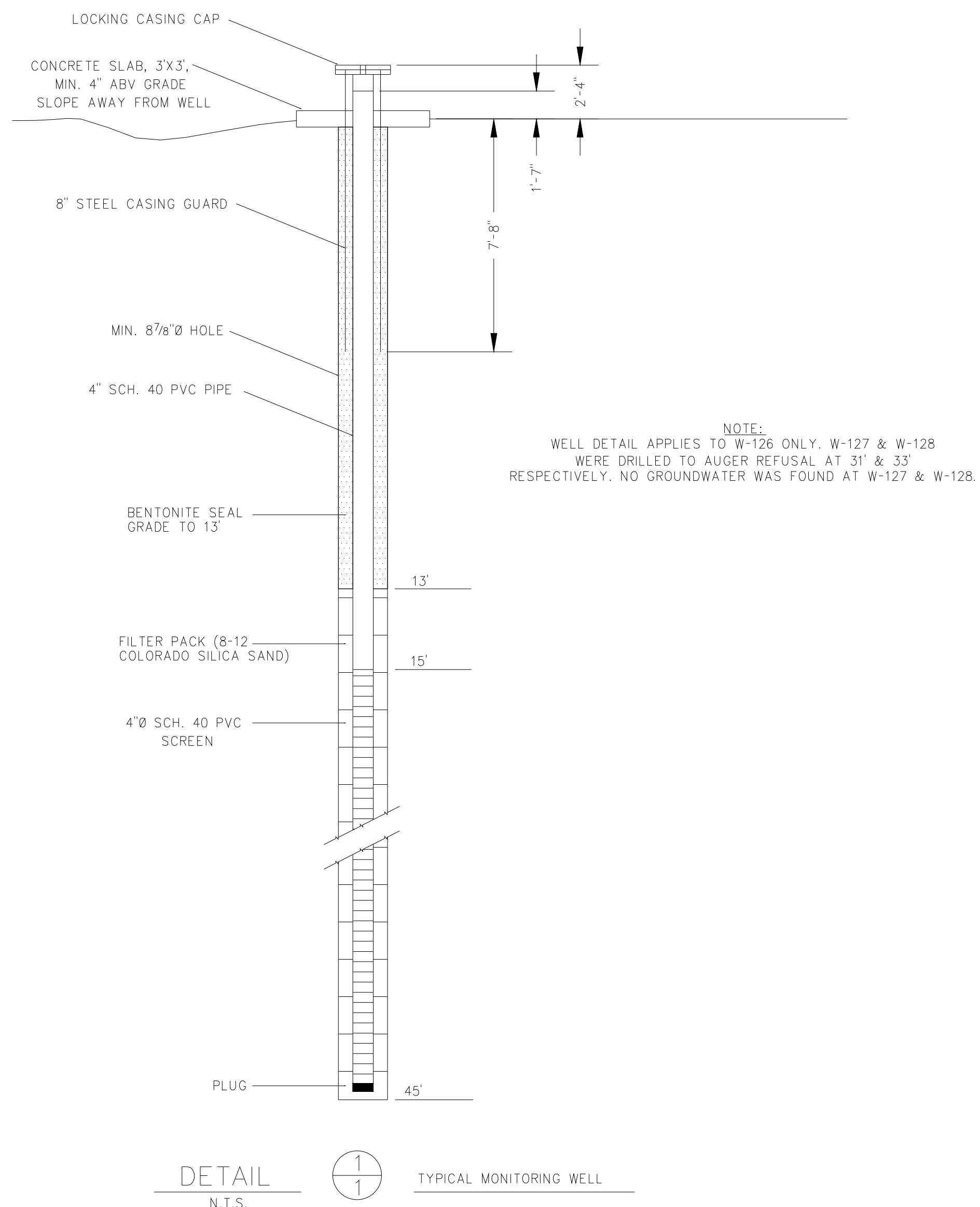
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CHKD	TRH	REVISED	W A		G-114438		
EXTD	M. SANTOS	62-9072		SHEET 4 OF 4			

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NO.	DATE	REVISION	DWN	CHD	EXD	RWD	APVD	W.A.
CHOLLA S.E.S. COMMON HUNT SEEP SEEPAGE INTERCEPT SYSTEM DETAILS								
ARIZONA PUBLIC SERVICE COMPANY								
SCALE AS NOTED DATE 8-30-95								
DWN	SMITHERS	APVD	ENGINEERING SUPERVISOR			DRAWING NO.		
CHD		RWD	W.A.			G-143718		
EXD			30-9147			SHEET 2 OF 2		

AAAAFPL.DWG

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ATTACHMENT B - PHOTOGRAPH LOG

Photograph Log



Photograph 1

Overview of
Geronimo A, B,
and C
compound



Photograph 2

Geronimo A
and B
wellheads and
control panels



Photograph 3

Geronimo C
sump and
control panel



Photograph Log

wood.

Photograph 4

Geronimo B
wellhead



Photograph Log



Photograph 5

Geronimo
wellhead
detail – note
PVC cap on
access port



Photograph Log

wood.

Photograph 6

Geronimo A
control panel



Photograph 7

Geronimo B
control panel



Photograph Log

Photograph 8

Geronimo D
compound



Photograph 9

Geronimo D
control panel



Photograph Log

wood.

Photograph 10

Hunt A control panel and sump



Photograph Log

wood.

Photograph 11

Hunt A control panel



Photograph Log



Photograph 12

Hunt A sump –
note water level
below level
controls



Photograph Log



Photograph 13

Hunt B
compound



Photograph 14

Hunt B control
panel



Photograph Log

wood.

Photograph 15

Hunt B wellhead
– note lack of
access port



Photograph Log



Photograph 16

Cumulative flow meter for Geronimo and Hunt discharge lines



Photograph 17

Flow meter placement for Hunt discharge pipeline.



Photograph Log



Photograph 18

Alternate view of
Hunt flow meter

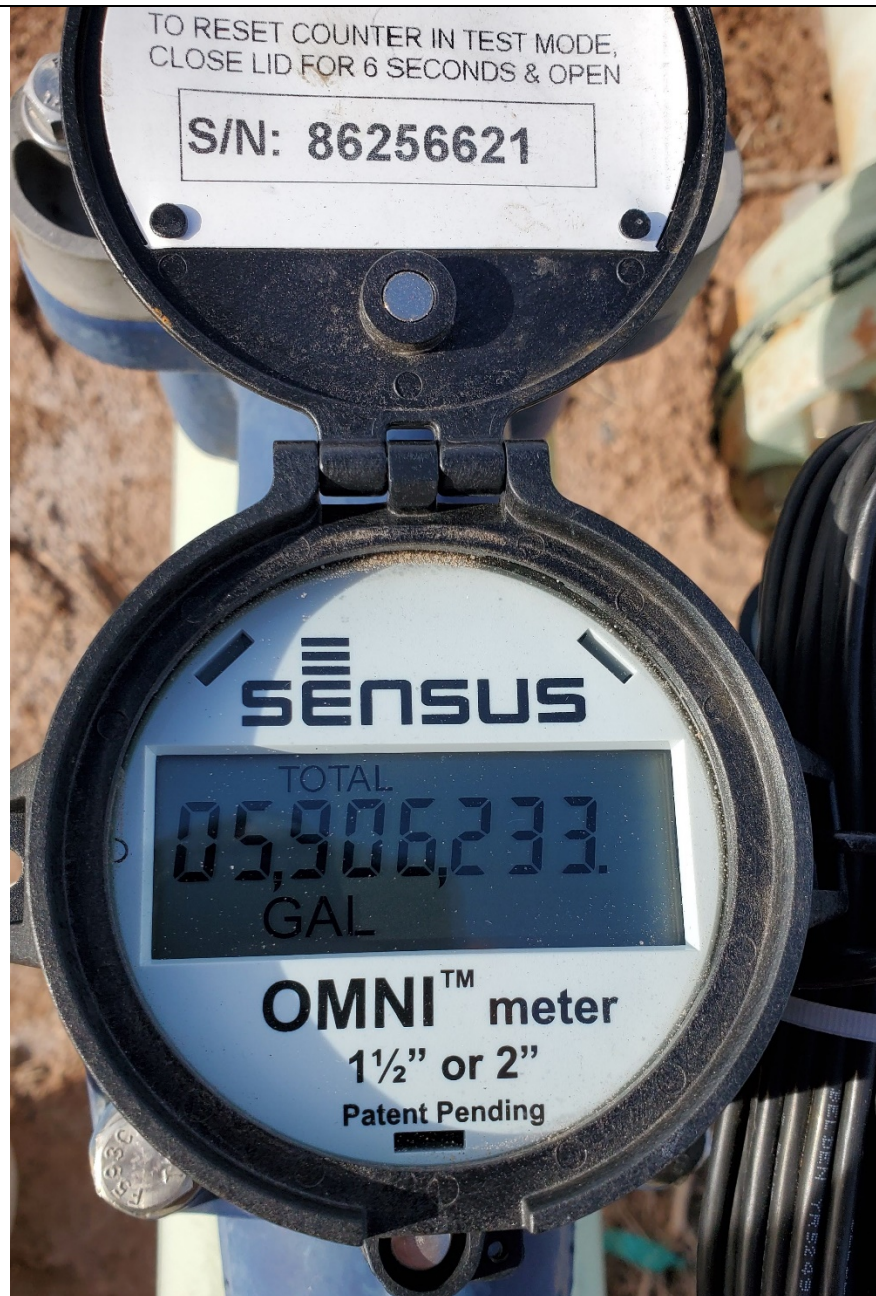


Photograph Log

wood.

Photograph 19

Geronimo flow meter on March 5, 2020

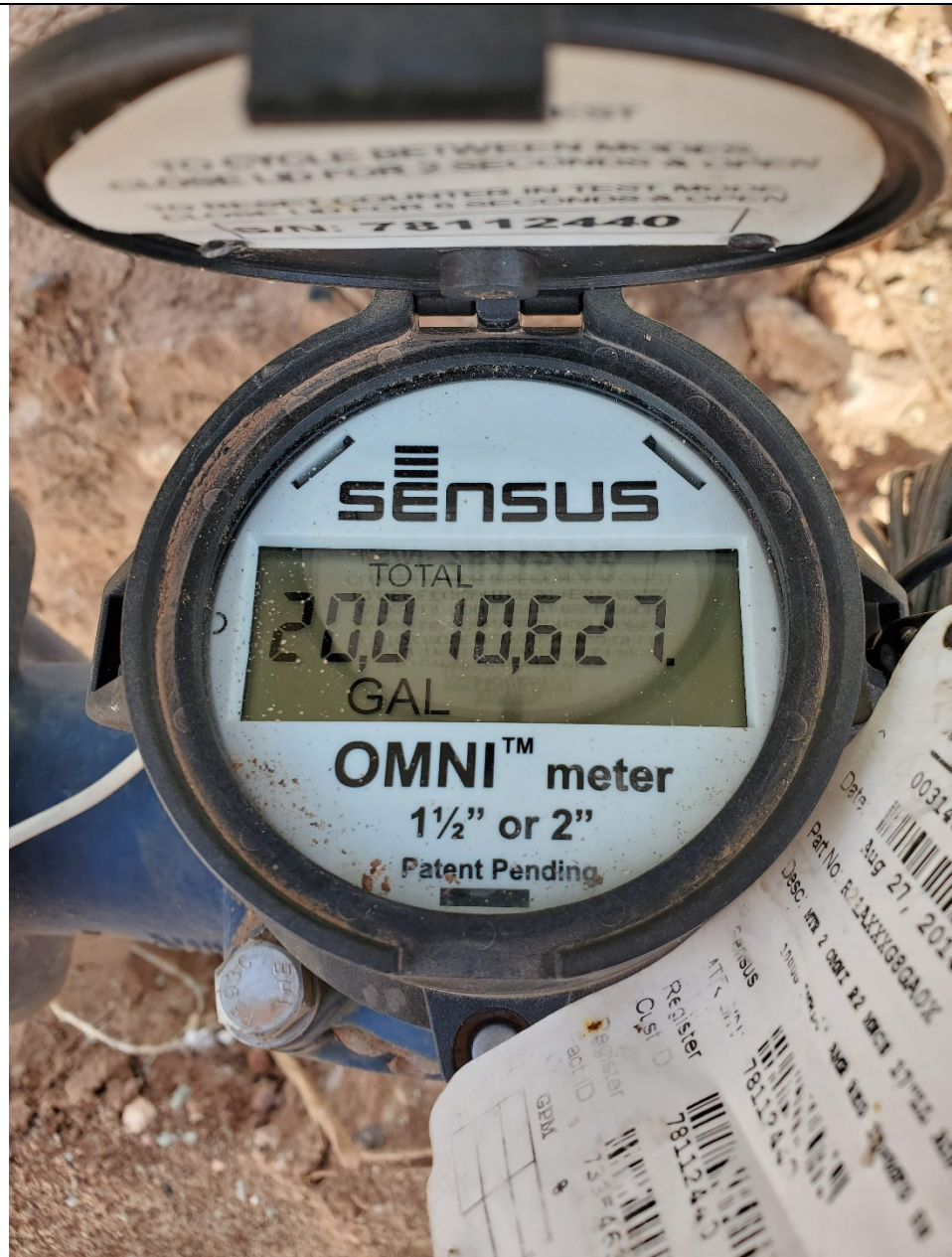


Photograph Log

wood.

Photograph 20

Hunt flow meter
on March 5, 2020



Photograph Log

wood.

Photograph 21

Inoperable Omega
flow meter at
Geronimo seepage
intercept system



Photograph Log

wood.

Photograph 22

Alternate view
of Omega flow
meter



ATTACHMENT C - LABORATORY ANALYTICAL REPORT

ANALYTICAL REPORT

Eurofins TestAmerica, Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

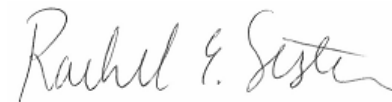
Laboratory Job ID: 550-139091-1

Client Project/Site: FAP Aquaifer Test

For:

Wood E&I Solutions Inc
4600 E. Washington St
6th Floor
Phoenix, Arizona 85034

Attn: Dane Andersen



Authorized for release by:
4/2/2020 5:22:35 PM

Rachel Sester, Project Manager I
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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Sample Summary	5
Detection Summary	6
Client Sample Results	10
QC Sample Results	18
QC Association Summary	21
Lab Chronicle	25
Certification Summary	32
Method Summary	33
Chain of Custody	34
Receipt Checklists	36



Definitions/Glossary

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquifer Test

Job ID: 550-139091-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D1	Sample required dilution due to matrix.

Metals

Qualifier	Qualifier Description
B7	Target analyte detected in method blank at or above method reporting limit. Concentration found in the sample was 10 times above the concentration found in the blank.
D1	Sample required dilution due to matrix.
D2	Sample required dilution due to high concentration of analyte.
M1	Matrix spike recovery was high, the associated blank spike recovery was acceptable.
M2	Matrix spike recovery was low, the associated blank spike recovery was acceptable.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquifer Test

Job ID: 550-139091-1

Job ID: 550-139091-1

Laboratory: Eurofins TestAmerica, Phoenix

Narrative

Job Narrative 550-139091-1

Comments

No additional comments.

Receipt

The samples were received on 3/9/2020 10:12 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.3° C and 2.2° C.

HPLC/IC

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals

Method 6010C: The following samples were diluted due to the nature of the sample matrix (internal standard failures undiluted and at lower dilutions): GERONIMO-C-03052020 (550-139091-1), GERONIMO-B-03052020 (550-139091-2), HUNT-B-03052020 (550-139091-3), MW66A-AQTEST-03052020-1 (550-139091-4), MW66A-AQTEST-03052020-2 (550-139091-5), MW66A-AQTEST-03052020-3 (550-139091-6), MW66A-AQTEST-03052020-4 (550-139091-7), MW66A-AQTEST-03052020-5 (550-139091-8), MW66A-AQTEST-03062020-6 (550-139091-9), MW66A-AQTEST-03062020-7 (550-139091-10), MW66A-AQTEST-03062020-8 (550-139091-11), MW66A-AQTEST-03062020-9 (550-139091-12), MW66A-AQTEST-03062020-10 (550-139091-13), MW66A-AQTEST-03062020-11 (550-139091-14), MW66A-AQTEST-03062020-12 (550-139091-15), MW66A-AQTEST-03062020-13 (550-139091-16), MW66A-AQTEST-03062020-14 (550-139091-17), HUNTA-03072020 (550-139091-18), HUNTC-03072020 (550-139091-19), MW66A-AQTEST-03052020-13 (550-139091-20), (550-139091-B-3-C MS ^10), (550-139091-B-3-D MSD ^10) and (550-139091-B-3-E PDS ^10). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquifer Test

Job ID: 550-139091-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
550-139091-1	GERONIMO-C-03052020	Water	03/05/20 09:25	03/09/20 10:12	
550-139091-2	GERONIMO-B-03052020	Water	03/05/20 09:50	03/09/20 10:12	
550-139091-3	HUNT-B-03052020	Water	03/05/20 10:30	03/09/20 10:12	
550-139091-4	MW66A-AQTEST-03052020-1	Water	03/05/20 11:50	03/09/20 10:12	
550-139091-5	MW66A-AQTEST-03052020-2	Water	03/05/20 13:50	03/09/20 10:12	
550-139091-6	MW66A-AQTEST-03052020-3	Water	03/05/20 19:40	03/09/20 10:12	
550-139091-7	MW66A-AQTEST-03052020-4	Water	03/05/20 21:40	03/09/20 10:12	
550-139091-8	MW66A-AQTEST-03052020-5	Water	03/05/20 23:40	03/09/20 10:12	
550-139091-9	MW66A-AQTEST-03062020-6	Water	03/06/20 01:40	03/09/20 10:12	
550-139091-10	MW66A-AQTEST-03062020-7	Water	03/06/20 03:40	03/09/20 10:12	
550-139091-11	MW66A-AQTEST-03062020-8	Water	03/06/20 05:40	03/09/20 10:12	
550-139091-12	MW66A-AQTEST-03062020-9	Water	03/06/20 07:40	03/09/20 10:12	
550-139091-13	MW66A-AQTEST-03062020-10	Water	03/06/20 09:40	03/09/20 10:12	
550-139091-14	MW66A-AQTEST-03062020-11	Water	03/06/20 11:40	03/09/20 10:12	
550-139091-15	MW66A-AQTEST-03062020-12	Water	03/06/20 13:40	03/09/20 10:12	
550-139091-16	MW66A-AQTEST-03062020-13	Water	03/06/20 15:40	03/09/20 10:12	
550-139091-17	MW66A-AQTEST-03062020-14	Water	03/06/20 17:30	03/09/20 10:12	
550-139091-18	HUNTA-03072020	Water	03/07/20 08:30	03/09/20 10:12	
550-139091-19	HUNTC-03072020	Water	03/07/20 08:40	03/09/20 10:12	
550-139091-20	MW66A-AQTEST-03052020-13	Water	03/05/20 15:50	03/09/20 10:12	

Detection Summary

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Client Sample ID: GERONIMO-C-03052020

Lab Sample ID: 550-139091-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	6.7	D1	2.0		mg/L	5		300.0	Total/NA
Boron	67	D1	0.50		mg/L	10		6010C	Total/NA
Iron	0.11		0.10		mg/L	1		6010C	Total/NA
Lithium	1.2	M1	0.20		mg/L	1		6010C	Total/NA
Arsenic	10	D1	10		ug/L	10		6020B	Total/NA
Molybdenum	25	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	180	D1 M2	25		ug/L	10		6020B	Total/NA

Client Sample ID: GERONIMO-B-03052020

Lab Sample ID: 550-139091-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.6	D1	0.80		mg/L	2		300.0	Total/NA
Boron	20	D1	0.50		mg/L	10		6010C	Total/NA
Iron	34		0.10		mg/L	1		6010C	Total/NA
Lithium	0.71		0.20		mg/L	1		6010C	Total/NA
Arsenic	24	D1	10		ug/L	10		6020B	Total/NA
Chromium	450	D1	20		ug/L	10		6020B	Total/NA
Molybdenum	700	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	920	D2	25		ug/L	10		6020B	Total/NA

Client Sample ID: HUNT-B-03052020

Lab Sample ID: 550-139091-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	3.2	D1	0.80		mg/L	2		300.0	Total/NA
Boron	31	D1 M3	0.50		mg/L	10		6010C	Total/NA
Lithium	0.72		0.20		mg/L	1		6010C	Total/NA
Molybdenum	410	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	890	D1	25		ug/L	10		6020B	Total/NA

Client Sample ID: MW66A-AQTEST-03052020-1

Lab Sample ID: 550-139091-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Boron	1.8	D1	0.50		mg/L	10		6010C	Total/NA
Iron	50		0.10		mg/L	1		6010C	Total/NA
Lithium	0.75		0.20		mg/L	1		6010C	Total/NA
Arsenic	16	D1	10		ug/L	10		6020B	Total/NA
Chromium	44	D1	20		ug/L	10		6020B	Total/NA
Cobalt	20	D1	5.0		ug/L	10		6020B	Total/NA
Molybdenum	13	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	4900	D2	25		ug/L	10		6020B	Total/NA

Client Sample ID: MW66A-AQTEST-03052020-2

Lab Sample ID: 550-139091-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Boron	1.8	D1	0.50		mg/L	10		6010C	Total/NA
Iron	25		0.10		mg/L	1		6010C	Total/NA
Lithium	0.73		0.20		mg/L	1		6010C	Total/NA
Arsenic	10	D1	10		ug/L	10		6020B	Total/NA
Chromium	22	D1	20		ug/L	10		6020B	Total/NA
Cobalt	9.4	D1	5.0		ug/L	10		6020B	Total/NA
Molybdenum	14	B7 D1	5.0		ug/L	10		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Client Sample ID: MW66A-AQTEST-03052020-2 (Continued)

Lab Sample ID: 550-139091-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	4100	D2	25		ug/L	10		6020B	Total/NA

Client Sample ID: MW66A-AQTEST-03052020-3

Lab Sample ID: 550-139091-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Boron	1.7	D1	0.50		mg/L	10		6010C	Total/NA
Iron	6.6		0.10		mg/L	1		6010C	Total/NA
Lithium	0.68		0.20		mg/L	1		6010C	Total/NA
Molybdenum	14	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	3800	D2	25		ug/L	10		6020B	Total/NA

Client Sample ID: MW66A-AQTEST-03052020-4

Lab Sample ID: 550-139091-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Boron	1.7	D1	0.50		mg/L	10		6010C	Total/NA
Iron	8.0		0.10		mg/L	1		6010C	Total/NA
Lithium	0.74		0.20		mg/L	1		6010C	Total/NA
Molybdenum	14	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	3800	D2	25		ug/L	10		6020B	Total/NA

Client Sample ID: MW66A-AQTEST-03052020-5

Lab Sample ID: 550-139091-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Boron	1.7	D1	0.50		mg/L	10		6010C	Total/NA
Iron	4.0		0.10		mg/L	1		6010C	Total/NA
Lithium	0.72		0.20		mg/L	1		6010C	Total/NA
Molybdenum	14	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	3600	D2	25		ug/L	10		6020B	Total/NA

Client Sample ID: MW66A-AQTEST-03062020-6

Lab Sample ID: 550-139091-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Boron	1.6	D1	1.0		mg/L	20		6010C	Total/NA
Iron	4.6		0.10		mg/L	1		6010C	Total/NA
Lithium	0.69		0.20		mg/L	1		6010C	Total/NA
Molybdenum	15	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	3800	D2	25		ug/L	10		6020B	Total/NA

Client Sample ID: MW66A-AQTEST-03062020-7

Lab Sample ID: 550-139091-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Boron	1.7	D1	0.50		mg/L	10		6010C	Total/NA
Iron	5.4		0.10		mg/L	1		6010C	Total/NA
Lithium	0.71		0.20		mg/L	1		6010C	Total/NA
Molybdenum	14	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	3700	D2	25		ug/L	10		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Client Sample ID: MW66A-AQTEST-03062020-8

Lab Sample ID: 550-139091-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Boron	1.7	D1	0.50		mg/L	10		6010C	Total/NA
Iron	8.7		0.10		mg/L	1		6010C	Total/NA
Lithium	0.71		0.20		mg/L	1		6010C	Total/NA
Molybdenum	14	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	3600	D2	25		ug/L	10		6020B	Total/NA

Client Sample ID: MW66A-AQTEST-03062020-9

Lab Sample ID: 550-139091-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Boron	1.7	D1	0.50		mg/L	10		6010C	Total/NA
Iron	12	D1	1.0		mg/L	10		6010C	Total/NA
Cobalt	5.5	D1	5.0		ug/L	10		6020B	Total/NA
Molybdenum	14	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	3700	D2	25		ug/L	10		6020B	Total/NA

Client Sample ID: MW66A-AQTEST-03062020-10

Lab Sample ID: 550-139091-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Boron	1.7	D1	0.50		mg/L	10		6010C	Total/NA
Iron	11	D1	1.0		mg/L	10		6010C	Total/NA
Cobalt	5.3	D1	5.0		ug/L	10		6020B	Total/NA
Molybdenum	14	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	4000	D2	25		ug/L	10		6020B	Total/NA

Client Sample ID: MW66A-AQTEST-03062020-11

Lab Sample ID: 550-139091-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Boron	1.7	D1	1.0		mg/L	20		6010C	Total/NA
Iron	10	D1	2.0		mg/L	20		6010C	Total/NA
Cobalt	5.7	D1	5.0		ug/L	10		6020B	Total/NA
Molybdenum	14	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	3900	D2	25		ug/L	10		6020B	Total/NA

Client Sample ID: MW66A-AQTEST-03062020-12

Lab Sample ID: 550-139091-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Boron	1.7	D1	1.0		mg/L	20		6010C	Total/NA
Iron	11	D1	2.0		mg/L	20		6010C	Total/NA
Cobalt	5.1	D1	5.0		ug/L	10		6020B	Total/NA
Molybdenum	15	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	4000	D2	25		ug/L	10		6020B	Total/NA

Client Sample ID: MW66A-AQTEST-03062020-13

Lab Sample ID: 550-139091-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Boron	1.7	D1	1.0		mg/L	20		6010C	Total/NA
Iron	6.5	D1	2.0		mg/L	20		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Client Sample ID: MW66A-AQTEST-03062020-13 (Continued)

Lab Sample ID: 550-139091-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Molybdenum	14	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	3800	D2	25		ug/L	10		6020B	Total/NA

Client Sample ID: MW66A-AQTEST-03062020-14

Lab Sample ID: 550-139091-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Boron	1.7	D1	1.0		mg/L	20		6010C	Total/NA
Iron	10	D1	2.0		mg/L	20		6010C	Total/NA
Cobalt	5.7	D1	5.0		ug/L	10		6020B	Total/NA
Molybdenum	14	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	4000	D2	25		ug/L	10		6020B	Total/NA

Client Sample ID: HUNTA-03072020

Lab Sample ID: 550-139091-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.5	D1	0.80		mg/L	2		300.0	Total/NA
Boron	31	D1	0.50		mg/L	10		6010C	Total/NA
Molybdenum	220	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	230	D1	25		ug/L	10		6020B	Total/NA

Client Sample ID: HUNTC-03072020

Lab Sample ID: 550-139091-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.5	D1	0.80		mg/L	2		300.0	Total/NA
Boron	31	D1	1.0		mg/L	20		6010C	Total/NA
Molybdenum	230	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	230	D1	25		ug/L	10		6020B	Total/NA

Client Sample ID: MW66A-AQTEST-03052020-13

Lab Sample ID: 550-139091-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.1	D1	0.80		mg/L	2		300.0	Total/NA
Boron	1.6	D1	1.0		mg/L	20		6010C	Total/NA
Iron	14	D1	2.0		mg/L	20		6010C	Total/NA
Cobalt	6.6	D1	5.0		ug/L	10		6020B	Total/NA
Molybdenum	14	B7 D1	5.0		ug/L	10		6020B	Total/NA
Manganese	4100	D2	25		ug/L	10		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquifer Test

Job ID: 550-139091-1

Client Sample ID: GERONIMO-C-03052020

Lab Sample ID: 550-139091-1

Date Collected: 03/05/20 09:25

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	6.7	D1	2.0		mg/L			03/20/20 00:00	5

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	67	D1	0.50		mg/L		03/26/20 10:53	04/02/20 10:01	10
Iron	0.11		0.10		mg/L		03/12/20 05:01	03/24/20 10:57	1
Lithium	1.2	M1	0.20		mg/L		03/12/20 05:01	03/24/20 10:57	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	10	D1	10		ug/L		03/12/20 04:38	03/22/20 13:54	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:11	10
Cobalt	ND	D1	5.0		ug/L		03/12/20 04:38	03/22/20 13:54	10
Molybdenum	25	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 13:54	10
Manganese	180	D1 M2	25		ug/L		03/12/20 04:38	03/22/20 16:11	10

Client Sample ID: GERONIMO-B-03052020

Lab Sample ID: 550-139091-2

Date Collected: 03/05/20 09:50

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.6	D1	0.80		mg/L			03/20/20 00:18	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	20	D1	0.50		mg/L		03/26/20 10:53	04/02/20 10:05	10
Iron	34		0.10		mg/L		03/12/20 05:01	03/24/20 11:17	1
Lithium	0.71		0.20		mg/L		03/12/20 05:01	03/24/20 11:17	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	24	D1	10		ug/L		03/12/20 04:38	03/22/20 14:00	10
Chromium	450	D1	20		ug/L		03/12/20 04:38	03/22/20 16:17	10
Cobalt	ND	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:00	10
Molybdenum	700	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:00	10
Manganese	920	D2	25		ug/L		03/12/20 04:38	03/22/20 16:17	10

Client Sample ID: HUNT-B-03052020

Lab Sample ID: 550-139091-3

Date Collected: 03/05/20 10:30

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	3.2	D1	0.80		mg/L			03/20/20 00:37	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	31	D1 M3	0.50		mg/L		03/26/20 10:53	04/02/20 09:41	10
Iron	ND		0.10		mg/L		03/12/20 05:01	03/24/20 11:21	1
Lithium	0.72		0.20		mg/L		03/12/20 05:01	03/24/20 11:21	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquifer Test

Job ID: 550-139091-1

Client Sample ID: HUNT-B-03052020

Lab Sample ID: 550-139091-3

Date Collected: 03/05/20 10:30

Matrix: Water

Date Received: 03/09/20 10:12

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	10		ug/L		03/12/20 04:38	03/22/20 14:02	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:19	10
Cobalt	ND	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:02	10
Molybdenum	410	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:02	10
Manganese	890	D1	25		ug/L		03/12/20 04:38	03/22/20 16:19	10

Client Sample ID: MW66A-AQTEST-03052020-1

Lab Sample ID: 550-139091-4

Date Collected: 03/05/20 11:50

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.1	D1	0.80		mg/L			03/20/20 00:55	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.8	D1	0.50		mg/L		03/26/20 10:53	04/02/20 10:09	10
Iron	50		0.10		mg/L		03/12/20 05:01	03/24/20 11:25	1
Lithium	0.75		0.20		mg/L		03/12/20 05:01	03/24/20 11:25	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	16	D1	10		ug/L		03/12/20 04:38	03/22/20 14:04	10
Chromium	44	D1	20		ug/L		03/12/20 04:38	03/22/20 16:22	10
Cobalt	20	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:04	10
Molybdenum	13	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:04	10
Manganese	4900	D2	25		ug/L		03/12/20 04:38	03/22/20 16:22	10

Client Sample ID: MW66A-AQTEST-03052020-2

Lab Sample ID: 550-139091-5

Date Collected: 03/05/20 13:50

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.1	D1	0.80		mg/L			03/20/20 01:13	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.8	D1	0.50		mg/L		03/26/20 10:53	04/02/20 10:13	10
Iron	25		0.10		mg/L		03/12/20 05:01	03/24/20 11:29	1
Lithium	0.73		0.20		mg/L		03/12/20 05:01	03/24/20 11:29	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	10	D1	10		ug/L		03/12/20 04:38	03/22/20 14:06	10
Chromium	22	D1	20		ug/L		03/12/20 04:38	03/22/20 16:24	10
Cobalt	9.4	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:06	10
Molybdenum	14	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:06	10
Manganese	4100	D2	25		ug/L		03/12/20 04:38	03/22/20 16:24	10

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquifer Test

Job ID: 550-139091-1

Client Sample ID: MW66A-AQTEST-03052020-3

Lab Sample ID: 550-139091-6

Date Collected: 03/05/20 19:40

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.1	D1	0.80		mg/L			03/20/20 01:32	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.7	D1	0.50		mg/L		03/26/20 10:53	04/02/20 10:17	10
Iron	6.6		0.10		mg/L		03/12/20 05:01	03/24/20 11:33	1
Lithium	0.68		0.20		mg/L		03/12/20 05:01	03/24/20 11:33	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	10		ug/L		03/12/20 04:38	03/22/20 14:08	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:26	10
Cobalt	ND	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:08	10
Molybdenum	14	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:08	10
Manganese	3800	D2	25		ug/L		03/12/20 04:38	03/22/20 16:26	10

Client Sample ID: MW66A-AQTEST-03052020-4

Lab Sample ID: 550-139091-7

Date Collected: 03/05/20 21:40

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.1	D1	0.80		mg/L			03/20/20 01:50	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.7	D1	0.50		mg/L		03/26/20 10:53	04/02/20 10:21	10
Iron	8.0		0.10		mg/L		03/12/20 05:01	03/24/20 11:37	1
Lithium	0.74		0.20		mg/L		03/12/20 05:01	03/24/20 11:37	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	10		ug/L		03/12/20 04:38	03/22/20 14:11	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:28	10
Cobalt	ND	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:11	10
Molybdenum	14	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:11	10
Manganese	3800	D2	25		ug/L		03/12/20 04:38	03/22/20 16:28	10

Client Sample ID: MW66A-AQTEST-03052020-5

Lab Sample ID: 550-139091-8

Date Collected: 03/05/20 23:40

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.1	D1	0.80		mg/L			03/20/20 02:09	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.7	D1	0.50		mg/L		03/26/20 10:53	04/02/20 10:25	10
Iron	4.0		0.10		mg/L		03/12/20 05:01	03/24/20 11:41	1
Lithium	0.72		0.20		mg/L		03/12/20 05:01	03/24/20 11:41	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquifer Test

Job ID: 550-139091-1

Client Sample ID: MW66A-AQTEST-03052020-5

Lab Sample ID: 550-139091-8

Date Collected: 03/05/20 23:40

Matrix: Water

Date Received: 03/09/20 10:12

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	10		ug/L		03/12/20 04:38	03/22/20 14:13	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:30	10
Cobalt	ND	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:13	10
Molybdenum	14	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:13	10
Manganese	3600	D2	25		ug/L		03/12/20 04:38	03/22/20 16:30	10

Client Sample ID: MW66A-AQTEST-03062020-6

Lab Sample ID: 550-139091-9

Date Collected: 03/06/20 01:40

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.1	D1	0.80		mg/L			03/20/20 02:27	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.6	D1	1.0		mg/L		03/26/20 10:53	04/02/20 10:29	20
Iron	4.6		0.10		mg/L		03/12/20 05:01	03/24/20 11:45	1
Lithium	0.69		0.20		mg/L		03/12/20 05:01	03/24/20 11:45	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	10		ug/L		03/12/20 04:38	03/22/20 14:15	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:32	10
Cobalt	ND	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:15	10
Molybdenum	15	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:15	10
Manganese	3800	D2	25		ug/L		03/12/20 04:38	03/22/20 16:32	10

Client Sample ID: MW66A-AQTEST-03062020-7

Lab Sample ID: 550-139091-10

Date Collected: 03/06/20 03:40

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.1	D1	0.80		mg/L			03/20/20 02:46	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.7	D1	0.50		mg/L		03/26/20 10:53	04/02/20 10:33	10
Iron	5.4		0.10		mg/L		03/12/20 05:01	03/24/20 11:49	1
Lithium	0.71		0.20		mg/L		03/12/20 05:01	03/24/20 11:49	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	10		ug/L		03/12/20 04:38	03/22/20 14:17	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:34	10
Cobalt	ND	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:17	10
Molybdenum	14	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:17	10
Manganese	3700	D2	25		ug/L		03/12/20 04:38	03/22/20 16:34	10

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquifer Test

Job ID: 550-139091-1

Client Sample ID: MW66A-AQTEST-03062020-8

Lab Sample ID: 550-139091-11

Date Collected: 03/06/20 05:40

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.1	D1	0.80		mg/L			03/20/20 03:41	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.7	D1	0.50		mg/L		03/26/20 10:53	04/02/20 10:37	10
Iron	8.7		0.10		mg/L		03/12/20 05:01	03/24/20 11:53	1
Lithium	0.71		0.20		mg/L		03/12/20 05:01	03/24/20 11:53	1

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	10		ug/L		03/12/20 04:38	03/22/20 14:26	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:40	10
Cobalt	ND	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:26	10
Molybdenum	14	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:26	10
Manganese	3600	D2	25		ug/L		03/12/20 04:38	03/22/20 16:40	10

Client Sample ID: MW66A-AQTEST-03062020-9

Lab Sample ID: 550-139091-12

Date Collected: 03/06/20 07:40

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.1	D1	0.80		mg/L			03/20/20 03:59	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.7	D1	0.50		mg/L		03/26/20 10:53	04/02/20 10:57	10
Iron	12	D1	1.0		mg/L		03/26/20 10:53	04/02/20 10:57	10
Lithium	ND	D1	2.0		mg/L		03/26/20 10:53	04/02/20 10:57	10

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	10		ug/L		03/12/20 04:38	03/22/20 14:28	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:42	10
Cobalt	5.5	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:28	10
Molybdenum	14	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:28	10
Manganese	3700	D2	25		ug/L		03/12/20 04:38	03/22/20 16:42	10

Client Sample ID: MW66A-AQTEST-03062020-10

Lab Sample ID: 550-139091-13

Date Collected: 03/06/20 09:40

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.1	D1	0.80		mg/L			03/20/20 04:18	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.7	D1	0.50		mg/L		03/26/20 10:53	04/02/20 11:01	10
Iron	11	D1	1.0		mg/L		03/26/20 10:53	04/02/20 11:01	10
Lithium	ND	D1	2.0		mg/L		03/26/20 10:53	04/02/20 11:01	10

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquifer Test

Job ID: 550-139091-1

Client Sample ID: MW66A-AQTEST-03062020-10

Lab Sample ID: 550-139091-13

Date Collected: 03/06/20 09:40

Matrix: Water

Date Received: 03/09/20 10:12

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	10		ug/L		03/12/20 04:38	03/22/20 14:31	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:44	10
Cobalt	5.3	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:31	10
Molybdenum	14	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:31	10
Manganese	4000	D2	25		ug/L		03/12/20 04:38	03/22/20 16:44	10

Client Sample ID: MW66A-AQTEST-03062020-11

Lab Sample ID: 550-139091-14

Date Collected: 03/06/20 11:40

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.1	D1	0.80		mg/L			03/20/20 04:36	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.7	D1	1.0		mg/L		03/26/20 10:53	04/02/20 11:05	20
Iron	10	D1	2.0		mg/L		03/26/20 10:53	04/02/20 11:05	20
Lithium	ND	D1	4.0		mg/L		03/26/20 10:53	04/02/20 11:05	20

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	10		ug/L		03/12/20 04:38	03/22/20 14:33	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:46	10
Cobalt	5.7	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:33	10
Molybdenum	14	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:33	10
Manganese	3900	D2	25		ug/L		03/12/20 04:38	03/22/20 16:46	10

Client Sample ID: MW66A-AQTEST-03062020-12

Lab Sample ID: 550-139091-15

Date Collected: 03/06/20 13:40

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.1	D1	0.80		mg/L			03/20/20 04:54	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.7	D1	1.0		mg/L		03/26/20 10:53	04/02/20 11:09	20
Iron	11	D1	2.0		mg/L		03/26/20 10:53	04/02/20 11:09	20
Lithium	ND	D1	4.0		mg/L		03/26/20 10:53	04/02/20 11:09	20

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	10		ug/L		03/12/20 04:38	03/22/20 14:35	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:48	10
Cobalt	5.1	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:35	10
Molybdenum	15	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:35	10
Manganese	4000	D2	25		ug/L		03/12/20 04:38	03/22/20 16:48	10

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Client Sample ID: MW66A-AQTEST-03062020-13

Lab Sample ID: 550-139091-16

Date Collected: 03/06/20 15:40

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.1	D1	0.80		mg/L			03/20/20 05:13	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.7	D1	1.0		mg/L		03/26/20 10:53	04/02/20 11:13	20
Iron	6.5	D1	2.0		mg/L		03/26/20 10:53	04/02/20 11:13	20
Lithium	ND	D1	4.0		mg/L		03/26/20 10:53	04/02/20 11:13	20

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	10		ug/L		03/12/20 04:38	03/22/20 14:37	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:50	10
Cobalt	ND	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:37	10
Molybdenum	14	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:37	10
Manganese	3800	D2	25		ug/L		03/12/20 04:38	03/22/20 16:50	10

Client Sample ID: MW66A-AQTEST-03062020-14

Lab Sample ID: 550-139091-17

Date Collected: 03/06/20 17:30

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.1	D1	0.80		mg/L			03/20/20 05:31	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.7	D1	1.0		mg/L		03/26/20 10:53	04/02/20 11:17	20
Iron	10	D1	2.0		mg/L		03/26/20 10:53	04/02/20 11:17	20
Lithium	ND	D1	4.0		mg/L		03/26/20 10:53	04/02/20 11:17	20

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	10		ug/L		03/12/20 04:38	03/22/20 14:39	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:53	10
Cobalt	5.7	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:39	10
Molybdenum	14	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:39	10
Manganese	4000	D2	25		ug/L		03/12/20 04:38	03/22/20 16:53	10

Client Sample ID: HUNTA-03072020

Lab Sample ID: 550-139091-18

Date Collected: 03/07/20 08:30

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.5	D1	0.80		mg/L			03/20/20 05:50	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	31	D1	0.50		mg/L		03/26/20 10:53	04/02/20 11:21	10
Iron	ND	D1	1.0		mg/L		03/26/20 10:53	04/02/20 11:21	10
Lithium	ND	D1	2.0		mg/L		03/26/20 10:53	04/02/20 11:21	10

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquifer Test

Job ID: 550-139091-1

Client Sample ID: HUNTA-03072020

Lab Sample ID: 550-139091-18

Date Collected: 03/07/20 08:30

Matrix: Water

Date Received: 03/09/20 10:12

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	10		ug/L		03/12/20 04:38	03/22/20 14:41	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:55	10
Cobalt	ND	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:41	10
Molybdenum	220	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:41	10
Manganese	230	D1	25		ug/L		03/12/20 04:38	03/22/20 16:55	10

Client Sample ID: HUNTC-03072020

Lab Sample ID: 550-139091-19

Date Collected: 03/07/20 08:40

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.5	D1	0.80		mg/L			03/20/20 06:45	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	31	D1	1.0		mg/L		03/26/20 10:53	04/02/20 11:25	20
Iron	ND	D1	2.0		mg/L		03/26/20 10:53	04/02/20 11:25	20
Lithium	ND	D1	4.0		mg/L		03/26/20 10:53	04/02/20 11:25	20

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	10		ug/L		03/12/20 04:38	03/22/20 14:43	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:57	10
Cobalt	ND	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:43	10
Molybdenum	230	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:43	10
Manganese	230	D1	25		ug/L		03/12/20 04:38	03/22/20 16:57	10

Client Sample ID: MW66A-AQTEST-03052020-13

Lab Sample ID: 550-139091-20

Date Collected: 03/05/20 15:50

Matrix: Water

Date Received: 03/09/20 10:12

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	1.1	D1	0.80		mg/L			03/20/20 07:03	2

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.6	D1	1.0		mg/L		03/26/20 10:53	04/02/20 11:29	20
Iron	14	D1	2.0		mg/L		03/26/20 10:53	04/02/20 11:29	20
Lithium	ND	D1	4.0		mg/L		03/26/20 10:53	04/02/20 11:29	20

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	D1	10		ug/L		03/12/20 04:38	03/22/20 14:45	10
Chromium	ND	D1	20		ug/L		03/12/20 04:38	03/22/20 16:59	10
Cobalt	6.6	D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:45	10
Molybdenum	14	B7 D1	5.0		ug/L		03/12/20 04:38	03/22/20 14:45	10
Manganese	4100	D2	25		ug/L		03/12/20 04:38	03/22/20 16:59	10

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-205834/2

Matrix: Water

Analysis Batch: 205834

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	ND		0.40		mg/L			03/19/20 22:28	1

Lab Sample ID: LCS 550-205834/5

Matrix: Water

Analysis Batch: 205834

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	4.10		mg/L		103	90 - 110

Lab Sample ID: LCSD 550-205834/6

Matrix: Water

Analysis Batch: 205834

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	4.00	4.13		mg/L		103	90 - 110	1	20

Lab Sample ID: 550-139091-20 MS

Matrix: Water

Analysis Batch: 205834

Client Sample ID: MW66A-AQTEST-03052020-13

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	1.1	D1	8.00	8.61	D1	mg/L		93	80 - 120

Lab Sample ID: 550-139091-20 MSD

Matrix: Water

Analysis Batch: 205834

Client Sample ID: MW66A-AQTEST-03052020-13

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	1.1	D1	8.00	8.78	D1	mg/L		96	80 - 120	2	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 550-205129/1-A

Matrix: Water

Analysis Batch: 206198

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 205129

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10		mg/L		03/12/20 05:01	03/24/20 10:33	1
Lithium	ND		0.20		mg/L		03/12/20 05:01	03/24/20 10:33	1

Lab Sample ID: MB 550-206402/1-A

Matrix: Water

Analysis Batch: 207012

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 206402

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.050		mg/L		03/26/20 10:53	04/02/20 09:17	1
Iron	ND		0.10		mg/L		03/26/20 10:53	04/02/20 09:17	1
Lithium	ND		0.20		mg/L		03/26/20 10:53	04/02/20 09:17	1

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquifer Test

Job ID: 550-139091-1

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 550-205128/1-A
Matrix: Water
Analysis Batch: 205960

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 205128

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.0		ug/L		03/12/20 04:38	03/22/20 13:25	1
Cobalt	ND		0.50		ug/L		03/12/20 04:38	03/22/20 13:25	1
Molybdenum	0.519	B7	0.50		ug/L		03/12/20 04:38	03/22/20 13:25	1

Lab Sample ID: MB 550-205128/1-A
Matrix: Water
Analysis Batch: 205962

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 205128

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND		2.0		ug/L		03/12/20 04:38	03/22/20 15:59	1
Manganese	ND		2.5		ug/L		03/12/20 04:38	03/22/20 15:59	1

Lab Sample ID: LCS 550-205128/2-A
Matrix: Water
Analysis Batch: 205960

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 205128

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	102		ug/L		102	80 - 120
Cobalt	100	96.7		ug/L		97	80 - 120
Molybdenum	100	97.9		ug/L		98	80 - 120

Lab Sample ID: LCS 550-205128/2-A
Matrix: Water
Analysis Batch: 205962

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 205128

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	100	91.8		ug/L		92	80 - 120
Manganese	100	93.9		ug/L		94	80 - 120

Lab Sample ID: LCSD 550-205128/3-A
Matrix: Water
Analysis Batch: 205960

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 205128

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	100	99.9		ug/L		100	80 - 120	2	20
Cobalt	100	95.1		ug/L		95	80 - 120	2	20
Molybdenum	100	96.0		ug/L		96	80 - 120	2	20

Lab Sample ID: LCSD 550-205128/3-A
Matrix: Water
Analysis Batch: 205962

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 205128

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium	100	92.6		ug/L		93	80 - 120	1	20
Manganese	100	94.5		ug/L		94	80 - 120	1	20

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 550-139091-1 MS

Matrix: Water

Analysis Batch: 205960

Client Sample ID: GERONIMO-C-03052020

Prep Type: Total/NA

Prep Batch: 205128

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	10	D1	100	104		ug/L		94	75 - 125
Cobalt	ND	D1	100	79.4		ug/L		77	75 - 125
Molybdenum	25	D1 B7	100	130		ug/L		104	75 - 125

Lab Sample ID: 550-139091-1 MS

Matrix: Water

Analysis Batch: 205962

Client Sample ID: GERONIMO-C-03052020

Prep Type: Total/NA

Prep Batch: 205128

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	ND	D1	100	80.8		ug/L		81	75 - 125
Manganese	180	M2 D1	100	243	M2	ug/L		63	75 - 125

Lab Sample ID: 550-139091-1 MSD

Matrix: Water

Analysis Batch: 205960

Client Sample ID: GERONIMO-C-03052020

Prep Type: Total/NA

Prep Batch: 205128

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	10	D1	100	110		ug/L		100	75 - 125	6	20
Cobalt	ND	D1	100	79.4		ug/L		77	75 - 125	0	20
Molybdenum	25	D1 B7	100	127		ug/L		102	75 - 125	2	20

Lab Sample ID: 550-139091-1 MSD

Matrix: Water

Analysis Batch: 205962

Client Sample ID: GERONIMO-C-03052020

Prep Type: Total/NA

Prep Batch: 205128

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chromium	ND	D1	100	79.9		ug/L		80	75 - 125	1	20
Manganese	180	M2 D1	100	249	M2	ug/L		69	75 - 125	2	20

QC Association Summary

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

HPLC/IC

Analysis Batch: 205834

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-139091-1	GERONIMO-C-03052020	Total/NA	Water	300.0	
550-139091-2	GERONIMO-B-03052020	Total/NA	Water	300.0	
550-139091-3	HUNT-B-03052020	Total/NA	Water	300.0	
550-139091-4	MW66A-AQTEST-03052020-1	Total/NA	Water	300.0	
550-139091-5	MW66A-AQTEST-03052020-2	Total/NA	Water	300.0	
550-139091-6	MW66A-AQTEST-03052020-3	Total/NA	Water	300.0	
550-139091-7	MW66A-AQTEST-03052020-4	Total/NA	Water	300.0	
550-139091-8	MW66A-AQTEST-03052020-5	Total/NA	Water	300.0	
550-139091-9	MW66A-AQTEST-03062020-6	Total/NA	Water	300.0	
550-139091-10	MW66A-AQTEST-03062020-7	Total/NA	Water	300.0	
550-139091-11	MW66A-AQTEST-03062020-8	Total/NA	Water	300.0	
550-139091-12	MW66A-AQTEST-03062020-9	Total/NA	Water	300.0	
550-139091-13	MW66A-AQTEST-03062020-10	Total/NA	Water	300.0	
550-139091-14	MW66A-AQTEST-03062020-11	Total/NA	Water	300.0	
550-139091-15	MW66A-AQTEST-03062020-12	Total/NA	Water	300.0	
550-139091-16	MW66A-AQTEST-03062020-13	Total/NA	Water	300.0	
550-139091-17	MW66A-AQTEST-03062020-14	Total/NA	Water	300.0	
550-139091-18	HUNTA-03072020	Total/NA	Water	300.0	
550-139091-19	HUNTC-03072020	Total/NA	Water	300.0	
550-139091-20	MW66A-AQTEST-03052020-13	Total/NA	Water	300.0	
MB 550-205834/2	Method Blank	Total/NA	Water	300.0	
LCS 550-205834/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-205834/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-139091-20 MS	MW66A-AQTEST-03052020-13	Total/NA	Water	300.0	
550-139091-20 MSD	MW66A-AQTEST-03052020-13	Total/NA	Water	300.0	

Metals

Prep Batch: 205128

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-139091-1	GERONIMO-C-03052020	Total/NA	Water	3005A	
550-139091-2	GERONIMO-B-03052020	Total/NA	Water	3005A	
550-139091-3	HUNT-B-03052020	Total/NA	Water	3005A	
550-139091-4	MW66A-AQTEST-03052020-1	Total/NA	Water	3005A	
550-139091-5	MW66A-AQTEST-03052020-2	Total/NA	Water	3005A	
550-139091-6	MW66A-AQTEST-03052020-3	Total/NA	Water	3005A	
550-139091-7	MW66A-AQTEST-03052020-4	Total/NA	Water	3005A	
550-139091-8	MW66A-AQTEST-03052020-5	Total/NA	Water	3005A	
550-139091-9	MW66A-AQTEST-03062020-6	Total/NA	Water	3005A	
550-139091-10	MW66A-AQTEST-03062020-7	Total/NA	Water	3005A	
550-139091-11	MW66A-AQTEST-03062020-8	Total/NA	Water	3005A	
550-139091-12	MW66A-AQTEST-03062020-9	Total/NA	Water	3005A	
550-139091-13	MW66A-AQTEST-03062020-10	Total/NA	Water	3005A	
550-139091-14	MW66A-AQTEST-03062020-11	Total/NA	Water	3005A	
550-139091-15	MW66A-AQTEST-03062020-12	Total/NA	Water	3005A	
550-139091-16	MW66A-AQTEST-03062020-13	Total/NA	Water	3005A	
550-139091-17	MW66A-AQTEST-03062020-14	Total/NA	Water	3005A	
550-139091-18	HUNTA-03072020	Total/NA	Water	3005A	
550-139091-19	HUNTC-03072020	Total/NA	Water	3005A	
550-139091-20	MW66A-AQTEST-03052020-13	Total/NA	Water	3005A	
MB 550-205128/1-A	Method Blank	Total/NA	Water	3005A	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquifer Test

Job ID: 550-139091-1

Metals (Continued)

Prep Batch: 205128 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 550-205128/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 550-205128/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	
550-139091-1 MS	GERONIMO-C-03052020	Total/NA	Water	3005A	
550-139091-1 MSD	GERONIMO-C-03052020	Total/NA	Water	3005A	

Prep Batch: 205129

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-139091-1	GERONIMO-C-03052020	Total/NA	Water	3005A	
550-139091-2	GERONIMO-B-03052020	Total/NA	Water	3005A	
550-139091-3	HUNT-B-03052020	Total/NA	Water	3005A	
550-139091-4	MW66A-AQTEST-03052020-1	Total/NA	Water	3005A	
550-139091-5	MW66A-AQTEST-03052020-2	Total/NA	Water	3005A	
550-139091-6	MW66A-AQTEST-03052020-3	Total/NA	Water	3005A	
550-139091-7	MW66A-AQTEST-03052020-4	Total/NA	Water	3005A	
550-139091-8	MW66A-AQTEST-03052020-5	Total/NA	Water	3005A	
550-139091-9	MW66A-AQTEST-03062020-6	Total/NA	Water	3005A	
550-139091-10	MW66A-AQTEST-03062020-7	Total/NA	Water	3005A	
550-139091-11	MW66A-AQTEST-03062020-8	Total/NA	Water	3005A	
MB 550-205129/1-A	Method Blank	Total/NA	Water	3005A	
LCS 550-205129/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 550-205129/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	
550-139091-1 MS	GERONIMO-C-03052020	Total/NA	Water	3005A	
550-139091-1 MSD	GERONIMO-C-03052020	Total/NA	Water	3005A	

Analysis Batch: 205960

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-139091-1	GERONIMO-C-03052020	Total/NA	Water	6020B	205128
550-139091-2	GERONIMO-B-03052020	Total/NA	Water	6020B	205128
550-139091-3	HUNT-B-03052020	Total/NA	Water	6020B	205128
550-139091-4	MW66A-AQTEST-03052020-1	Total/NA	Water	6020B	205128
550-139091-5	MW66A-AQTEST-03052020-2	Total/NA	Water	6020B	205128
550-139091-6	MW66A-AQTEST-03052020-3	Total/NA	Water	6020B	205128
550-139091-7	MW66A-AQTEST-03052020-4	Total/NA	Water	6020B	205128
550-139091-8	MW66A-AQTEST-03052020-5	Total/NA	Water	6020B	205128
550-139091-9	MW66A-AQTEST-03062020-6	Total/NA	Water	6020B	205128
550-139091-10	MW66A-AQTEST-03062020-7	Total/NA	Water	6020B	205128
550-139091-11	MW66A-AQTEST-03062020-8	Total/NA	Water	6020B	205128
550-139091-12	MW66A-AQTEST-03062020-9	Total/NA	Water	6020B	205128
550-139091-13	MW66A-AQTEST-03062020-10	Total/NA	Water	6020B	205128
550-139091-14	MW66A-AQTEST-03062020-11	Total/NA	Water	6020B	205128
550-139091-15	MW66A-AQTEST-03062020-12	Total/NA	Water	6020B	205128
550-139091-16	MW66A-AQTEST-03062020-13	Total/NA	Water	6020B	205128
550-139091-17	MW66A-AQTEST-03062020-14	Total/NA	Water	6020B	205128
550-139091-18	HUNTA-03072020	Total/NA	Water	6020B	205128
550-139091-19	HUNTC-03072020	Total/NA	Water	6020B	205128
550-139091-20	MW66A-AQTEST-03052020-13	Total/NA	Water	6020B	205128
MB 550-205128/1-A	Method Blank	Total/NA	Water	6020B	205128
LCS 550-205128/2-A	Lab Control Sample	Total/NA	Water	6020B	205128
LCSD 550-205128/3-A	Lab Control Sample Dup	Total/NA	Water	6020B	205128
550-139091-1 MS	GERONIMO-C-03052020	Total/NA	Water	6020B	205128
550-139091-1 MSD	GERONIMO-C-03052020	Total/NA	Water	6020B	205128

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Metals

Analysis Batch: 205962

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-139091-1	GERONIMO-C-03052020	Total/NA	Water	6020B	205128
550-139091-2	GERONIMO-B-03052020	Total/NA	Water	6020B	205128
550-139091-3	HUNT-B-03052020	Total/NA	Water	6020B	205128
550-139091-4	MW66A-AQTEST-03052020-1	Total/NA	Water	6020B	205128
550-139091-5	MW66A-AQTEST-03052020-2	Total/NA	Water	6020B	205128
550-139091-6	MW66A-AQTEST-03052020-3	Total/NA	Water	6020B	205128
550-139091-7	MW66A-AQTEST-03052020-4	Total/NA	Water	6020B	205128
550-139091-8	MW66A-AQTEST-03052020-5	Total/NA	Water	6020B	205128
550-139091-9	MW66A-AQTEST-03062020-6	Total/NA	Water	6020B	205128
550-139091-10	MW66A-AQTEST-03062020-7	Total/NA	Water	6020B	205128
550-139091-11	MW66A-AQTEST-03062020-8	Total/NA	Water	6020B	205128
550-139091-12	MW66A-AQTEST-03062020-9	Total/NA	Water	6020B	205128
550-139091-13	MW66A-AQTEST-03062020-10	Total/NA	Water	6020B	205128
550-139091-14	MW66A-AQTEST-03062020-11	Total/NA	Water	6020B	205128
550-139091-15	MW66A-AQTEST-03062020-12	Total/NA	Water	6020B	205128
550-139091-16	MW66A-AQTEST-03062020-13	Total/NA	Water	6020B	205128
550-139091-17	MW66A-AQTEST-03062020-14	Total/NA	Water	6020B	205128
550-139091-18	HUNTA-03072020	Total/NA	Water	6020B	205128
550-139091-19	HUNTC-03072020	Total/NA	Water	6020B	205128
550-139091-20	MW66A-AQTEST-03052020-13	Total/NA	Water	6020B	205128
MB 550-205128/1-A	Method Blank	Total/NA	Water	6020B	205128
LCS 550-205128/2-A	Lab Control Sample	Total/NA	Water	6020B	205128
LCSD 550-205128/3-A	Lab Control Sample Dup	Total/NA	Water	6020B	205128
550-139091-1 MS	GERONIMO-C-03052020	Total/NA	Water	6020B	205128
550-139091-1 MSD	GERONIMO-C-03052020	Total/NA	Water	6020B	205128

Analysis Batch: 206198

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-139091-1	GERONIMO-C-03052020	Total/NA	Water	6010C	205129
550-139091-2	GERONIMO-B-03052020	Total/NA	Water	6010C	205129
550-139091-3	HUNT-B-03052020	Total/NA	Water	6010C	205129
550-139091-4	MW66A-AQTEST-03052020-1	Total/NA	Water	6010C	205129
550-139091-5	MW66A-AQTEST-03052020-2	Total/NA	Water	6010C	205129
550-139091-6	MW66A-AQTEST-03052020-3	Total/NA	Water	6010C	205129
550-139091-7	MW66A-AQTEST-03052020-4	Total/NA	Water	6010C	205129
550-139091-8	MW66A-AQTEST-03052020-5	Total/NA	Water	6010C	205129
550-139091-9	MW66A-AQTEST-03062020-6	Total/NA	Water	6010C	205129
550-139091-10	MW66A-AQTEST-03062020-7	Total/NA	Water	6010C	205129
550-139091-11	MW66A-AQTEST-03062020-8	Total/NA	Water	6010C	205129
MB 550-205129/1-A	Method Blank	Total/NA	Water	6010C	205129
LCS 550-205129/2-A	Lab Control Sample	Total/NA	Water	6010C	205129
LCSD 550-205129/3-A	Lab Control Sample Dup	Total/NA	Water	6010C	205129
550-139091-1 MS	GERONIMO-C-03052020	Total/NA	Water	6010C	205129
550-139091-1 MSD	GERONIMO-C-03052020	Total/NA	Water	6010C	205129

Prep Batch: 206402

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-139091-1	GERONIMO-C-03052020	Total/NA	Water	3005A	
550-139091-2	GERONIMO-B-03052020	Total/NA	Water	3005A	
550-139091-3	HUNT-B-03052020	Total/NA	Water	3005A	
550-139091-4	MW66A-AQTEST-03052020-1	Total/NA	Water	3005A	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquifer Test

Job ID: 550-139091-1

Metals (Continued)

Prep Batch: 206402 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-139091-5	MW66A-AQTEST-03052020-2	Total/NA	Water	3005A	
550-139091-6	MW66A-AQTEST-03052020-3	Total/NA	Water	3005A	
550-139091-7	MW66A-AQTEST-03052020-4	Total/NA	Water	3005A	
550-139091-8	MW66A-AQTEST-03052020-5	Total/NA	Water	3005A	
550-139091-9	MW66A-AQTEST-03062020-6	Total/NA	Water	3005A	
550-139091-10	MW66A-AQTEST-03062020-7	Total/NA	Water	3005A	
550-139091-11	MW66A-AQTEST-03062020-8	Total/NA	Water	3005A	
550-139091-12	MW66A-AQTEST-03062020-9	Total/NA	Water	3005A	
550-139091-13	MW66A-AQTEST-03062020-10	Total/NA	Water	3005A	
550-139091-14	MW66A-AQTEST-03062020-11	Total/NA	Water	3005A	
550-139091-15	MW66A-AQTEST-03062020-12	Total/NA	Water	3005A	
550-139091-16	MW66A-AQTEST-03062020-13	Total/NA	Water	3005A	
550-139091-17	MW66A-AQTEST-03062020-14	Total/NA	Water	3005A	
550-139091-18	HUNTA-03072020	Total/NA	Water	3005A	
550-139091-19	HUNTC-03072020	Total/NA	Water	3005A	
550-139091-20	MW66A-AQTEST-03052020-13	Total/NA	Water	3005A	
MB 550-206402/1-A	Method Blank	Total/NA	Water	3005A	
LCS 550-206402/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 550-206402/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	
550-139091-3 MS	HUNT-B-03052020	Total/NA	Water	3005A	
550-139091-3 MSD	HUNT-B-03052020	Total/NA	Water	3005A	

Analysis Batch: 207012

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-139091-1	GERONIMO-C-03052020	Total/NA	Water	6010C	206402
550-139091-2	GERONIMO-B-03052020	Total/NA	Water	6010C	206402
550-139091-3	HUNT-B-03052020	Total/NA	Water	6010C	206402
550-139091-4	MW66A-AQTEST-03052020-1	Total/NA	Water	6010C	206402
550-139091-5	MW66A-AQTEST-03052020-2	Total/NA	Water	6010C	206402
550-139091-6	MW66A-AQTEST-03052020-3	Total/NA	Water	6010C	206402
550-139091-7	MW66A-AQTEST-03052020-4	Total/NA	Water	6010C	206402
550-139091-8	MW66A-AQTEST-03052020-5	Total/NA	Water	6010C	206402
550-139091-9	MW66A-AQTEST-03062020-6	Total/NA	Water	6010C	206402
550-139091-10	MW66A-AQTEST-03062020-7	Total/NA	Water	6010C	206402
550-139091-11	MW66A-AQTEST-03062020-8	Total/NA	Water	6010C	206402
550-139091-12	MW66A-AQTEST-03062020-9	Total/NA	Water	6010C	206402
550-139091-13	MW66A-AQTEST-03062020-10	Total/NA	Water	6010C	206402
550-139091-14	MW66A-AQTEST-03062020-11	Total/NA	Water	6010C	206402
550-139091-15	MW66A-AQTEST-03062020-12	Total/NA	Water	6010C	206402
550-139091-16	MW66A-AQTEST-03062020-13	Total/NA	Water	6010C	206402
550-139091-17	MW66A-AQTEST-03062020-14	Total/NA	Water	6010C	206402
550-139091-18	HUNTA-03072020	Total/NA	Water	6010C	206402
550-139091-19	HUNTC-03072020	Total/NA	Water	6010C	206402
550-139091-20	MW66A-AQTEST-03052020-13	Total/NA	Water	6010C	206402
MB 550-206402/1-A	Method Blank	Total/NA	Water	6010C	206402
LCS 550-206402/2-A	Lab Control Sample	Total/NA	Water	6010C	206402
LCSD 550-206402/3-A	Lab Control Sample Dup	Total/NA	Water	6010C	206402
550-139091-3 MS	HUNT-B-03052020	Total/NA	Water	6010C	206402
550-139091-3 MSD	HUNT-B-03052020	Total/NA	Water	6010C	206402

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Client Sample ID: GERONIMO-C-03052020

Lab Sample ID: 550-139091-1

Date Collected: 03/05/20 09:25

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	205834	03/20/20 00:00	NEL	TAL PHX
Total/NA	Prep	3005A			205129	03/12/20 05:01	SGO	TAL PHX
Total/NA	Analysis	6010C		1	206198	03/24/20 10:57	SRA	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		10	207012	04/02/20 10:01	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 13:54	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:11	ARE	TAL PHX

Client Sample ID: GERONIMO-B-03052020

Lab Sample ID: 550-139091-2

Date Collected: 03/05/20 09:50

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 00:18	NEL	TAL PHX
Total/NA	Prep	3005A			205129	03/12/20 05:01	SGO	TAL PHX
Total/NA	Analysis	6010C		1	206198	03/24/20 11:17	SRA	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		10	207012	04/02/20 10:05	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:00	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:17	ARE	TAL PHX

Client Sample ID: HUNT-B-03052020

Lab Sample ID: 550-139091-3

Date Collected: 03/05/20 10:30

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 00:37	NEL	TAL PHX
Total/NA	Prep	3005A			205129	03/12/20 05:01	SGO	TAL PHX
Total/NA	Analysis	6010C		1	206198	03/24/20 11:21	SRA	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		10	207012	04/02/20 09:41	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:02	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:19	ARE	TAL PHX

Lab Chronicle

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Client Sample ID: MW66A-AQTEST-03052020-1

Lab Sample ID: 550-139091-4

Date Collected: 03/05/20 11:50

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 00:55	NEL	TAL PHX
Total/NA	Prep	3005A			205129	03/12/20 05:01	SGO	TAL PHX
Total/NA	Analysis	6010C		1	206198	03/24/20 11:25	SRA	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		10	207012	04/02/20 10:09	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:04	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:22	ARE	TAL PHX

Client Sample ID: MW66A-AQTEST-03052020-2

Lab Sample ID: 550-139091-5

Date Collected: 03/05/20 13:50

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 01:13	NEL	TAL PHX
Total/NA	Prep	3005A			205129	03/12/20 05:01	SGO	TAL PHX
Total/NA	Analysis	6010C		1	206198	03/24/20 11:29	SRA	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		10	207012	04/02/20 10:13	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:06	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:24	ARE	TAL PHX

Client Sample ID: MW66A-AQTEST-03052020-3

Lab Sample ID: 550-139091-6

Date Collected: 03/05/20 19:40

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 01:32	NEL	TAL PHX
Total/NA	Prep	3005A			205129	03/12/20 05:01	SGO	TAL PHX
Total/NA	Analysis	6010C		1	206198	03/24/20 11:33	SRA	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		10	207012	04/02/20 10:17	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:08	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:26	ARE	TAL PHX

Lab Chronicle

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Client Sample ID: MW66A-AQTEST-03052020-4

Lab Sample ID: 550-139091-7

Date Collected: 03/05/20 21:40

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 01:50	NEL	TAL PHX
Total/NA	Prep	3005A			205129	03/12/20 05:01	SGO	TAL PHX
Total/NA	Analysis	6010C		1	206198	03/24/20 11:37	SRA	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		10	207012	04/02/20 10:21	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:11	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:28	ARE	TAL PHX

Client Sample ID: MW66A-AQTEST-03052020-5

Lab Sample ID: 550-139091-8

Date Collected: 03/05/20 23:40

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 02:09	NEL	TAL PHX
Total/NA	Prep	3005A			205129	03/12/20 05:01	SGO	TAL PHX
Total/NA	Analysis	6010C		1	206198	03/24/20 11:41	SRA	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		10	207012	04/02/20 10:25	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:13	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:30	ARE	TAL PHX

Client Sample ID: MW66A-AQTEST-03062020-6

Lab Sample ID: 550-139091-9

Date Collected: 03/06/20 01:40

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 02:27	NEL	TAL PHX
Total/NA	Prep	3005A			205129	03/12/20 05:01	SGO	TAL PHX
Total/NA	Analysis	6010C		1	206198	03/24/20 11:45	SRA	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		20	207012	04/02/20 10:29	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:15	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:32	ARE	TAL PHX

Lab Chronicle

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Client Sample ID: MW66A-AQTEST-03062020-7

Lab Sample ID: 550-139091-10

Date Collected: 03/06/20 03:40

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 02:46	NEL	TAL PHX
Total/NA	Prep	3005A			205129	03/12/20 05:01	SGO	TAL PHX
Total/NA	Analysis	6010C		1	206198	03/24/20 11:49	SRA	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		10	207012	04/02/20 10:33	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:17	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:34	ARE	TAL PHX

Client Sample ID: MW66A-AQTEST-03062020-8

Lab Sample ID: 550-139091-11

Date Collected: 03/06/20 05:40

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 03:41	NEL	TAL PHX
Total/NA	Prep	3005A			205129	03/12/20 05:01	SGO	TAL PHX
Total/NA	Analysis	6010C		1	206198	03/24/20 11:53	SRA	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		10	207012	04/02/20 10:37	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:26	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:40	ARE	TAL PHX

Client Sample ID: MW66A-AQTEST-03062020-9

Lab Sample ID: 550-139091-12

Date Collected: 03/06/20 07:40

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 03:59	NEL	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		10	207012	04/02/20 10:57	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:28	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:42	ARE	TAL PHX

Client Sample ID: MW66A-AQTEST-03062020-10

Lab Sample ID: 550-139091-13

Date Collected: 03/06/20 09:40

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 04:18	NEL	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Client Sample ID: MW66A-AQTEST-03062020-10

Lab Sample ID: 550-139091-13

Date Collected: 03/06/20 09:40

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		10	207012	04/02/20 11:01	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:31	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:44	ARE	TAL PHX

Client Sample ID: MW66A-AQTEST-03062020-11

Lab Sample ID: 550-139091-14

Date Collected: 03/06/20 11:40

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 04:36	NEL	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		20	207012	04/02/20 11:05	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:33	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:46	ARE	TAL PHX

Client Sample ID: MW66A-AQTEST-03062020-12

Lab Sample ID: 550-139091-15

Date Collected: 03/06/20 13:40

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 04:54	NEL	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		20	207012	04/02/20 11:09	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:35	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:48	ARE	TAL PHX

Client Sample ID: MW66A-AQTEST-03062020-13

Lab Sample ID: 550-139091-16

Date Collected: 03/06/20 15:40

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 05:13	NEL	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		20	207012	04/02/20 11:13	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:37	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:50	ARE	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Client Sample ID: MW66A-AQTEST-03062020-14

Lab Sample ID: 550-139091-17

Date Collected: 03/06/20 17:30

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 05:31	NEL	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		20	207012	04/02/20 11:17	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:39	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:53	ARE	TAL PHX

Client Sample ID: HUNTA-03072020

Lab Sample ID: 550-139091-18

Date Collected: 03/07/20 08:30

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 05:50	NEL	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		10	207012	04/02/20 11:21	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:41	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:55	ARE	TAL PHX

Client Sample ID: HUNTC-03072020

Lab Sample ID: 550-139091-19

Date Collected: 03/07/20 08:40

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 06:45	NEL	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		20	207012	04/02/20 11:25	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:43	ARE	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:57	ARE	TAL PHX

Client Sample ID: MW66A-AQTEST-03052020-13

Lab Sample ID: 550-139091-20

Date Collected: 03/05/20 15:50

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	205834	03/20/20 07:03	NEL	TAL PHX
Total/NA	Prep	3005A			206402	03/26/20 10:53	SGO	TAL PHX
Total/NA	Analysis	6010C		20	207012	04/02/20 11:29	SRA	TAL PHX
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205960	03/22/20 14:45	ARE	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Client Sample ID: MW66A-AQTEST-03052020-13

Lab Sample ID: 550-139091-20

Date Collected: 03/05/20 15:50

Matrix: Water

Date Received: 03/09/20 10:12

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			205128	03/12/20 04:38	SGO	TAL PHX
Total/NA	Analysis	6020B		10	205962	03/22/20 16:59	ARE	TAL PHX

Laboratory References:

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Laboratory: Eurofins TestAmerica, Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-08-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020B	3005A	Water	Molybdenum

Method Summary

Client: Wood E&I Solutions Inc
Project/Site: FAP Aquaifer Test

Job ID: 550-139091-1

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PHX
6010C	Metals (ICP)	SW846	TAL PHX
6020B	Metals (ICP/MS)	SW846	TAL PHX
3005A	Preparation, Total Metals	SW846	TAL PHX

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Chain of Custody Record 429310 eurofins

Address: _____

Regulatory Program: ☐ DW ☐ MDES ☐ RCRA ☐ Other: _____

TAL-8210

Environment TestAmerica

4/2/2020

Client Contact

Company Name: **WOOD PLC**
Address: **4600 E Washington St., Suite 600**
City/State/Zip: **Phoenix, AZ, 85034**
Phone: _____
Fax: _____
Project Name: **FAP Aquifer Test**
Site: _____
PO # **1420182040.000.01**

Project Manager: **EMILY COOPER**

Tel/Email: **480-733-6081**
Analysis Turnaround Time
☐ CALENDAR DAYS ☐ WORKING DAYS
TAT if different from Below **STD**
☐ 2 weeks
☐ 1 week
☐ 2 days
☐ 1 day

Site Contact: **DAVE ANDERSEN**

Lab Contact: **R. SESTER**
Carrier: _____
Date: _____

COC No. **1** of **2** COCs

Sampler: _____
For Lab Use Only:
Walk-in Client: _____
Lab Sampling: _____
Job / SDG No.: _____

Sample Identification

Sample Identification	Sample Date	Sample Time	Sample Type (G=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Sample Specific Notes
GERONIMO-C-03052020	3-5-20	0925	G	W	2	N	N	Asbestos, Arsenic, Barium, Cobalt, Chromium, Fluoride, Lithium, Molybdenum, Iron, Nitric, Manganese,
GERONIMO-B-03052020	3-5-20	0950	G	W	2	N	N	
HUNT-B-03052020	3-5-20	1030	G	W	2	N	N	
HUNT-A-03052020	3-5-20	1037	G	W	2	N	N	
MW66A-AQTEST-03052020-1	3-5-20	1150	G	W	2	N	N	
MW66A-AQTEST-03052020-2	3-5-20	1350	G	W	2	N	N	
MW66A-AQTEST-03052020-3	3-5-20	1940	G	W	2	N	N	
MW66A-AQTEST-03052020-4	3-5-20	2140	G	W	2	N	N	
MW66A-AQTEST-03052020-5	3-5-20	2340	G	W	2	N	N	
MW66A-AQTEST-03062020-6	3-6-20	0140	G	W	2	N	N	
MW66A-AQTEST-03062020-7	3-6-20	0340	G	W	2	N	N	
MW66A-AQTEST-03062020-8	3-6-20	0540	G	W	2	N	N	



550-139091 Chain of Custody

Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

03/2/20

Custody Seal Intact: ☐ Yes ☐ No

Relinquished by: **Ruby Gino** Company: **WOOD** Date/Time: **3/9/2020** Received by: _____ Date/Time: _____

Relinquished by: _____ Company: _____ Date/Time: _____ Received in Laboratory by: _____ Date/Time: **3/9/20 10:12**

CDO

1
2
3
4
5
6
7
8
9
10
11
12
13
14

Chain of Custody Record

429311



Environment Testing
TestAmerica

Address: _____

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other: _____

TAL-8210

139091

Client Contact				Project Manager: Emily LeBlanc				Site Contact: Dave Anderson				COC No: 1 of 2 COCs			
Company Name: Wood PLC				Tel/Email: 602-733-1681				Date:				Sampler: 1			
Address: 4600 E Washington St, Suite 600				Analysis Turnaround Time				Lab Contact: R. Seifer				For Lab Use Only:			
City/State/Zip: Phoenix, AZ 85034				<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS				Carrier:				Walk-in Client:			
Phone:				TAT if different from Below: 5TD								Lab Sampling:			
Fax:				1 day								Job / SDG No.:			
Project Name: EPA Aquifer Test				2 weeks								Sample Specific Notes:			
Site:				1 week											
PO # 142182010.445.01				2 days											
Sample Identification				Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)					
-12	MWb6A-AQTest-03062020-9	3-6-20	07:40	G	W	2	W	1	60209, 6010C	300 DRG FMS	Analytes: Arsenic, Barium, Cadmium, Chromium, Fluoride, Lithium, Manganese, Iron, Nitrate, Nitrogen				
-13	MWb6A-AQTest-03062020-10	3-6-20	09:40	G	W	2	W	1							
-14	MWb6A-AQTest-03062020-11	3-6-20	11:40	G	W	2	W	1							
-15	MWb6A-AQTest-03062020-12	3-6-20	13:40	G	W	2	W	1							
-16	MWb6A-AQTest-03062020-13	3-6-20	15:40	G	W	2	W	1							
-17	MWb6A-AQTest-03062020-14	3-6-20	17:30	G	W	2	W	1							
-18	HUNT-03072020	3-7-20	08:30	G	W	2	W	1							
-15	HUNT-03072020	3-7-20	08:40	G	W	2	W	1							
-20	MWb6A-AQTest-03052020-13	3-5-20	15:50	G	W	2	W	1							

Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other _____

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Special Instructions/QC Requirements & Comments: _____

Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:	Cooler Temp. (°C): Obsd. _____	Corrd. _____	Therm ID No.:
Relinquished by: <i>John Doe</i>	Company: <i>Wood</i>	Date/Time: <i>3/9/20 10:12</i>	Received by: _____	Received in Laboratory: <i>CD</i>	Company: <i>TH-042</i>
Relinquished by: _____	Company: _____	Date/Time: _____	Received by: _____	Received in Laboratory: _____	Company: _____
Relinquished by: _____	Company: _____	Date/Time: _____	Received by: _____	Received in Laboratory: _____	Company: _____

Date/Time: *3/9/20 10:12*

Login Sample Receipt Checklist

Client: Wood E&I Solutions Inc

Job Number: 550-139091-1

Login Number: 139091

List Source: Eurofins TestAmerica, Phoenix

List Number: 1

Creator: Gravlin, Andrea

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

APPENDIX D

CPT INVESTIGATION AND PIEZOMETER INSTALLATION AT THE FAP



Technical Memorandum

To: Arizona Public Service Company

File No. 14-2018-2040

From: Ray Markley, PE

Reviewed by: Maren Henley, PE

Date: January 31, 2021

Subject: **CPT INVESTIGATION AND PIEZOMETER INSTALLATION AT THE FAP**
Arizona Public Service Cholla Power Plant – Navajo County, Arizona

1.0 INTRODUCTION

Wood Environment and Infrastructure Solutions, Inc. (Wood) has prepared this Technical Memorandum to provide results from the cone penetration tests (CPTs) and the vibrating wire piezometer (VWP) installations at the Arizona Public Service Company (APS) Cholla Power Plant's Fly Ash Pond (FAP). The purpose of the investigation was to evaluate the soil properties, pore pressure conditions, potentiometric surface, depth to bedrock and groundwater quality in the alluvium and the weathered portion of the Moqui member of the Moenkopi Formation downgradient of the FAP. The work described herein was performed as a Pre-Design Study to support the selection of potential corrective measures for the FAP in accordance with 40 Code of Federal Regulations Sections 257.90 through 257.98 (herein referred to as the CCR Rule)(Federal Register, 2018).

2.0 SITE INVESTIGATION

The site investigation was performed from July 13 through 21, 2020 and included advancing a total of 24 CPT soundings along the toe of the FAP; installing a total of 10 VWPs at select CPT sounding locations; and collecting groundwater samples where possible at select CPT sounding locations. Locations of the CPT soundings and the VWPs are depicted on Figure 1.

2.1 Cone Penetration Testing

A geotechnical investigation utilizing CPTs can provide valuable information for characterizing subsurface conditions and assessing various soil properties. A typical CPT involves pushing a 35.7-mm-diameter conical penetrometer into the ground at a standard rate of 2 cm/sec while electronic transducers record the force on the conical tip, the drag force on a short sleeve section behind the tip and the pore water pressure behind the tip. The tip force is divided by the cross-sectional area of the penetrometer to determine the tip resistance (q_t) and the sleeve drag force is divided by the sleeve surface area to determine the sleeve friction (f_s).

CPT soundings were performed by ConeTec to further evaluate the subsurface profile and pore pressure conditions at the FAP. Field supervision was performed by Ray Markley, PE. The CPT depths are presented in Table 1 and locations are shown on Figure 1. Standard CPT log outputs are provided in Attachment 2.

As part of the testing, 24 soundings were pushed to refusal with depths ranging from approximately 6 to 53 feet below ground surface using a truck mounted CPT rig. Seismic CPT testing was performed at each sounding for intervals of 3.28 feet (1 meter). Static Pore Pressure tests or Pore Pressure Dissipation (PPD)



tests were conducted to measure the pore pressure over time to evaluate the relationship as pore pressures approached equilibrium water pressures. Typically, the depth selected was where there was a sudden increase in pore pressures or change in material type. The PPD tests were complete once equilibrium was reached or after a duration of 30 minutes elapsed. Results of PPD tests are presented in Attachment A and summarized in Table 2.

2.2 Hydro-Punch Sampling and Laboratory Analysis

In-situ water samples were collected during the investigation to assess potential preferential seepage pathways from the FAP. In-situ water samples were collected at 5 of the CPT soundings (CPT-14, CPT-17, CPT-18, CPT-19, CPT-20) ranging from depths of 33.8 to 50.0 feet below ground surface (Elevation 4984.7 to 5001.2). The hydro-punch sampling data and details are presented in Table 5. The sample depths were selected within the gravel layers based on hydrogeologic conditions and availability of water for sampling. The gravel layer provided better flow of groundwater to be sampled from compared to the more impermeable soils. Two additional water samples were obtained from Sump C (Sump 1) and Sump D (Sump 2). The samples were not field filtered, and due to the nature of the sampling method, the water samples were very turbid and contained sediment. The turbidity and presence of sediments was due to disturbance from the CPT rods being pushed and smearing soil from the sidewall into the sample. The sample collection, handling and transportation methods were conducted in general accordance with both the:

- *Groundwater Sampling and Analysis Program, Cholla Power Plant* (Montgomery & Associates, 2015) which identifies monitoring procedures for the CCR groundwater monitoring system.
- *Groundwater Sampling - Standard Operating Procedures* (ConeTec, 2020)

The samples were analyzed by TestAmerica, Inc., an Arizona Department of Health Services-licensed laboratory (AZ0728). Laboratory analysis of the groundwater samples were prioritized for CCR Rule constituents which are relatively conservative (i.e. non-reactive) and useful in assessing potential seepage pathways from the FAP. The priority constituents include fluoride and total dissolved solids (TDS). Secondary constituents for analysis include CCR Rule Attachment IV constituents which have been detected at concentrations exceeding respective groundwater protection standards (GWPSs). These constituents include arsenic, lithium, and molybdenum. All water samples were analyzed for total metal concentrations.

2.3 Vibrating Wire Piezometer Installation

A single push-in VWP was installed at 10 of the 24 CPT sounding locations. The VWPs will measure fluid pore pressures at the depth where the tip was installed and correlate to a phreatic surface at that location. The VWPs were pushed in utilizing the CPT casing and locations were based on dynamic pore water pressures and PPD test results encountered during the soundings. VWP tips were generally installed within the gravel layer just before refusal or at refusal. The VWP leads terminate as a port to be read manually by a handheld readout device that can store data. The surface completions consist of a flush mount well vault (manhole) where the VWP port and extra cable can be secured. A list of the VWPs and installation depths are presented in Table 3 and the locations are shown on Figure 1.

3.0 FIELD INVESTIGATION RESULTS

3.1 CPT and Vibrating Wire Piezometers

The CPT data were used to evaluate soil properties of the alluvium located downgradient of the FAP as well as to evaluate pore pressure conditions, depths of bedrock (Moqui), depths of phreatic surface. This additional subsurface characterization will support remedy selection. Table 1 presents the final depths of the CPT soundings where refusal on competent bedrock/Moqui was encountered. The depth of alluvium between CPT-14 and CPT-21 extends from the ground surface down to a depth of approximately 47 to 53 feet where refusal was encountered. The depth of alluvium gradually decreases west of CPT-14 and sharply decreases east of CPT-21.

3.1.1 Geotechnical Interpretations

The interpretation of the CPT data in Attachment A is based on the corrected tip resistance (q_t), sleeve friction (f_s), and pore water pressure (u). The friction ratio (R_f) is calculated as the ratio of sleeve friction to the tip resistance expressed as a percentage. These data are used to classify the soil type based on the correlations developed by Robertson et al. (1986) and Robertson (1990, 2009). Generally, saturated cohesive (clayey) soils have low tip resistance, high friction ratios and generate large excess pore water pressures. Cohesionless (non-clayey) soils have higher tip resistances, lower friction ratios and do not generate significant excess pore water pressures.

Based on recent site investigations (Wood, 2020) and review of boring logs for existing monitoring wells and piezometers at the FAP, Wood observed a zone at the base of the alluvium where gravel is present and increases in the silty clay soil. Data from the CPT investigation were used to evaluate soil classification of the alluvium, and specifically if and where zones of increased gravel at the base of the alluvium are present. Overall, interpretation of the data classifies the alluvium as predominately clay, clay and silty clay, silty sand, and sandy silt. Figures 3, 4a, and 4b present profile views of results of the CPT and predominant soil layers. Figure 3 presents the entire length of the profile and includes all CPT locations; and Figures 4a and 4b present the east half and west half of the profile, respectively.

The soils near the ground surface consist of silty sand and sandy silt underlain by a thin layer of clay and silty clay, followed by a thicker clay layer that increases with depth from east to west between CPT-14 to CPT-21. Below the thick clay layer is a clay and silty clay layer followed by a layer that may have increased gravel in the silty clay soil matrix before encountering refusal within the competent bedrock (Moqui). This gravel layer was estimated from the standard plots where there is a significant increase in corrected tip resistance and sleeve friction as well as there being a material change to sand and very dense/stiff soil (Figures 4a and 4b). This is consistent throughout the FAP along the base of the alluvium ranging from 0.7 to 11.1 feet in thickness. Additionally, most of the dynamic pore pressure plots show a decrease in excess pore pressures at the corresponding gravel layer depths. These decreases in pore pressure support the assumption of the presence of increased gravel content.

The alluvium and zones of increased gravel were similar in comparison to data collected from adjacent monitoring wells, piezometers, and extraction wells. Previous boring logs describe the alluvium as layers of clay, silt, and sand. Some of the boring logs recorded an increase in gravel material at the base of the alluvium before encountering the Moqui. The depth to this gravel layer and the depth to competent Moqui are consistent with the range of depths presented in the CPT data (Figure 3 and Attachment A).

3.1.2 Hydrogeological Interpretations

The CPT investigation was also used to evaluate formation pore pressures, and the potential presence of water and phreatic surface. As part of the CPT investigation the depth to the phreatic surface was estimated from the results of the PPD tests performed, where the tests were successful. Several PPD tests were terminated during the test due to the pore pressure not approaching equilibrium in a typical timeframe and the long time necessary to do so. This indicates very clayey soils and very low permeabilities. The final pore pressure was subtracted from the testing depth to estimate the depth to the phreatic surface. The estimated depths to phreatic surface and elevations of the phreatic surface are presented in Table 2 (Pore Pressure Dissipation Test Summary). There was minimal to no pore pressures or phreatic surface present at CPT-01, CPT-03, CPT-05, and CPT-07. The estimated phreatic surface from CPT-08 to CPT-15 is generally within the range of 16 to 23 feet bgs (El. 5012 to 5019 feet). The estimated phreatic surface from CPT-16 to CPT-22 is generally within the range of 4 to 23 feet bgs (El. 5012 to 5036 feet), except for CPT-19 and CPT-27 which were artesian. This phreatic surface based on the PPD is shown on Figures 3 and 4b as the yellow line.

Starting in July 2020, the VWP's were measured approximately every other week. The data acquired represent the change for the period from their installation to October 2020 and are summarized in Table 3 (Piezometer Installation Summary). Visual summaries of the collected piezometric monitoring data are provided as hydrographs of potentiometric surface elevation over time in Attachment B. The graphs also indicate the ground surface and VWP tip elevations at the location of the VWP's.

The initial VWP data after installation in July 2020, presented a potentiometric surface ranging from 10 to 24 feet bgs (El. 5009 to 5025 feet) except for VWP-27 which was artesian. As of October 2020, the potentiometric surface ranges from 11 to 26 feet bgs (El. 5008 to 5024 feet) except for VWP-19 and VWP-27 which are artesian. During the CPT investigation, depth to water was measured from nearby wells and piezometers. Depth to water at W-123 and F-111 were 0.75 feet bgs (El. 5039.1 feet) and 3.8 feet bgs (El. 5031.5 feet), respectively. This phreatic surface based on the VWP's is shown on Figure 2a as the red line and Figures 3 and 4b as the yellow line. These surfaces are generally consistent with water levels from the surrounding monitoring wells and piezometers.

Seismic testing was conducted at every sounding for intervals of 3.28 feet (1 meter). The seismic testing plots were also evaluated for determining the depth of water levels. An increase in the compression wave velocities show a pattern of increase at the assumed water level depths.

3.2 Water Quality Data

Analytical laboratory results for the collected water samples are summarized in Table 3. For the hydro-punch samples, concentrations of cobalt and lithium were detected above respective GWPSs. Additionally, with the exception of the CPT-14 sample, concentrations of arsenic were detected above the GWPS in the hydro-punch samples. Results for the Sump C sample indicate concentrations of fluoride and lithium above respective GWPSs, while results for the Sump D sample indicate concentrations of fluoride, lithium, and molybdenum above respective GWPSs. Concentrations of TDS measured in the hydro-punch samples ranged from 9,800 to 14,000 mg/L while TDS concentrations for the Sump C and Sump D samples ranged from 19,000 to 20,000 mg/L.

The arsenic and cobalt concentrations detected in the hydro-punch samples are not typical of arsenic and cobalt concentrations measured at wells downgradient of the FAP during routine groundwater sampling. For example, the three previous groundwater samples collected at nearby monitoring wells M-50A and W-123 have detected arsenic between 0.0012 and 0.0030 mg/L and cobalt between 0.00053 and 0.0041 mg/L. As

indicated in Section 2.2, the hydro-punch water samples were noted to be very turbid and filled with sediment after they were collected, suggesting the anomalously high arsenic and cobalt concentrations could have resulted from high sample turbidity since these samples were not filtered in the field or laboratory and were analyzed for total concentration. Therefore, the hydro-punch sample data are not considered to be fully representative of groundwater quality downgradient of the FAP.

The elevated concentrations of fluoride and lithium measured in the Geronimo C and Geronimo D seepage collection sumps suggest the seepage collection system at the FAP intercepts zones of relatively high seepage from the FAP. The collection sumps receive flow from shallow French Drains (seepage intercept trenches) in the vicinity of the Geronimo seepage collection wells. The seepage intercept trench located on the north side drains to Geronimo C, and the seepage intercept trench on the south end drains to Geronimo D (Figure 1).

4.0 CONCLUSIONS AND RECOMMENDATIONS

The CPT investigation helped further characterize and verify subsurface conditions at the toe of the FAP with regards to: the lateral and vertical soil types in the alluvium, specifically the presence and location of potentially coarser zone at the base of the alluvium; the depth to competent Moqui; and, the distribution and magnitude of pore pressures in the vadose and saturated portions of the alluvium.

The subsurface at the western portion of the toe (CPT-01 to CPT-08) is predominantly sand and silty sand with some clayey silt, and the depth to bedrock is shallow (5 to 20 feet). Also, the CPT soundings through the alluvium recorded minimal to no pore pressures, and therefore it can be assumed that there is minimal to no saturation in that portion of the alluvium, with potential disconnected seepage flow paths at the base of the alluvium.

The subsurface at the middle to eastern portion of the toe (CPT-09 through CPT-27) is predominantly beds of clay, silty clay, and silts, and the depth to bedrock is deeper (ranging from approximately 30 to 50 feet). In addition, all the CPTs encountered what is interpreted as the increased gravel silty clay layer at the base of the alluvium (See Figures 2b and 4b). The CPT soundings through the alluvium recorded minimal pore pressures near the surface, where it is assumed there is minimal moisture content. Then dynamic pore pressures would generally increase but fluctuate between high and low pressures, and many of the PPDs were cut short because the pore pressure was dissipating too slowly or not at all. These data and observations typically indicate variably saturated, very low permeability ($<10^{-7}$ cm/sec) clayey material.

However, for the system overall, the phreatic surfaces estimated by the PPDs and the VWP are similar and occur approximately 15 to 25 feet bgs (El. 5010 to 5020 ft msl) (Figure 4b), except in the vicinity of the Geronimo Seepage Intercept system. During the CPT Investigation CPT-19 and CPT-27 exhibited artesian conditions (Figure 4b), and historically F-111 and W-123 have very shallow depths to water (Figure 2b). This suggests there are semi-confined aquifer conditions in this area and may be specifically associated with the zone of coarser material at base of alluvium. This zone may be one of the predominant pathways for seepage transport. As a result, the phreatic surface locations should be considered potentiometric surface locations and most likely do not represent the water table in the alluvium but the potential head at the depth the measurement was recorded.

Based on these observations, Wood recommends installing additional monitoring/extraction wells in the vicinity of the Geronimo Seepage Intercept system that target the areas where artesian conditions occurred and potentially thicker zones of gravelly alluvium. These wells should be installed to perform aquifer testing and evaluate hydraulic conductivities and potential recovery. The advancement of the boreholes for the wells should be performed with a drilling method that allows field staff to observe an intact almost continuous soil profile, as much as practical, to be able to record potentially discrete bedding layers,

changes in saturation, and contact with competent Moqui. The borehole should be advanced into Moqui until such depth the Moqui is dry.

5.0 REFERENCES

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TABLES

Table 1
Cone Penetration Testing Summary

CPT ID	Date	Latitude¹	Longitude¹	Final Depth (ft)	Surface Elevation² (ft)
CPT-01	15-Jul-2020	34.932162	-110.271725	6.2	5,049.0
CPT-03	15-Jul-2020	34.931641	-110.271208	7.6	5,042.0
CPT-05	15-Jul-2020	34.931050	-110.270578	10.1	5,037.4
CPT-07	15-Jul-2020	34.930619	-110.270080	19.3	5,036.1
CPT-08	15-Jul-2020	34.930425	-110.269834	20.7	5,035.2
CPT-09	15-Jul-2020	34.930224	-110.269621	32.5	5,035.0
CPT-10	15-Jul-2020	34.930091	-110.269468	35.8	5,035.4
CPT-11	15-Jul-2020	34.929756	-110.269168	23.1	5,035.7
CPT-12	16-Jul-2020	34.929575	-110.268996	22.8	5,034.8
CPT-13	16-Jul-2020	34.929371	-110.268696	35.6	5,034.8
CPT-14	16-Jul-2020	34.929196	-110.268458	49.5	5,034.5
CPT-15	16-Jul-2020	34.929053	-110.268442	47.0	5,034.5
CPT-16	14-Jul-2020	34.929038	-110.268309	53.1	5,034.9
CPT-17	14-Jul-2020	34.928893	-110.268168	52.7	5,035.2
CPT-18	14-Jul-2020	34.928743	-110.267951	52.1	5,034.0
CPT-19	14-Jul-2020	34.928568	-110.267736	51.0	5,034.1
CPT-20	13-Jul-2020	34.928437	-110.267551	52.7	5,035.3
CPT-21	13-Jul-2020	34.928272	-110.267246	47.2	5,035.9
CPT-22	13-Jul-2020	34.928016	-110.266925	9.9	5,040.4
CPT-23	16-Jul-2020	34.928670	-110.267932	42.5	5,033.1
CPT-24	19-Jul-2020	34.929637	-110.269138	25.3	5,035.1
CPT-25	20-Jul-2020	34.928437	-110.267658	50.7	5,034.1
CPT-26	20-Jul-2020	34.928306	-110.267504	51.8	5,034.7
CPT-27	20-Jul-2020	34.928146	-110.267118	20.3	5,037.0

Notes:

1. The coordinates are based on the WGS84 Datum and have an accuracy of ± 30 feet.
 2. Elevations are referenced to the ground surface and were surveyed by APS for the recorded coordinates
- ft = feet

Table 2
Pore Pressure Dissipation Test Summary

CPT ID	Test Depth (ft)	Test Duration (minutes)	Minimum Pore Pressure (ft)	Maximum Pore Pressure (ft)	Final Pore Pressure (ft)	Ground Surface Elevation (ft)	Phreatic Surface Elevation¹ (ft)	Phreatic Surface² Depth (ft)
CPT-01	6.2	4.8	-6.7	-0.4	0.0	5049.0	N/A	N/A
CPT-05	9.7	16.4	-15.1	1.6	1.5	5037.4	5029.2	8.2
CPT-07	16.4	8.0	-11.4	0.5	0.4	5036.1	5020.1	16.0
CPT-08	16.7	8.0	-16.4	1.1	0.7	5035.2	5019.2	16.0
CPT-09	20.9	15.5	-18.5	2.1	1.9	5035.0	5016.0	19.0
CPT-09	30.0	5.0	-17.3	11.2	11.1	5035.0	5016.1	18.9
CPT-10	17.6	29.7	2.6	8.3	2.6	5035.4	5020.4	15.0
CPT-10	28.7	6.2	-21.7	9.2	9.2	5035.4	5015.9	19.5
CPT-11	17.2	6.0	-7.2	1.1	1.0	5035.7	5019.5	16.2
CPT-12	19.6	28.4	-12.2	3.1	3.1	5034.8	5018.3	16.5
CPT-13	33.9	11.0	-12.0	-7.0	0.0	5034.8	N/A	N/A
CPT-14	15.7	4.3	0.0	0.4	0.2	5034.5	5019.0	15.5
CPT-14	39.9	8.3	15.8	20.3	20.1	5034.5	5014.7	19.8
CPT-14	49.5	32.4	-6.3	38.5	29.0	5034.5	5014.0	20.5
CPT-15	46.3	11.3	3.8	23.8	23.7	5034.5	5011.9	22.6
CPT-16	16.0	6.7	2.6	4.5	4.3	5034.9	5023.2	11.7
CPT-16	48.3	8.3	-9.6	25.7	25.6	5034.9	5012.2	22.7
CPT-17	44.6	30.5	31.3	66.2	31.4	5035.2	5022.0	13.2
CPT-18	4.2	4.7	-3.3	-0.1	-0.3	5034.0	5029.5	4.5
CPT-18	12.6	5.0	-0.5	0.3	0.1	5034.0	5021.5	12.5
CPT-18	17.2	8.4	-1.1	1.9	0.1	5034.0	5016.9	17.1
CPT-18	38.9	31.3	19.0	139.0	19.0	5034.0	5014.1	19.9
CPT-18	42.2	5.0	16.6	22.8	21.8	5034.0	5013.6	20.4
CPT-19	4.0	16.7	3.3	9.8	3.3	5034.1	5033.4	0.7

Table 2
Pore Pressure Dissipation Test Summary

CPT ID	Test Depth (ft)	Test Duration (minutes)	Minimum Pore Pressure (ft)	Maximum Pore Pressure (ft)	Final Pore Pressure (ft)	Ground Surface Elevation (ft)	Phreatic Surface Elevation¹ (ft)	Phreatic Surface² Depth (ft)
CPT-19	22.4	30.0	24.7	116.1	24.7	5034.1	5036.4	-2.3
CPT-19	50.2	15.1	-2.8	64.2	28.4	5034.1	5012.3	21.8
CPT-20	12.2	11.0	39.1	52.2	39.1	5035.3	5062.2	-26.9
CPT-20	22.1	31.5	32.4	62.2	32.4	5035.3	5045.6	-10.3
CPT-20	41.7	16.3	26.7	151.0	26.8	5035.3	5020.4	14.9
CPT-20	43.7	6.7	14.7	22.2	21.8	5035.3	5013.4	21.9
CPT-21	6.9	30.0	5.8	31.5	5.9	5035.9	5034.9	1.0
CPT-21	35.4	20.0	27.9	140.3	27.9	5035.9	5028.4	7.5
CPT-21	42.9	6.7	7.9	20.3	20.2	5035.9	5013.2	22.7
CPT-21	47.2	4.7	-3.7	1.1	0.7	5035.9	4989.4	46.5
CPT-22	9.9	20.0	-13.5	6.1	6.0	5040.4	5036.5	3.9
CPT-23	4.9	14.3	6.3	23.4	10.7	5033.1	5038.9	-5.8
CPT-23	14.0	16.2	-1.5	1.4	1.3	5033.1	5020.4	12.7
CPT-23	40.4	4.2	19.8	20.8	20.6	5033.1	5013.3	19.8
CPT-23	42.5	4.2	22.3	25.4	22.6	5033.1	5013.2	19.9
CPT-24	19.6	15.0	5.0	13.4	6.6	5035.1	5022.1	13.0
CPT-24	24.1	20.0	-20.3	7.7	7.7	5035.1	5018.7	16.4
CPT-25	30.9	30.8	-4.7	93.9	24.0	5034.1	5027.2	6.9
CPT-26	41.3	15.0	15.6	20.9	20.0	5034.7	5013.4	21.3
CPT-27	18.5	8.3	-5.4	20.5	20.5	5037.0	5039.0	-2.0
CPT-27	20.3	11.5	-21.0	-4.3	-4.3	5037.0	5012.4	24.6

Notes

1. Elevations are referenced from the ground surface and were surveyed by APS for the recorded coordinates

2. Phreatic Surface is calculated from the Pore Pressure Dissipation Tests

ft = feet

Table 3
Piezometer Installation Summary

Piezometer ID	VWP-14	VWP-17	VWP-18	VWP-19	VWP-20	VWP-21	VWP-24	VWP-25	VWP-26	VWP-27
Location (Adjacent CPT)	CPT-14	CPT-17	CPT-18	CPT-19	CPT-20	CPT-21	CPT-24	CPT-25	CPT-26	CPT-27
Piezometer Serial No.	2025763	2025758	2025760	2025759	2025757	2025764	2025756	2025761	2025754	2025762
Installation Date	17-Jul-2020	17-Jul-2020	17-Jul-2020	17-Jul-2020	17-Jul-2020	17-Jul-2020	21-Jul-2020	20-Jul-2020	20-Jul-2020	21-Jul-2020
Ground Surface Elevation ¹ (feet)	5034.5	5035.2	5034.0	5034.1	5035.3	5035.9	5035.1	5034.1	5034.7	5037.0
Tip Depth (feet)	45.0	49.0	43.0	50.0	50.0	44.0	26.5	50.5	51.6	20.8
Tip Elevation (feet)	4989.5	4986.2	4991.0	4984.1	4985.3	4991.9	5008.6	4983.6	4983.1	5016.2
Phreatic Surface Depth ² (feet)	14.4	17.3	25.5	-23.2	16.9	18.2	10.5	14.4	16.1	-8.4
Initial Reading on 7/18/20 Elevation (feet)	5021.3	5019.1	5009.6	5021.3	5019.6	5018.8	5025.1	5021.0	5020.1	5046.0
Initial Reading on 7/18/20 (head of feet)	31.8	32.9	18.6	37.2	34.3	26.9	16.5	37.4	37.0	29.9
Reading on 8/13/20 Elevation (feet)	5020.9	5018.6	5009.3	5058.2	5019.2	5018.4	5024.8	5020.5	5019.4	5045.6
Reading on 8/13/20 (head of feet)	31.4	32.4	18.3	74.1	33.9	26.5	16.2	36.9	36.3	29.5
Reading on 8/27/20 Elevation (feet)	5020.4	5018.2	5008.8	5057.6	5018.6	5017.3	5024.5	5020.0	5018.8	5045.6
Reading on 8/27/20 (head of feet)	30.9	32.0	17.8	73.5	33.3	25.4	15.9	36.4	35.7	29.5
Reading on 9/17/20 Elevation (feet)	5020.4	5018.2	5008.8	5057.6	5018.7	5017.9	5024.7	5019.9	5018.9	5046.6
Reading on 9/17/20 (head of feet)	30.9	32.0	17.8	73.5	33.4	26.0	16.1	36.3	35.8	30.5
Reading on 10/20/20 Elevation (feet)	5020.1	5017.9	5008.5	5057.3	5018.4	5017.7	5024.6	5019.7	5018.6	5045.3
Reading on 10/20/20 (head of feet)	30.6	31.7	17.5	73.2	33.1	25.8	16.0	36.1	35.5	29.2
Initial to Current (change in feet)	-1.2	-1.2	-1.1	36.0	-1.2	-1.1	-0.5	-1.3	-1.5	-0.7

Notes

- 1. Elevations are referenced to the ground surface and were surveyed by APS for the recorded coordinates
- 2. Phreatic Surface is calculated from the piezometer readings

Table 4
Analytical Results for Groundwater Samples

Sample Location			CPT-14	CPT-17	CPT-18	CPT-19	CPT-20	Sump-C	Sump-D
Sample ID			CH-CPT-14-0720-43	CH-CPT-17-0720-48	CH-CPT-18-0720-43	CH-CPT-19-0720-50	CH-CPT-20-0720-45	CH-SUMP-1-0720-5	CH-SUMP-2-0720-6
Analyte	Units	GWPS	7/19/2020	7/18/2020	7/18/2020	7/18/2020	7/19/2020	7/21/2020	7/21/2020
Arsenic	mg/L	0.01	0.0084	0.140	0.026	0.017	0.049	<0.005	<0.005
Cobalt	mg/L	0.006	0.025	0.160	0.041	0.045	0.220	<0.005	<0.005
Fluoride	mg/L	4.0	1.60	1.80	1.80	1.70	2.00	8.10	8.20
Lithium	mg/L	0.31	0.75	0.82	0.74	0.74	1.50	1.10	1.10
Molybdenum	mg/L	0.10	0.056	0.048	0.077	0.040	0.031	0.041	0.120
TDS	mg/L	---	14,000	9,800	11,000	11,000	11,000	20,000	19,000

Notes:

1. Concentrations exceeding respective Groundwater Protection Standards are bolded

2. GWPS - Groundwater Protection Standard

mg/L = milligrams per liter

TDS = Total Dissolved Solids

Table 5
Hydro-Punch Groundwater Summary

CPT Location	Sample ID	Sampling Depth ¹ (ft)	Sample Elevation ² (ft)	Sampling Date	Sampling Time	Sampling Duration (min)	Approx. Volume Collected (mL)	Comments ³
CPT-13	N/A	33.8	5001.2	July 19, 2020	11:15	18	0	Clay or weathered bedrock. No flow, no gravel at this location
CPT-14	CH-CPT-14-0720-43	42.8	4992.2	July 19, 2020	10:30	15	470	Gravel layer
CPT-15	N/A	48.4	4986.6	July 19, 2020	9:30	18	0	Possible weathered bedrock. No gravel layer, pushed 2.4 ft past CPT refusal depth
CPT-16	N/A	48.9	4986.1	July 19, 2020	8:15	0	0	Rods bent by fill at surface, hydropunch lost, no sample collected
CPT-16	N/A	50.0	4985.0	July 18, 2020	15:30	10	0	Possible Clay. No flow.
CPT-17	CH-CPT-17-0720-48	47.5	4987.5	July 18, 2020	14:45	13	440	Gravel layer
CPT-18	CH-CPT-18-0720-43	43.0	4991.0	July 18, 2020	13:45	14	450	Gravel layer
CPT-19	CH-CPT-19-0720-50	49.3	4984.7	July 18, 2020	12:45	19	440	Gravel layer
CPT-20	CH-CPT-20-0720-45	44.9	4990.1	July 19, 2020	14:00	14	440	Gravel layer
CPT-21	N/A	44.0	4992.0	July 19, 2020	12:00	19	0	Possible clayey gravel. Very little flow
CPT-21	N/A	42.7	4993.3	July 19, 2020	13:00	35	0	Possible clayey gravel. Very little flow

Notes

1. Depths of samples are referenced from the ground surface
2. Elevations are referenced from the ground surface and were surveyed by APS for recorded coordinates
3. Comments are taken from the driller about the material being sampled from

ft = feet

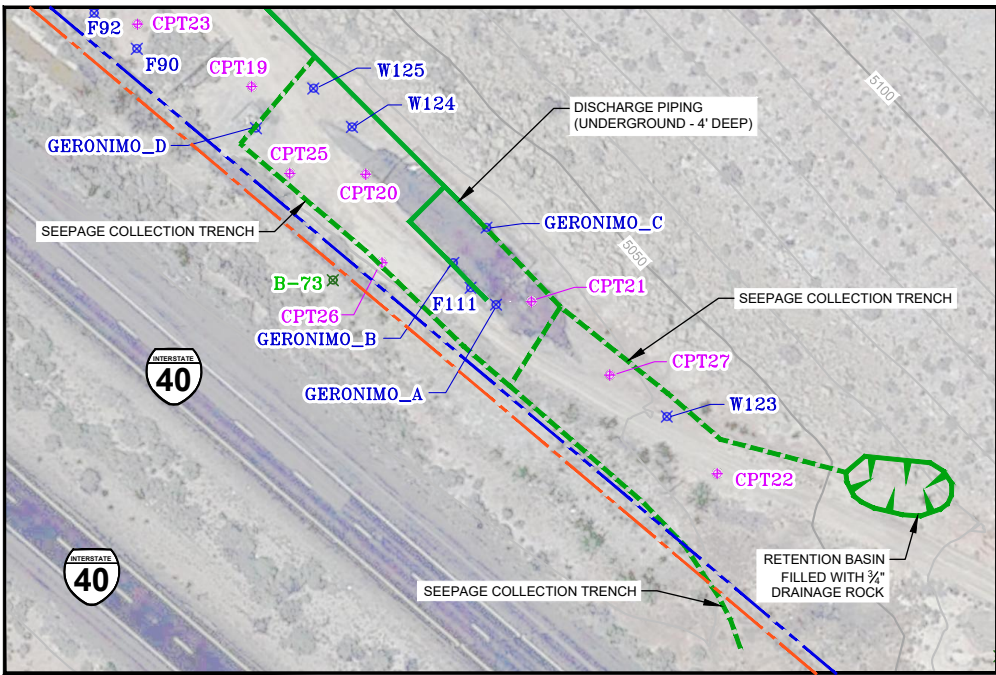
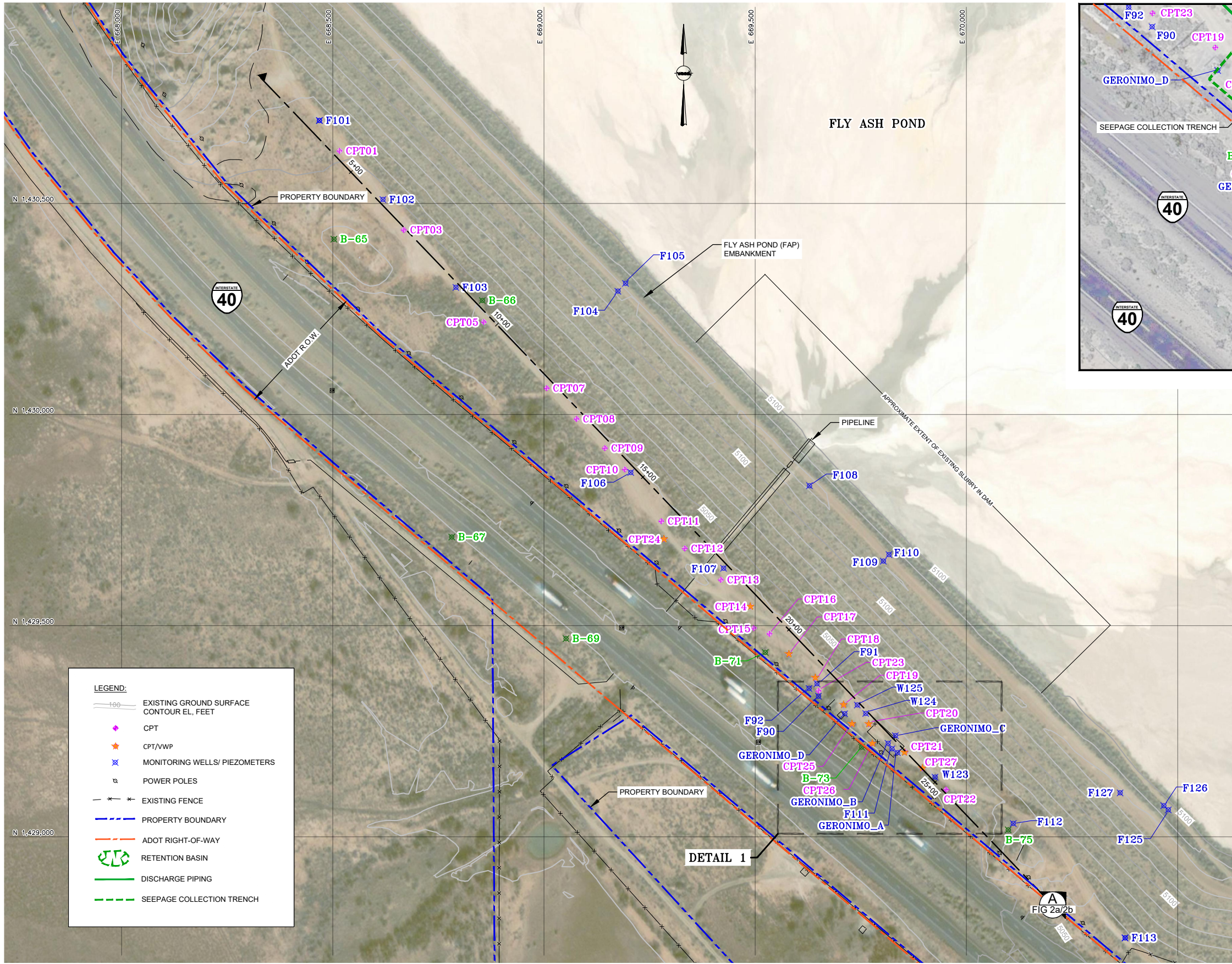
min = minutes

mL = milliliter

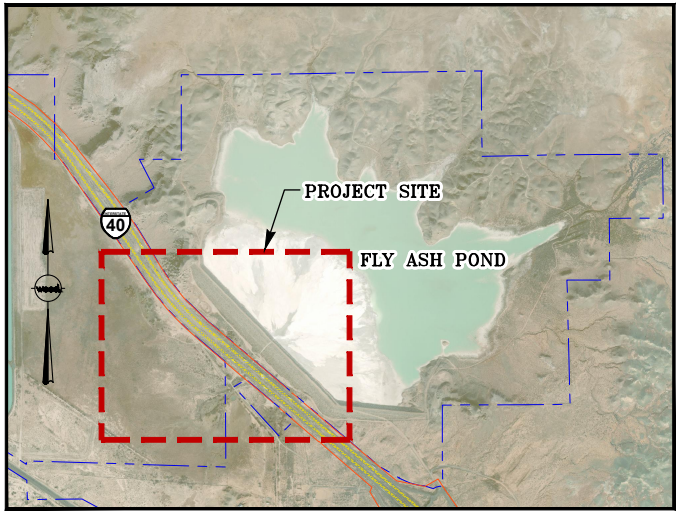
N/A = not analyzed

FIGURES


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DETAIL 1
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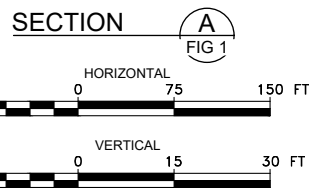
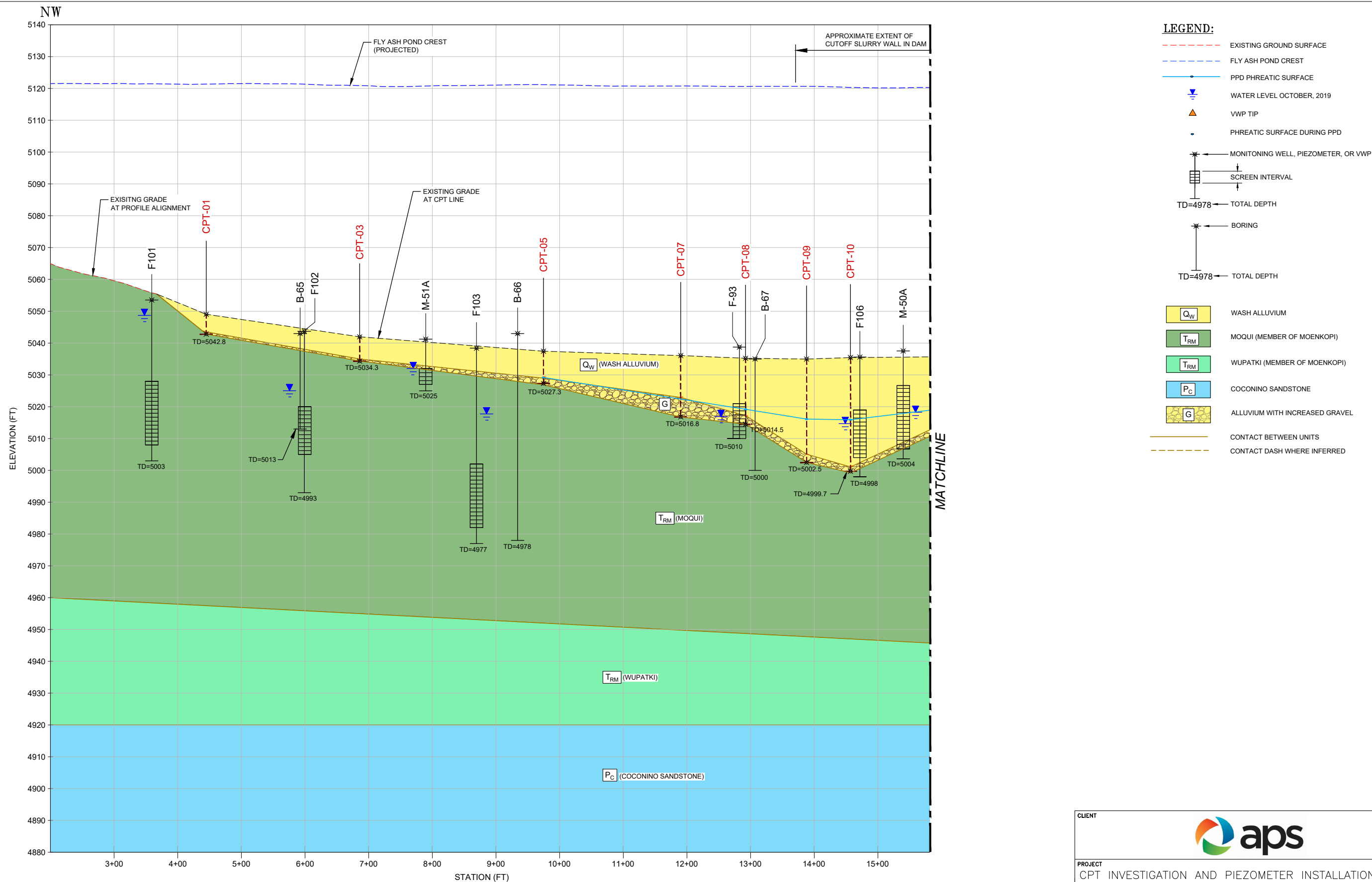
KEY MAP
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CLIENT			
PROJECT		CPT INVESTIGATION AND PIEZOMETER INSTALLATION AT FAP	
TITLE		FAP SITE PLAN	
DESIGNED BY	RM	CHECKED BY	MH
DRAWN BY	PM	APPROVED BY	MH
FILENAME		FIGURE No.	REV
2040-CPT_Opt		1	0
		PROJECT NO.	14-2018-2040

wood.

0	1/22/2021	MH	PM
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PM

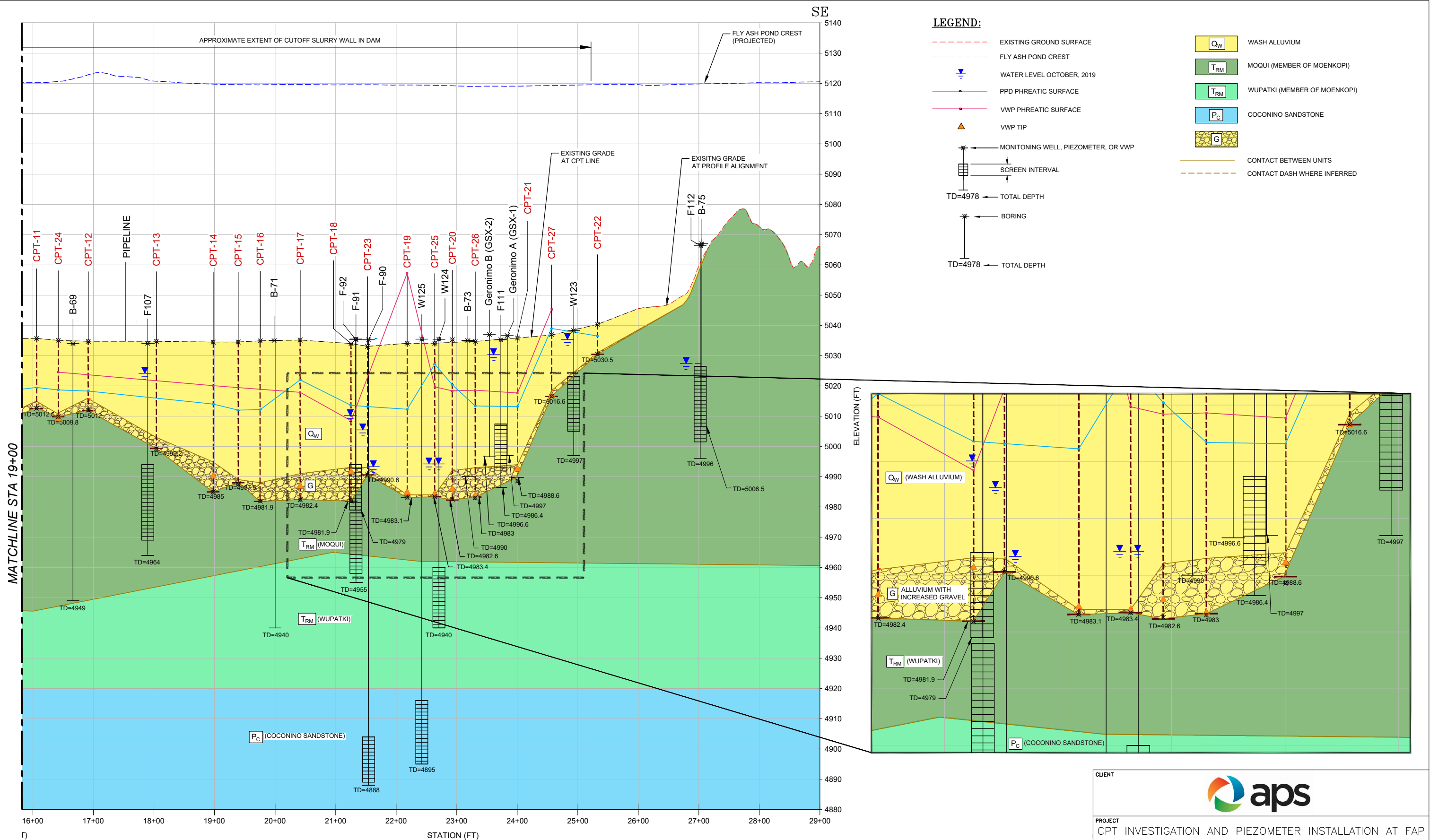
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CLIENT				
				
PROJECT				
CPT INVESTIGATION AND PIEZOMETER INSTALLATION AT FAP				
TITLE				
FAP DOWNSTREAM TOE PROFILE 1 OF 2				
DESIGNED BY	MH	CHECKED BY	MH	ISSUED FOR
DRAWN BY	OAS	APPROVED BY	TJF	FINAL
FILENAME		FIGURE No.	REV	PROJECT NO.
Fig.02a_Opt		2a	0	14-2018-2040

wood.

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CLIENT				
				
PROJECT				
CPT INVESTIGATION AND PIEZOMETER INSTALLATION AT FAP				
TITLE				
FAP DOWNSTREAM TOE PROFILE 2 OF 2				
DESIGNED BY	MH	CHECKED BY	MH	ISSUED FOR
DRAWN BY	OAS	APPROVED BY	TJF	FINAL
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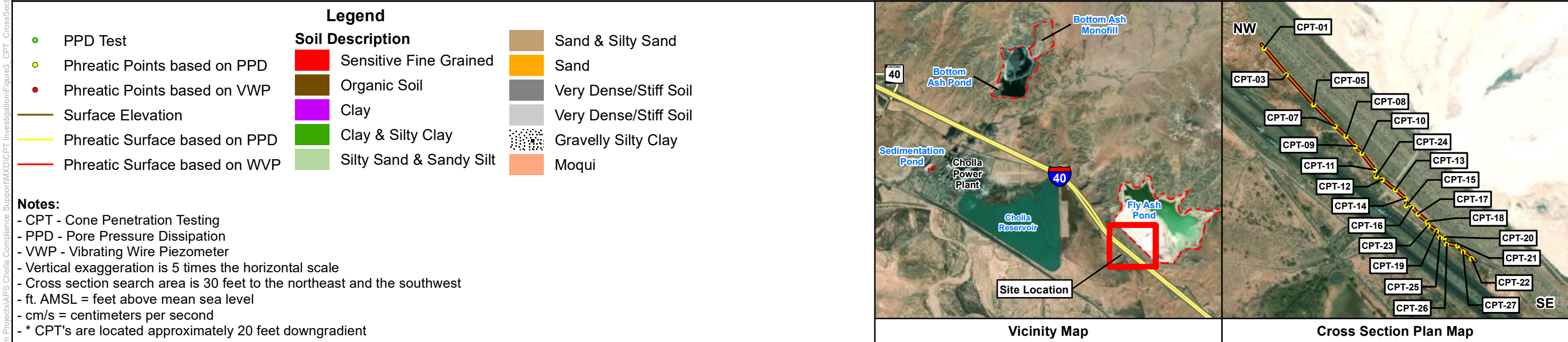
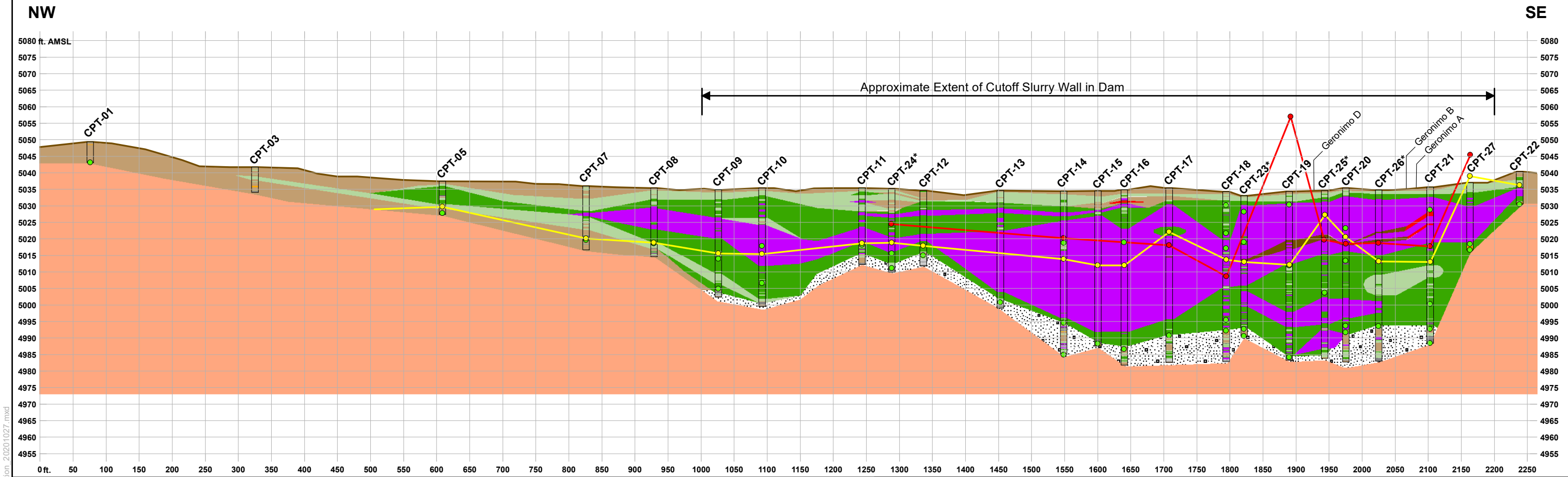
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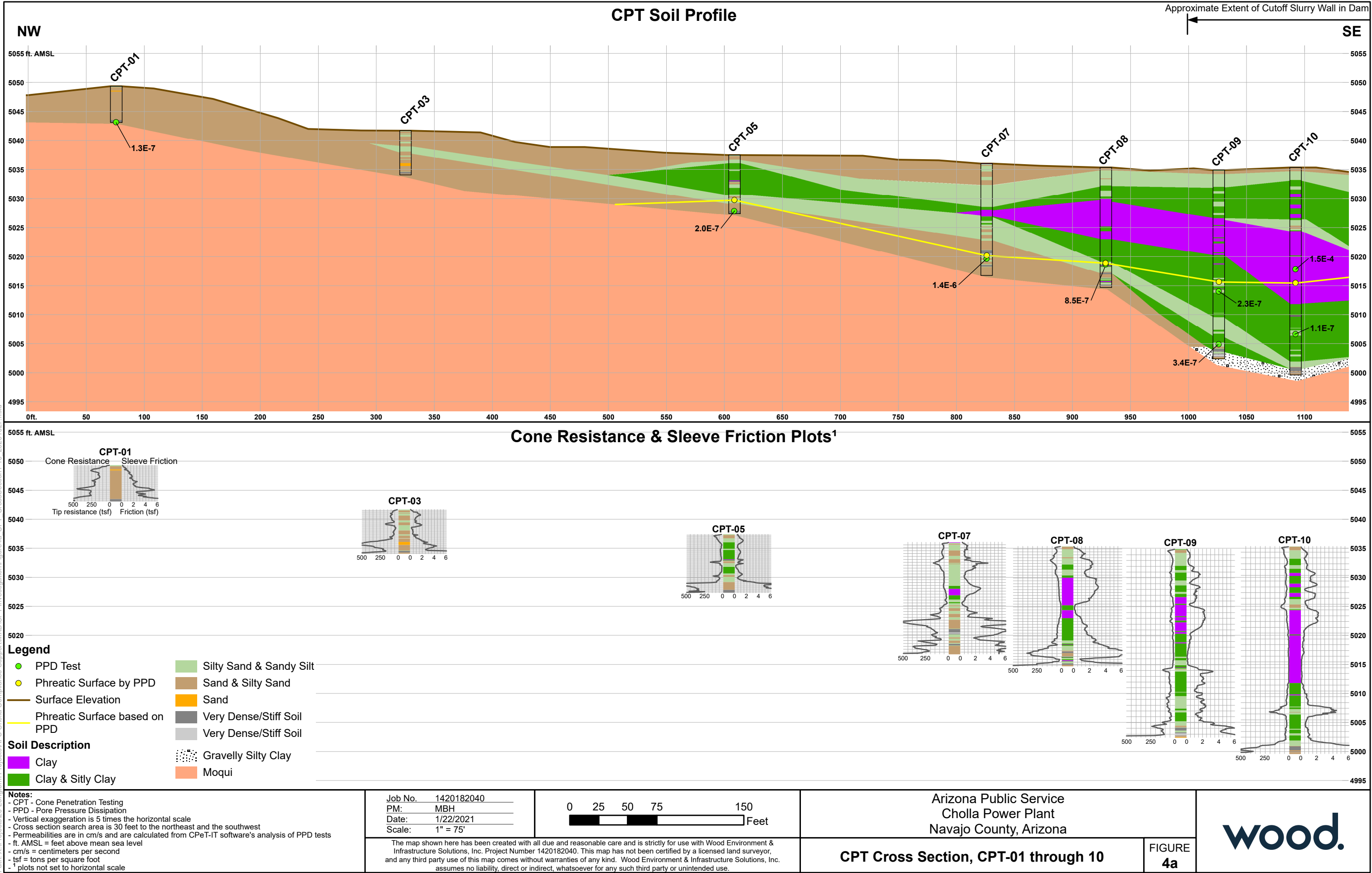
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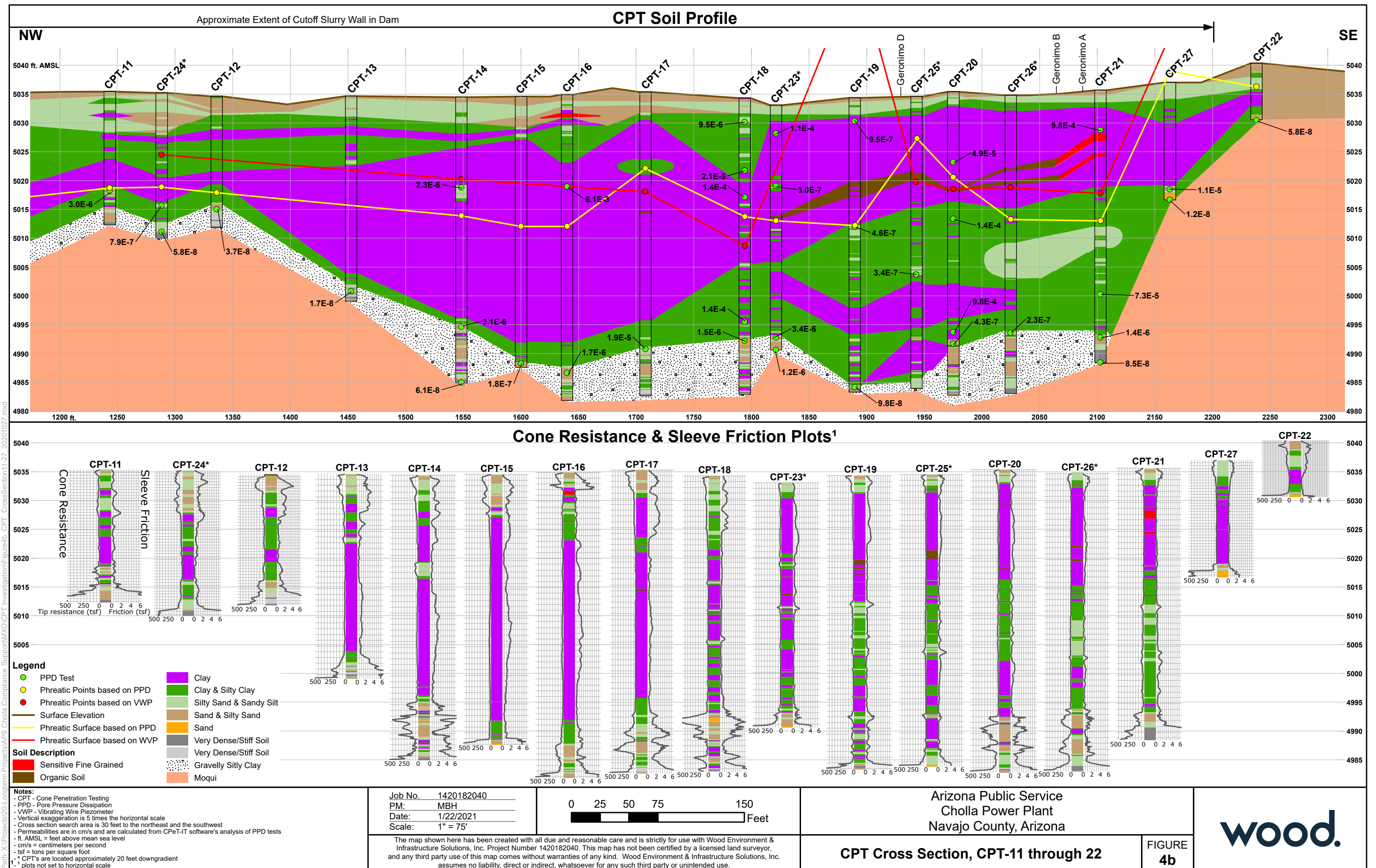
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CPT Soil Profile







ATTACHMENT A - CPT STANDARD PLOTS

PRESENTATION OF SITE INVESTIGATION RESULTS

Cholla Power Plant

Prepared for:

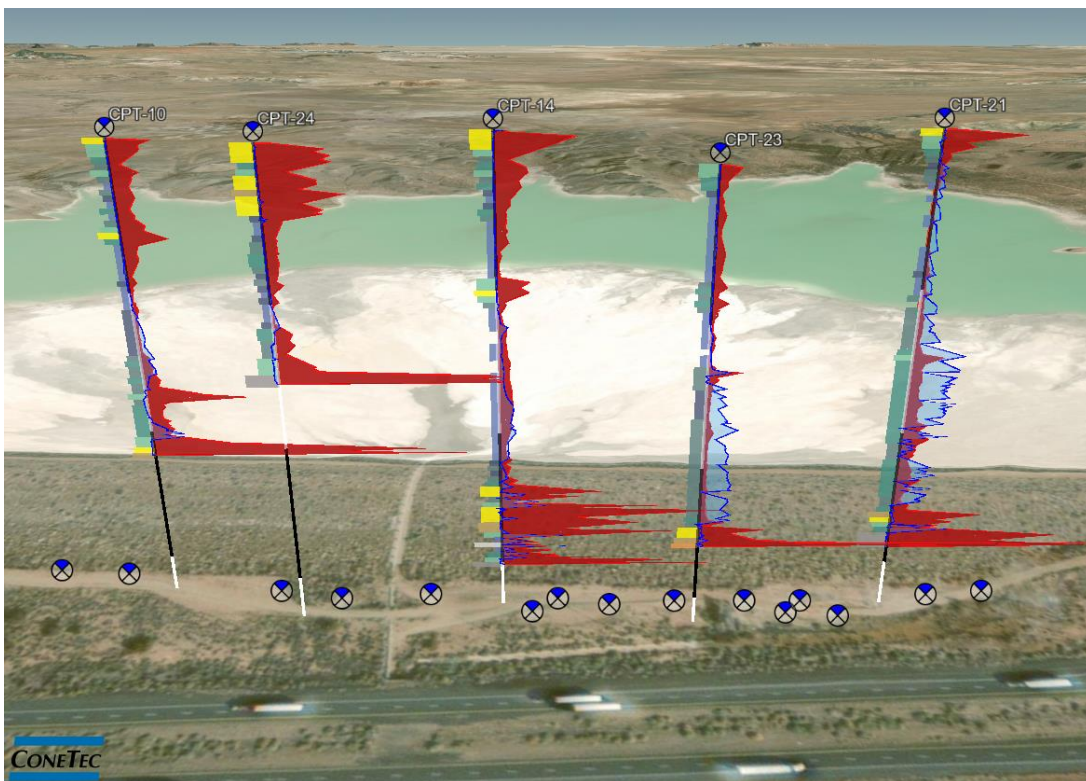
Wood plc

ConeTec Job No: 20-52-21054

Project Start Date: 12-Jul-2020

Project End Date: 22-Jul-2020

Report Date: 01-Aug-2020



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Introduction

The enclosed report presents the results of the site investigation program conducted by ConeTec, Inc. for Wood plc of Phoenix, Arizona. The program consisted of cone penetration testing (CPTu) at twenty-four (24) locations. Compression and shear waves velocities were recorded in all the soundings. Vibrating wire piezometers (VWP) were installed at ten (10) locations. Additionally, groundwater sampling (GWS) was performed at nine (9) locations. The phreatic surface used in the CPT interpretations is based on a linear interpolation between dissipation tests and is shown as an orange line on the CPT plots.

Project Information

Project	
Client	Wood plc
Project	Cholla Power Plant
ConeTec Project #	20-52-21054

A map from Google Earth including the CPTu test locations is presented below.



Rig Description	Deployment System	Test Type
CPT truck rig (C-7A)	25-ton truck mounted cylinder	SCPTu/VWP/GWS

Coordinates		
Test Type	Collection Method	EPSG Number
SCPTu/VWP/GWS	USB/Serial GPS	4326 (WGS 84 / LatLong)

Cone Penetration Test (CPTu)	
Depth reference	Existing ground surface at the time of each test.
Tip and sleeve data offset	0.1 meter This has been accounted for in the CPT data files
Resistivity module offset	0.85 Meter This has been accounted for in the CPT data files.
Seismic calculations	Poisson's ratio (ν) was calculated from the shear wave (V_s) and compression wave (V_p) velocities using the following equation: $\nu = \frac{(V_p/V_s)^2 - 2}{2((V_p/V_s)^2 - 1)}$
Additional plots	Expanded range standard, advanced, normalized, seismic plots, seismic results table, seismic wave traces, and soil behavior type (SBT) scatter plots are included in the data release package.
Additional Comments	None

Cone Penetrometers Used for this Project						
Cone Description	Cone Number	Cross Sectional Area (cm ²)	Sleeve Area (cm ²)	Tip Capacity (bar)	Sleeve Capacity (bar)	Pore Pressure Capacity (psi)
552:T1500F15U500	552	15	225	1500	15	500
657:T1500F15U500	657	15	225	1500	15	500
The CPT summary shows the cone used on each sounding.						

Adjustments to the SBT-Q _{tn} Chart (Robertson, 2009)					
Original SBT-Q _{tn} Settings			Revised SBT-Q _{tn} Settings		
Zone	Unit Weight (kN/m ³)	Zone Text	Zone	Unit Weight (kN/m ³)	Zone Text
0	18.64	Undefined	0	17.50	Undefined
1	17.50	Sensitive Fines	1	17.50	Fines
2	12.50	Organic Soils	2	17.50	Fines

Calculated Geotechnical Parameter Tables	
Additional information	<p>The Normalized Soil Behavior Type Chart based on Q_{tn} (SBT Q_{tn}) (Robertson, 2009) was used to classify the soil for this project. A detailed set of calculated CPT parameters have been generated and are provided in Excel format files in the release folder. The CPT parameter calculations are based on values of corrected tip resistance (q_t), sleeve friction (f_s), and pore pressure (u_2). Effective stresses are calculated based on unit weights that have been assigned to the individual soil behavior type zones and the assumed equilibrium pore pressure profile.</p> <p>Effective stresses are calculated based on unit weights that have been assigned to the individual soil behaviour type zones and the assumed equilibrium pore pressure profile.</p> <p>Soils were classified as either drained or undrained based on the Q_{tn} Normalized Soil Behaviour Type Chart (Robertson, 2009). Calculations for both drained and undrained parameters were included for materials that classified as silt mixtures (zone 4).</p> <p>Equilibrium pore pressure profiles generated from the pore pressure dissipation data were used for the calculated parameters. Based on the dynamic pore pressure response, hydrostatic conditions were assumed after the last equilibrium pore pressure point. The equilibrium pore pressure profile points and profile line, as well as the hydrostatic line are plotted on the dynamic pore pressure for comparison.</p>

Limitations

This report has been prepared for the exclusive use of Wood plc (Client) for the project titled “Cholla Power Plant”. The report’s contents may not be relied upon by any other party without the express written permission of ConeTec, Inc. (ConeTec). ConeTec has provided site investigation services, prepared the factual data reporting, and provided geotechnical parameter calculations consistent with current best practices. No other warranty, expressed or implied, is made.

The information presented in the report document and the accompanying data set pertain to the specific project, site conditions and objectives described to ConeTec by the Client. In order to properly understand the factual data, assumptions and calculations, reference must be made to the documents provided and their accompanying data sets, in their entirety.

Cone penetration tests (CPTu) are conducted using an integrated electronic piezocone penetrometer and data acquisition system manufactured by Adara Systems Ltd., a subsidiary of ConeTec.

ConeTec's piezocone penetrometers are compression type designs in which the tip and friction sleeve load cells are independent and have separate load capacities. The piezocones use strain gauged load cells for tip and sleeve friction and a strain gauged diaphragm type transducer for recording pore pressure. The piezocones also have a platinum resistive temperature device (RTD) for monitoring the temperature of the sensors, an accelerometer type dual axis inclinometer and a geophone sensor for recording seismic signals. All signals are amplified down hole within the cone body and the analog signals are sent to the surface through a shielded cable.

ConeTec penetrometers are manufactured with various tip, friction and pore pressure capacities in 5 cm², 10 cm² and 15 cm² tip base area configurations in order to maximize signal resolution for various soil conditions. The specific piezocone used for each test is described in the CPT summary table presented in the first appendix. The 15 cm² penetrometers do not require friction reducers as they have a diameter larger than the deployment rods. The 10 cm² piezocones use a friction reducer consisting of a rod adapter extension behind the main cone body with an enlarged cross-sectional area (typically forty-four millimeter diameter over a length of thirty-two millimeter with tapered leading and trailing edges) located at a distance of 585 millimeters above the cone tip.

The penetrometers are designed with equal end area friction sleeves, a net end area ratio of 0.8 and cone tips with a sixty-degree apex angle.

All ConeTec piezocones can record pore pressure at various locations. Unless otherwise noted, the pore pressure filter is located directly behind the cone tip in the "u₂" position ([ASTM Type 2](#)). The filter is six millimeters thick, made of porous plastic (polyethylene) having an average pore size of 125 microns (90-160 microns). The function of the filter is to allow rapid movements of extremely small volumes of water needed to activate the pressure transducer while preventing soil ingress or blockage.

The piezocone penetrometers are manufactured with dimensions, tolerances and sensor characteristics that are in general accordance with the current [ASTM D5778](#) standard. ConeTec's calibration criteria also meets or exceeds those of the current [ASTM D5778](#) standard. An illustration of the piezocone penetrometer is presented in [Figure CPTu](#).

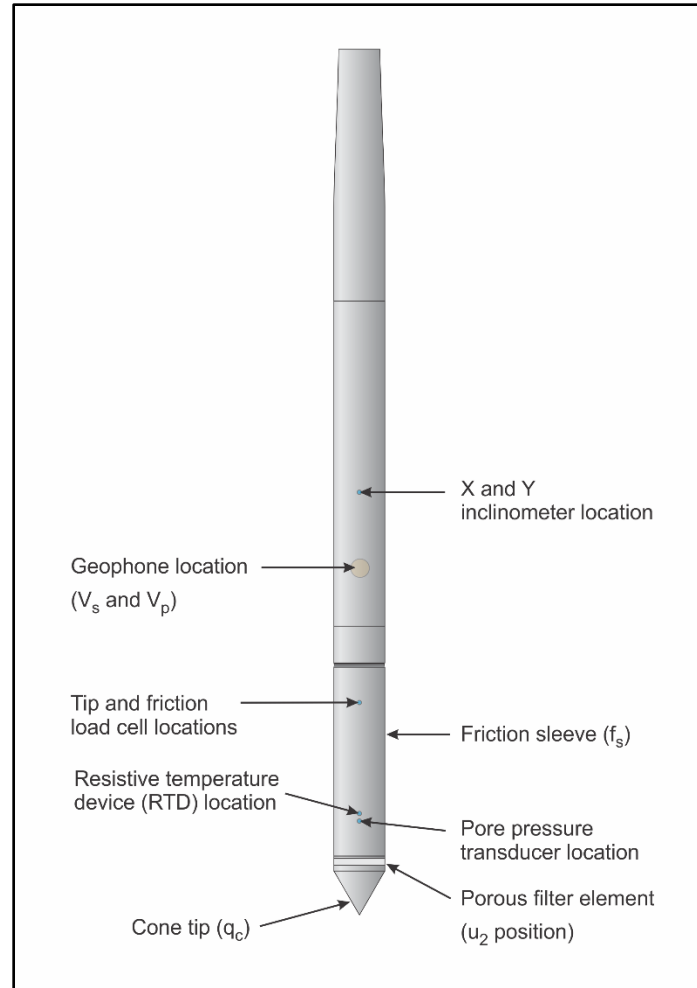


Figure CPTu. Piezocone Penetrometer (15 cm²)

The ConeTec data acquisition systems consist of a Windows based computer and a signal conditioner and power supply interface box with a sixteen bit (or greater) analog to digital (A/D) converter. The data is recorded at fixed depth increments using a depth wheel attached to the push cylinders or by using a spring loaded rubber depth wheel that is held against the cone rods. The typical recording interval is 2.5 centimeters; custom recording intervals are possible. The system displays the CPTu data in real time and records the following parameters to a storage media during penetration:

- Depth
- Uncorrected tip resistance (q_c)
- Sleeve friction (f_s)
- Dynamic pore pressure (u)
- Additional sensors such as resistivity, passive gamma, ultra violet induced fluorescence, if applicable

All testing is performed in accordance to ConeTec's CPT operating procedures which are in general accordance with the current [ASTM D5778](#) standard.

Prior to the start of a CPTu sounding a suitable cone is selected, the cone and data acquisition system are powered on, the pore pressure system is saturated with silicone oil and the baseline readings are recorded with the cone hanging freely in a vertical position.

The CPTu is conducted at a steady rate of two centimeters per second, within acceptable tolerances. Typically, one-meter length rods with an outer diameter of 1.5 inches (38.1 millimeters) are added to advance the cone to the sounding termination depth. After cone retraction final baselines are recorded.

Additional information pertaining to ConeTec's cone penetration testing procedures:

- Each filter is saturated in silicone oil under vacuum pressure prior to use
- Recorded baselines are checked with an independent multi-meter
- Baseline readings are compared to previous readings
- Soundings are terminated at the client's target depth or at a depth where an obstruction is encountered, excessive rod flex occurs, excessive inclination occurs, equipment damage is likely to take place, or a dangerous working environment arises
- Differences between initial and final baselines are calculated to ensure zero load offsets have not occurred and to ensure compliance with [ASTM](#) standards

The interpretation of piezocone data for this report is based on the corrected tip resistance (q_t), sleeve friction (f_s) and pore water pressure (u). The interpretation of soil type is based on the correlations developed by [Robertson et al. \(1986\)](#) and Robertson (1990, 2009). It should be noted that it is not always possible to accurately identify a soil behavior type based on these parameters. In these situations, experience, judgment and an assessment of other parameters may be used to infer soil behavior type.

The recorded tip resistance (q_c) is the total force acting on the piezocone tip divided by its base area. The tip resistance is corrected for pore pressure effects and termed corrected tip resistance (q_t) according to the following expression presented in [Robertson et al. \(1986\)](#):

$$q_t = q_c + (1-a) \cdot u_2$$

where: q_t is the corrected tip resistance

q_c is the recorded tip resistance

u_2 is the recorded dynamic pore pressure behind the tip (u_2 position)

a is the Net Area Ratio for the piezocone (0.8 for ConeTec probes)

The sleeve friction (f_s) is the frictional force on the sleeve divided by its surface area. As all ConeTec piezocones have equal end area friction sleeves, pore pressure corrections to the sleeve data are not required.

The dynamic pore pressure (u) is a measure of the pore pressures generated during cone penetration. To record equilibrium pore pressure, the penetration must be stopped to allow the dynamic pore pressures to stabilize. The rate at which this occurs is predominantly a function of the permeability of the soil and the diameter of the cone.

The friction ratio (R_f) is a calculated parameter. It is defined as the ratio of sleeve friction to the tip resistance expressed as a percentage. Generally, saturated cohesive soils have low tip resistance, high friction ratios and generate large excess pore water pressures. Cohesionless soils have higher tip resistances, lower friction ratios and do not generate significant excess pore water pressure.

A summary of the CPTu soundings along with test details and individual plots are provided in the appendices. A set of files with calculated geotechnical parameters were generated for each sounding based on published correlations and are provided in Excel format in the data release folder. Information regarding the methods used is also included in the data release folder.

For additional information on CPTu interpretations and calculated geotechnical parameters, refer to [Robertson et al. \(1986\)](#), [Lunne et al. \(1997\)](#), [Robertson \(2009\)](#), [Mayne \(2013, 2014\)](#) and [Mayne and Peuchen \(2012\)](#).

Shear wave velocity (V_s) testing is performed in conjunction with the piezocone penetration test (SCPTu) in order to collect interval velocities. For some projects seismic compression wave velocity (V_p) testing is also performed.

ConeTec's piezocone penetrometers are manufactured with a horizontally active geophone (28 hertz) that is rigidly mounted in the body of the cone penetrometer, 0.2 meters behind the cone tip.

Shear waves are typically generated by using an impact hammer horizontally striking a beam that is held in place by a normal load. In some instances, an auger source or an imbedded impulsive source may be used for both shear waves and compression waves. The hammer and beam act as a contact trigger that initiates the recording of the seismic wave traces. For impulsive devices an accelerometer trigger may be used. The traces are recorded using an uphole integrated digital oscilloscope which is part of the SCPTu data acquisition system. An illustration of the shear wave testing configuration is presented in [Figure SCPTu-1](#).

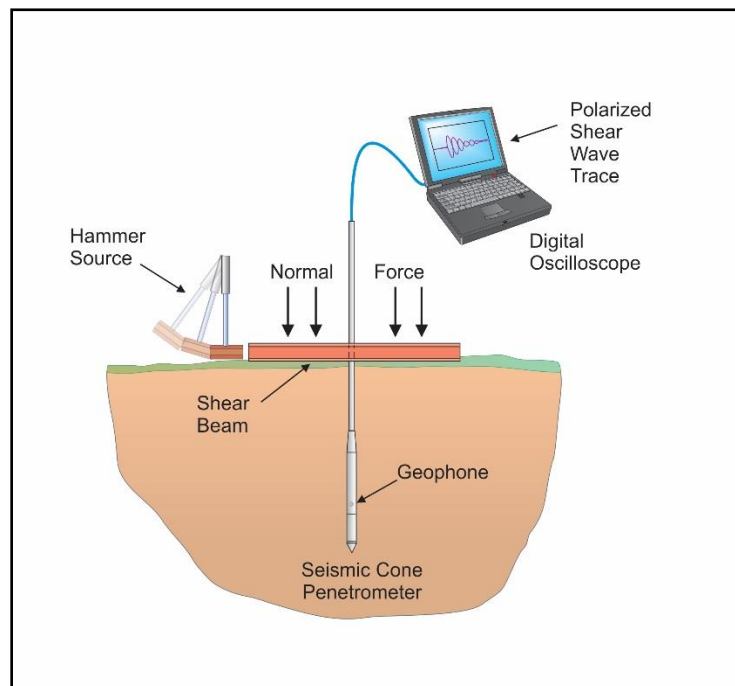


Figure SCPTu-1. Illustration of the SCPTu system

All testing is performed in accordance to ConeTec's SCPTu operating procedures which are in general accordance with the current [ASTM D5778](#) and [ASTM D7400](#) standards.

Prior to the start of a SCPTu sounding, the procedures described in the Cone Penetration Test section are followed. In addition, the active axis of the geophone is aligned parallel to the beam (or source) and the horizontal offset between the cone and the source is measured and recorded.

Prior to recording seismic waves at each test depth, cone penetration is stopped and the rods are decoupled from the rig to avoid transmission of rig energy down the rods. Typically, five wave traces for each orientation are recorded for quality control and uncertainty analysis purposes. After reviewing wave traces for consistency the cone is pushed to the next test depth (typically one meter intervals or as requested by the client). [Figure SCPTu-2](#) presents an illustration of a SCPTu test.

For additional information on seismic cone penetration testing refer to [Robertson et al. \(1986\)](#).

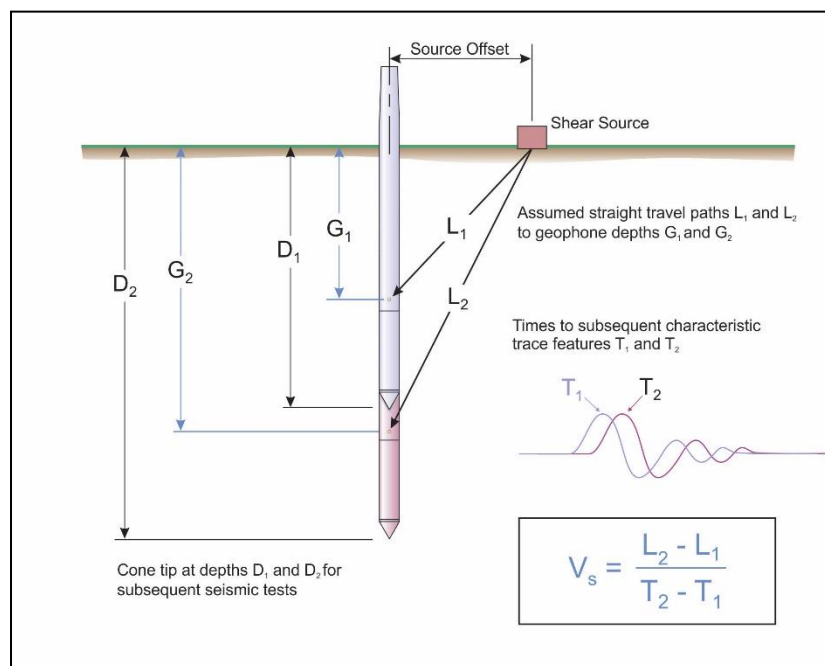


Figure SCPTu-2. Illustration of a seismic cone penetration test

Calculation of the interval velocities are performed by visually picking a common feature (e.g. the first characteristic peak, trough, or crossover) on all of the recorded wave sets and taking the difference in ray path divided by the time difference between subsequent features. Ray path is defined as the straight line distance from the seismic source to the geophone, accounting for beam offset, source depth and geophone offset from the cone tip.

For all SCPTu soundings that have achieved a depth of at least 100 feet (30 meters), the average shear wave velocity to a depth of 100 feet (\bar{v}_s) has been calculated and provided for all applicable soundings using the following equation presented in [ASCE \(2010\)](#).

$$\bar{v}_s = \frac{\sum_{i=1}^n d_i}{\sum_{i=1}^n \frac{d_i}{v_{si}}}$$

where: \bar{v}_s = average shear wave velocity ft/s (m/s)
 d_i = the thickness of any layer between 0 and 100 ft (30 m)
 v_{si} = the shear wave velocity in ft/s (m/s)
 $\sum_{i=1}^n d_i$ = the total thickness of all layers between 0 and 100 ft (30 m)

Average shear wave velocity, \bar{v}_s is also referenced to V_{s100} or V_{s30} .

The layer travel times refers to the travel times propagating in the vertical direction, not the measured travel times from an offset source.

Tabular results and SCPTu plots are presented in the relevant appendix.

The cone penetration test is halted at specific depths to carry out pore pressure dissipation (PPD) tests, shown in [Figure PPD-1](#). For each dissipation test the cone and rods are decoupled from the rig and the data acquisition system measures and records the variation of the pore pressure (u) with time (t).

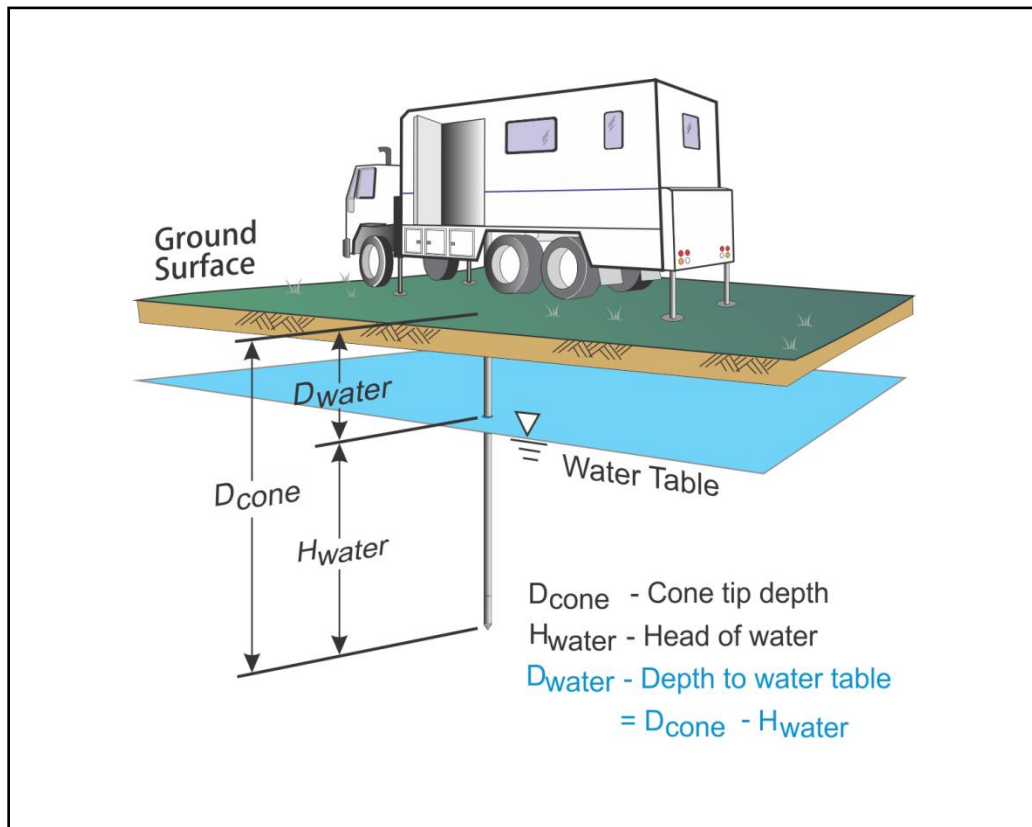


Figure PPD-1. Pore pressure dissipation test setup

Pore pressure dissipation data can be interpreted to provide estimates of ground water conditions, permeability, consolidation characteristics and soil behavior.

The typical shapes of dissipation curves shown in [Figure PPD-2](#) are very useful in assessing soil type, drainage, in situ pore pressure and soil properties. A flat curve that stabilizes quickly is typical of a freely draining sand. Undrained soils such as clays will typically show positive excess pore pressure and have long dissipation times. Dilative soils will often exhibit dynamic pore pressures below equilibrium that then rise over time. Overconsolidated fine-grained soils will often exhibit an initial dilatory response where there is an initial rise in pore pressure before reaching a peak and dissipating.

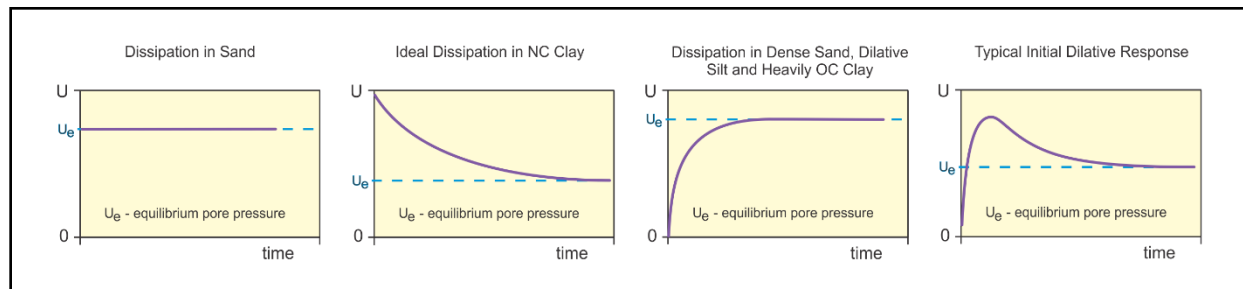


Figure PPD-2. Pore pressure dissipation curve examples

In order to interpret the equilibrium pore pressure (u_{eq}) and the apparent phreatic surface, the pore pressure should be monitored until such time as there is no variation in pore pressure with time as shown for each curve in [Figure PPD-2](#).

In fine grained deposits the point at which 100% of the excess pore pressure has dissipated is known as t_{100} . In some cases this can take an excessive amount of time and it may be impractical to take the dissipation to t_{100} . A theoretical analysis of pore pressure dissipations by [Teh and Houlsby \(1991\)](#) showed that a single curve relating degree of dissipation versus theoretical time factor (T^*) may be used to calculate the coefficient of consolidation (c_h) at various degrees of dissipation resulting in the expression for c_h shown below.

$$c_h = \frac{T^* \cdot a^2 \cdot \sqrt{I_r}}{t}$$

Where:

T^* is the dimensionless time factor ([Table Time Factor](#))

a is the radius of the cone

I_r is the rigidity index

t is the time at the degree of consolidation

Table Time Factor. T^* versus degree of dissipation ([Teh and Houlsby \(1991\)](#))

Degree of Dissipation (%)	20	30	40	50	60	70	80
$T^* (u_2)$	0.038	0.078	0.142	0.245	0.439	0.804	1.60

The coefficient of consolidation is typically analyzed using the time (t_{50}) corresponding to a degree of dissipation of 50% (u_{50}). In order to determine t_{50} , dissipation tests must be taken to a pressure less than u_{50} . The u_{50} value is half way between the initial maximum pore pressure and the equilibrium pore pressure value, known as u_{100} . To estimate u_{50} , both the initial maximum pore pressure and u_{100} must be known or estimated. Other degrees of dissipations may be considered, particularly for extremely long dissipations.

At any specific degree of dissipation the equilibrium pore pressure (u at t_{100}) must be estimated at the depth of interest. The equilibrium value may be determined from one or more sources such as measuring the value directly (u_{100}), estimating it from other dissipations in the same profile, estimating the phreatic surface and assuming hydrostatic conditions, from nearby soundings, from client provided information, from site observations and/or past experience, or from other site instrumentation.

For calculations of c_h ([Teh and Houlsby \(1991\)](#)), t_{50} values are estimated from the corresponding pore pressure dissipation curve and a rigidity index (I_r) is assumed. For curves having an initial dilatory response in which an initial rise in pore pressure occurs before reaching a peak, the relative time from the peak value is used in determining t_{50} . In cases where the time to peak is excessive, t_{50} values are not calculated.

Due to possible inherent uncertainties in estimating I_r , the equilibrium pore pressure and the effect of an initial dilatory response on calculating t_{50} , other methods should be applied to confirm the results for c_h .

Additional published methods for estimating the coefficient of consolidation from a piezocone test are described in Burns and Mayne ([1998, 2002](#)), [Jones and Van Zyl \(1981\)](#), [Robertson et al. \(1992\)](#) and [Sully et al. \(1999\)](#).

A summary of the pore pressure dissipation tests and dissipation plots are presented in the relevant appendix.

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Vibrating wire piezometers (VWP) measure in-situ water pressure and temperature. The pressure is determined by measuring the resonant frequency at which the internal tensioned wire vibrates. Calibration constants relate the recorded frequency to the applied pressure. Temperature is measured using a built-in thermistor.

Prior to deployment the piezometers are saturated as per the manufacturer's guidelines and the piezometer serial number and baselines are recorded.

The piezometers are advanced using a CPTu rig, drill rig or other push frame and are deployed from a variety of platforms such as CPTu rigs, drill rigs, boats, barges or amphibious vehicles. Installation depths are referenced to the existing surface at the time of installation.

An installation summary is provided in the relevant appendix.

Hydropunch water sampling is designed to collect a representative in-situ water sample. A drill rig or hydraulic ramset provides the force required to push the sampler into the ground.

The assembled sampler consists of an outer thick metal housing that encases a sliding thin-walled metal tube with thin vertical slits. The inner thin-walled tube has a large thick metal tip on the end that has the same diameter as the outer thick metal housing.

Prior to sampler deployment, the inner thin-walled tube is pushed up inside the housing to prevent any damage during insertion.

The sampler is advanced steadily into the ground with deployment rods to the desired depth. Once the desired depth is achieved, the outer casing of the sampler is retracted twenty-five centimeters exposing the thin-walled metal tube. The vertical slits on the inner tube enable water from the surrounding formation to flow freely into the sampler and up the rods. Once the desired sample volume is achieved, the outer casing of the sampler is extended twenty-five centimeters covering the thin-walled metal tube.

The sample is extracted using either a water pump or a bailer. The sample is then poured into a container and labeled with the location name, sample depth, sample number, and date. Each sample is logged in an Excel spreadsheet. The sample log provides information pertaining to each sample and the sample location. The sample is then stored per client specifications.

The sample summary and sample logs are presented in the relevant appendix.

The appendices listed below are included in the report:

- Cone Penetration Test Summary and Standard Cone Penetration Test Plots
- Standard Cone Penetration Test Plots with Expanded Range
- Advanced Cone Penetration Test Plots with $S_u(Nkt)$, Φ , and $N1(60)_{lc}$
- Normalized Cone Penetration Test Plots
- SBT Zone Scatter Plots
- Seismic Cone Penetration Test Plots
- Seismic Cone Penetration Test Tabular Results
- Seismic Cone Penetration Wave Traces
- Pore Pressure Dissipation Summary and Pore Pressure Dissipation Plots
- Piezometer Installation Summary
- Groundwater Sampling Summary

Cone Penetration Test Summary and Standard Cone Penetration Test Plots



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Start Date: 12-Jul-2020
End Date: 22-Jul-2020

CONE PENETRATION TEST SUMMARY

Sounding ID	File Name	Date	Cone	Assumed Phreatic Surface ¹ (ft)	Final Depth (ft)	Latitude ²	Longitude ²	Elevation ³ (ft)	Refer to Notation Number
CPT-01	20-52-21054_SP01	15-Jul-2020	552:T1500F15U500	>6.3	6.23	34.932162	-110.271725	5058	4
CPT-03	20-52-21054_SP03	15-Jul-2020	552:T1500F15U500	>7.6	7.63	34.931641	-110.271208	5050	4
CPT-05	20-52-21054_SP05	15-Jul-2020	552:T1500F15U500	8.3	10.09	34.931050	-110.270578	5046	
CPT-07	20-52-21054_SP07	15-Jul-2020	552:T1500F15U500	>19.3	19.28	34.930619	-110.270080	5044	4
CPT-08	20-52-21054_SP08	15-Jul-2020	552:T1500F15U500	16.3	20.67	34.930425	-110.269834	5042	
CPT-09	20-52-21054_SP09	15-Jul-2020	552:T1500F15U500	19.4	32.48	34.930224	-110.269621	5042	
CPT-10	20-52-21054_SP10	15-Jul-2020	552:T1500F15U500	19.9	35.76	34.930091	-110.269468	5042	
CPT-11	20-52-21054_SP11	15-Jul-2020	552:T1500F15U500	16.5	23.13	34.929756	-110.269168	5042	
CPT-12	20-52-21054_SP12	16-Jul-2020	552:T1500F15U500	16.7	22.80	34.929575	-110.268996	5043	
CPT-13	20-52-21054_SP13	16-Jul-2020	552:T1500F15U500	16.0	35.60	34.929371	-110.268696	5042	5
CPT-14	20-52-21054_SP14	16-Jul-2020	552:T1500F15U500	20.1	49.54	34.929196	-110.268458	5043	
CPT-15	20-52-21054_SP15	16-Jul-2020	552:T1500F15U500	23.0	47.00	34.929053	-110.268442	5042	
CPT-16	20-52-21054_SP16	14-Jul-2020	552:T1500F15U500	12.1	53.07	34.929038	-110.268309	5042	
CPT-17	20-52-21054_SP17	14-Jul-2020	552:T1500F15U500	13.6	52.74	34.928893	-110.268168	5042	
CPT-18	20-52-21054_SP18	14-Jul-2020	552:T1500F15U500	20.2	52.08	34.928743	-110.267951	5041	
CPT-19	20-52-21054_SP19	14-Jul-2020	552:T1500F15U500	0.7	51.02	34.928568	-110.267736	5043	
CPT-20	20-52-21054_SP20	13-Jul-2020	552:T1500F15U500	15.3	52.66	34.928437	-110.267551	5043	
CPT-21	20-52-21054_SP21	13-Jul-2020	552:T1500F15U500	23.0	47.24	34.928272	-110.267246	5043	
CPT-22	20-52-21054_SP22	13-Jul-2020	552:T1500F15U500	4.1	9.76	34.928016	-110.266925	5048	
CPT-23	20-52-21054_SP23	16-Jul-2020	552:T1500F15U500	13.1	42.49	34.928670	-110.267932	5040	
CPT-24	20-52-21054_SP24	19-Jul-2020	552:T1500F15U500	13.4	25.26	34.929637	-110.269138	5042	
CPT-25	20-52-21054_SP25	20-Jul-2020	657:T1500F15U500	8.2	50.69	34.928437	-110.267658	5043	



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Start Date: 12-Jul-2020
End Date: 22-Jul-2020

CONE PENETRATION TEST SUMMARY

Sounding ID	File Name	Date	Cone	Assumed Phreatic Surface ¹ (ft)	Final Depth (ft)	Latitude ²	Longitude ²	Elevation ³ (ft)	Refer to Notation Number
CPT-26	20-52-21054_SP26	20-Jul-2020	657:T1500F15U500	22.5	51.76	34.928306	-110.267504	5043	
CPT-27	20-52-21054_SP27	20-Jul-2020	657:T1500F15U500	-0.8	20.34	34.928146	-110.267118	5046	

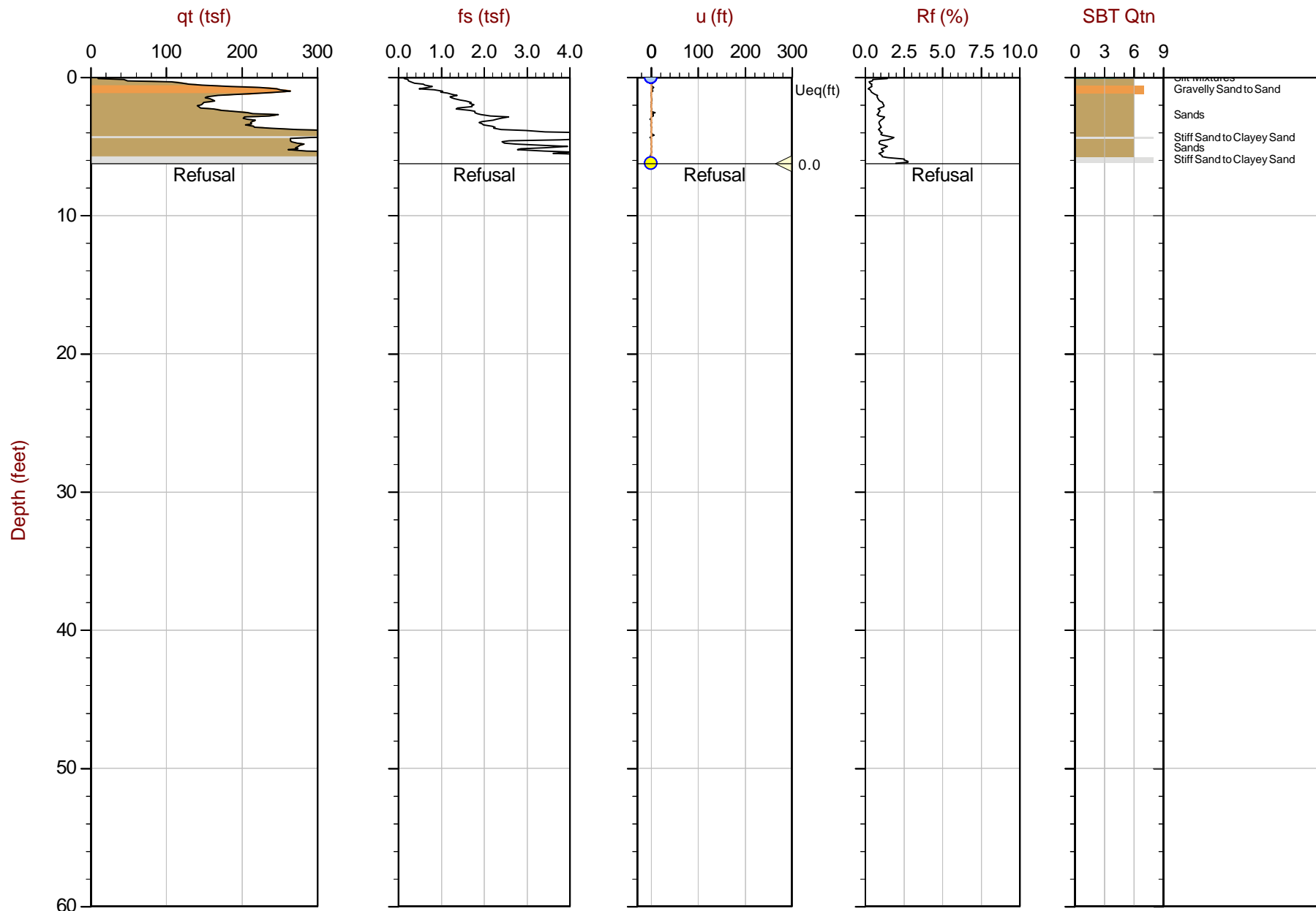
1. The assumed phreatic surface was based on the results of the shallowest pore pressure dissipation test performed within or nearest to each sounding.
2. The coordinates are based on the WGS84 Datum and have an accuracy of ± 30 feet.
3. Elevations are referenced to the ground surface and were acquired from the Google Earth Elevation for the recorded coordinates.
4. Sounding is assumed to be dry based on the pore pressure dissipation test performed within the sounding or in a nearby sounding.
5. The assumed phreatic surface is based on the pore pressure dissipation tests completed at nearby soundings.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 08:09
Site: Cholla Power Plant

Sounding: CPT-01
Cone: 552:T1500F15U500



Max Depth: 1.900 m / 6.23 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP01.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.932162 Long: -110.271725

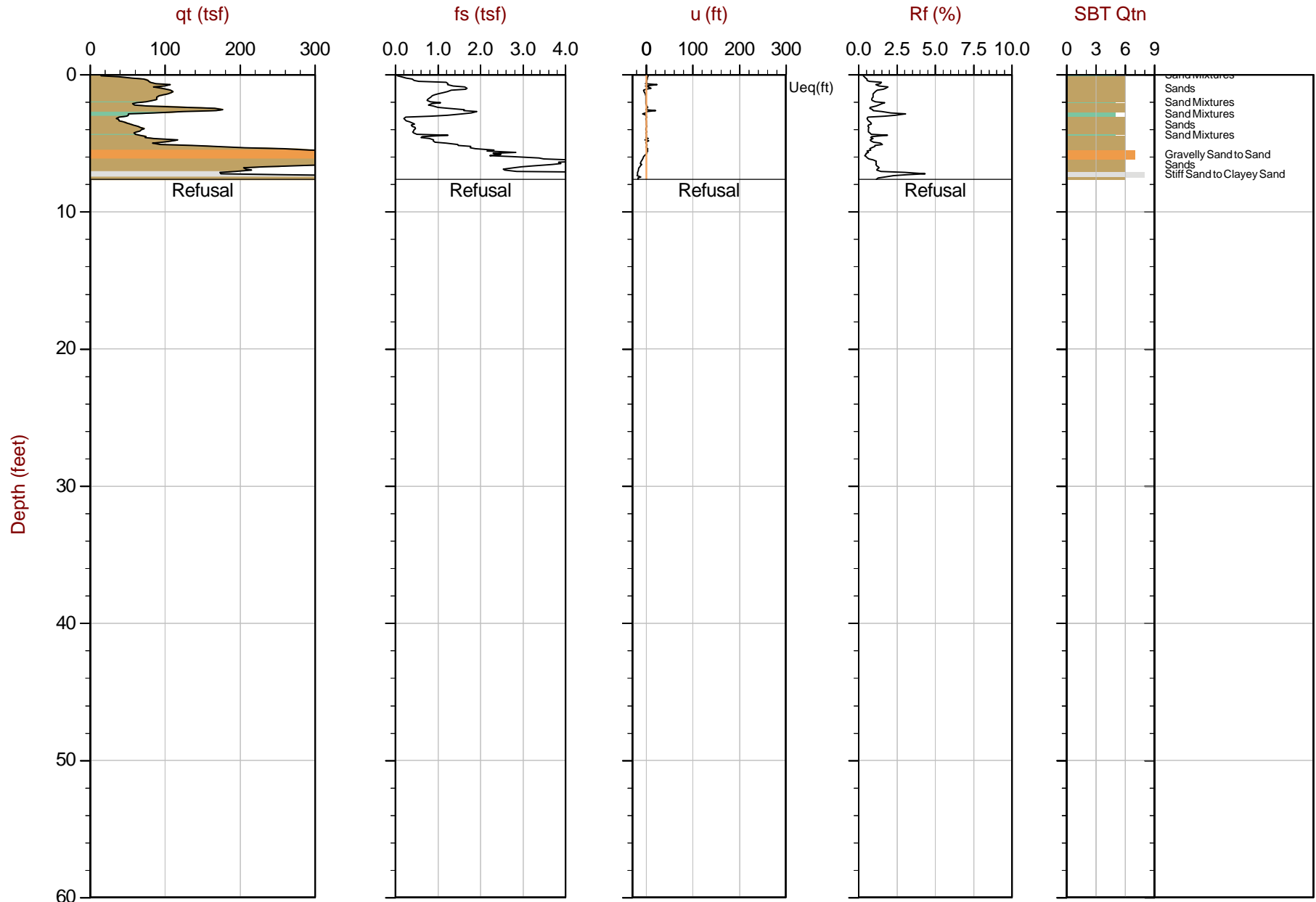
Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 08:46
Site: Cholla Power Plant

Sounding: CPT-03
Cone: 552:T1500F15U500



Max Depth: 2.325 m / 7.63 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP03.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.931641 Long: -110.271208

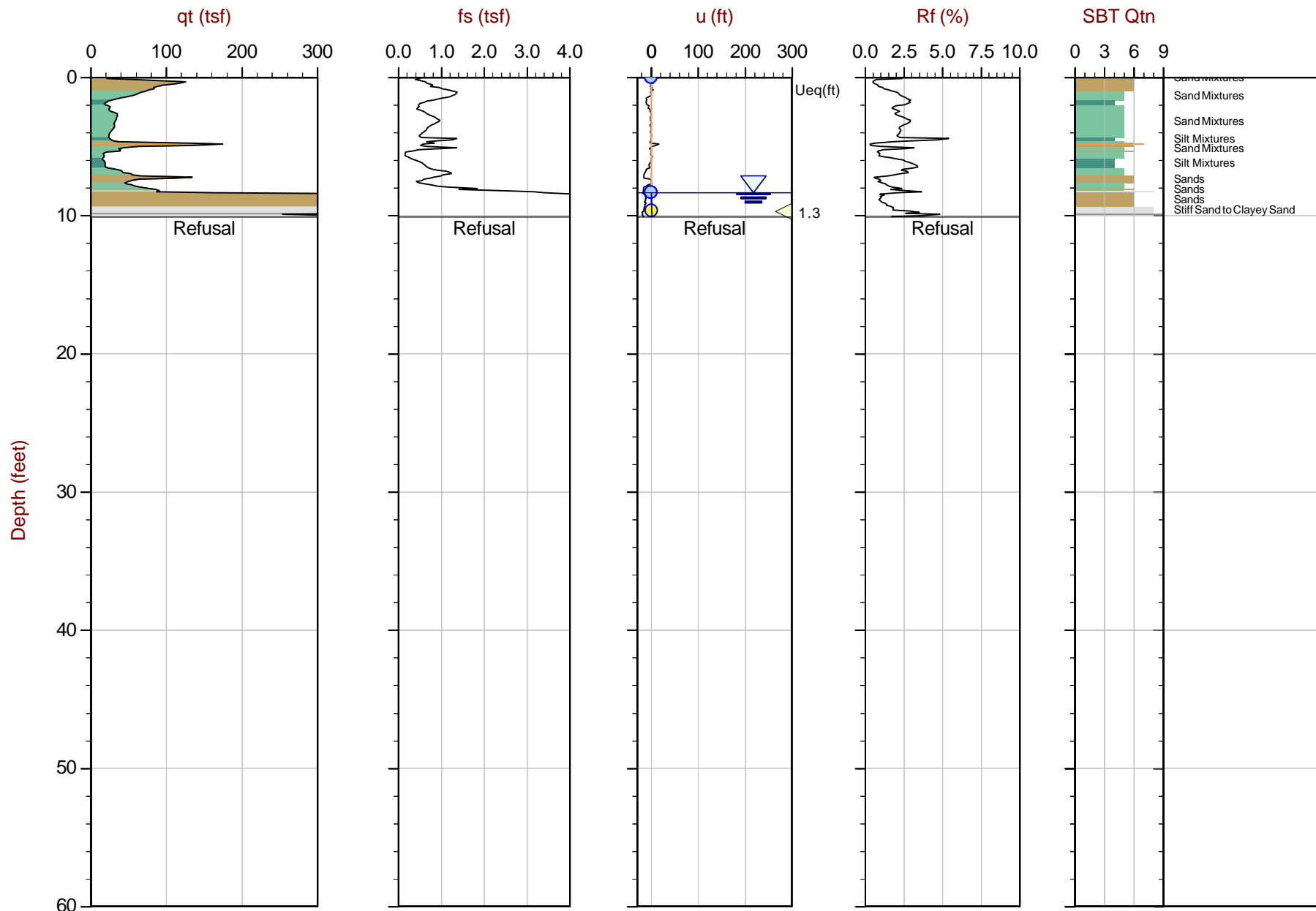
Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 09:23
Site: Cholla Power Plant

Sounding: CPT-05
Cone: 552:T1500F15U500



Max Depth: 3.075 m / 10.09 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP05.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.931050 Long: -110.270578

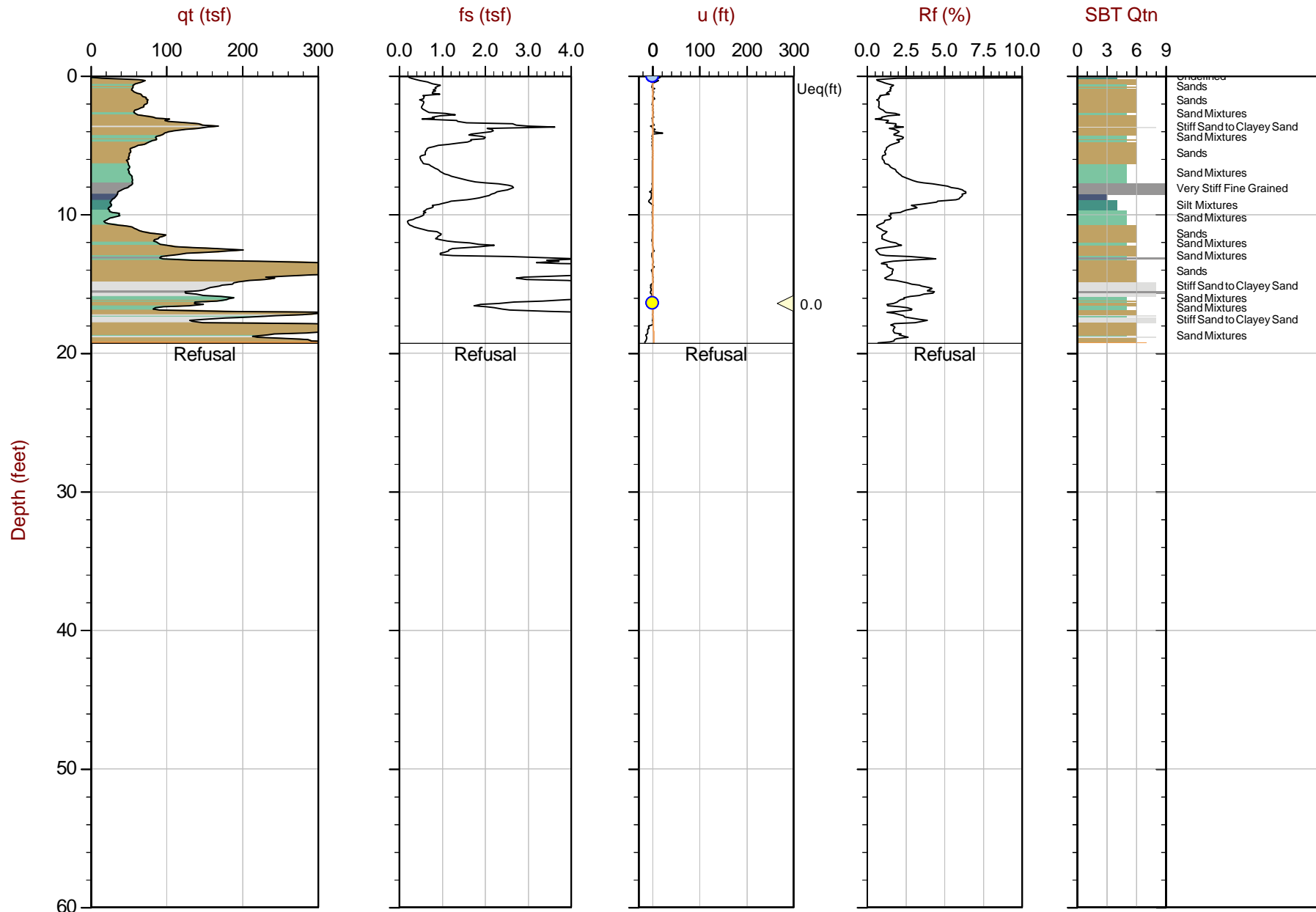
Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 10:16
Site: Cholla Power Plant

Sounding: CPT-07
Cone: 552:T1500F15U500



Max Depth: 5.875 m / 19.27 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP07.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.930619 Long: -110.270080

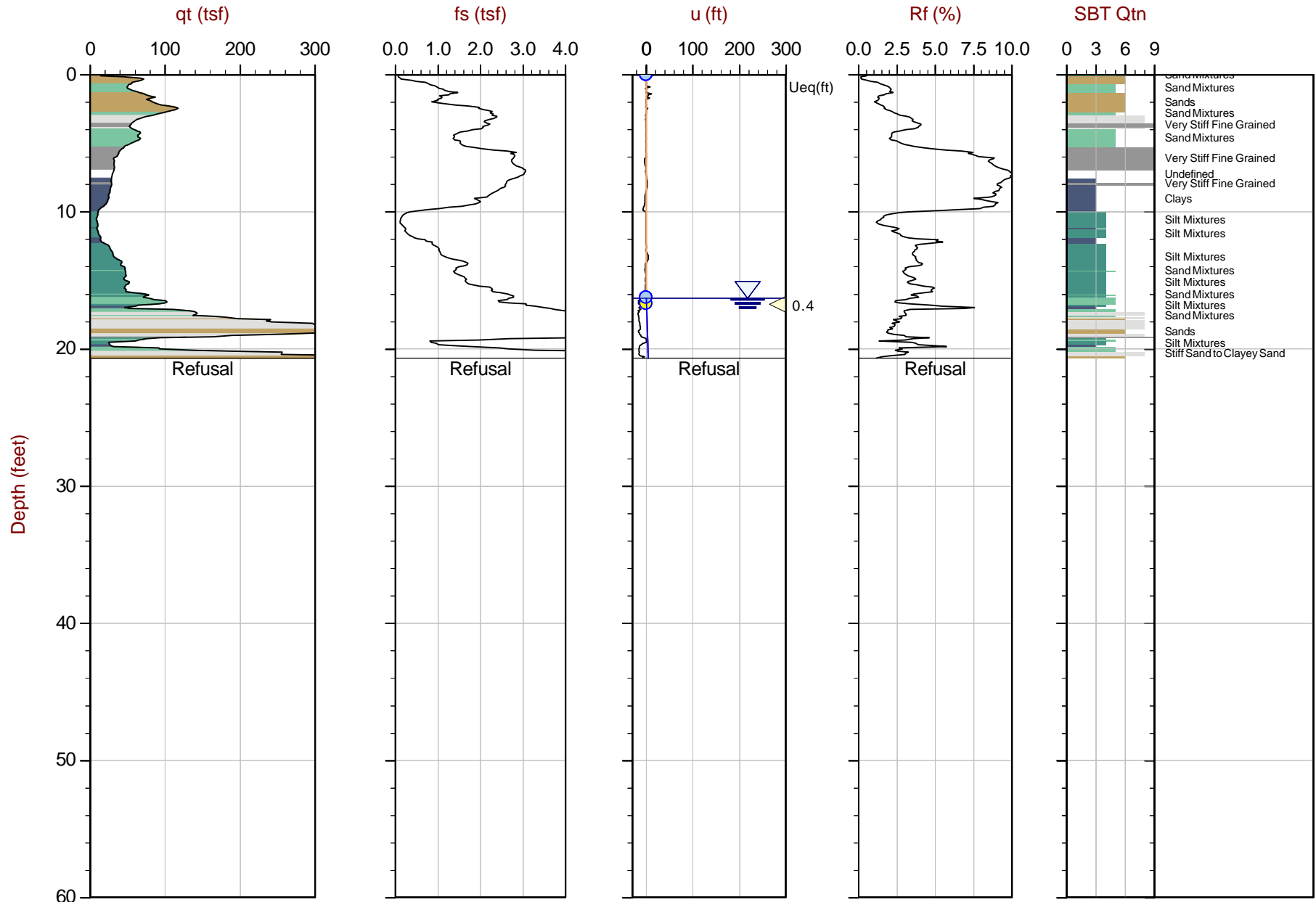
Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line █ Water Sample
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 11:09
Site: Cholla Power Plant

Sounding: CPT-08
Cone: 552:T1500F15U500



Max Depth: 6.300 m / 20.67 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP08.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.930425 Long: -110.269834

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

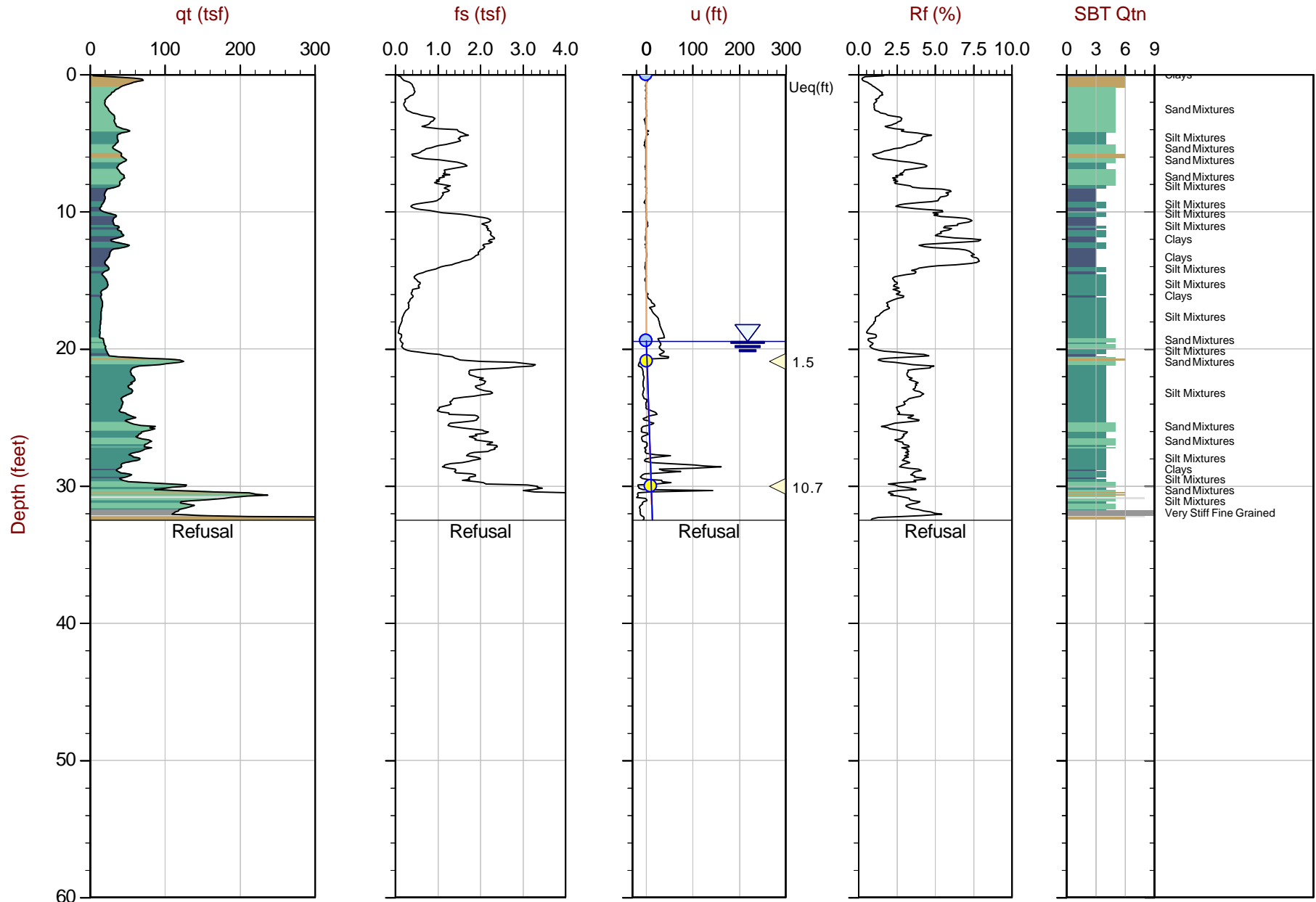
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Wood plc

Job No: 20-52-21054
Date: 2020-07-15 12:02
Site: Cholla Power Plant

Sounding: CPT-09
Cone: 552:T1500F15U500



Max Depth: 9.900 m / 32.48 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP09.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.930224 Long: -110.269621

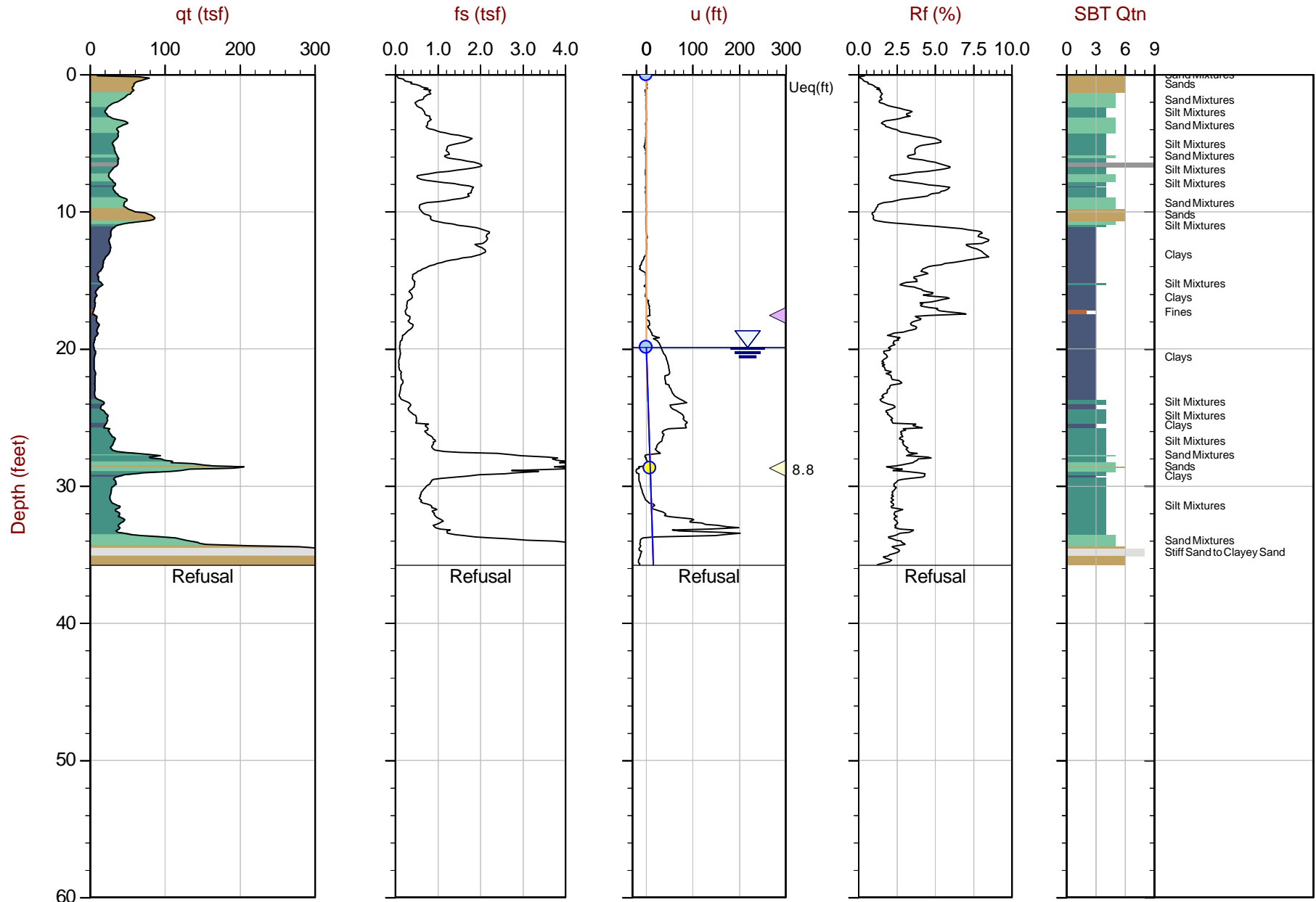
Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 13:15
Site: Cholla Power Plant

Sounding: CPT-10
Cone: 552:T1500F15U500



Max Depth: 10.900 m / 35.76 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP10.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.930091 Long: -110.269468

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line | Water Sample

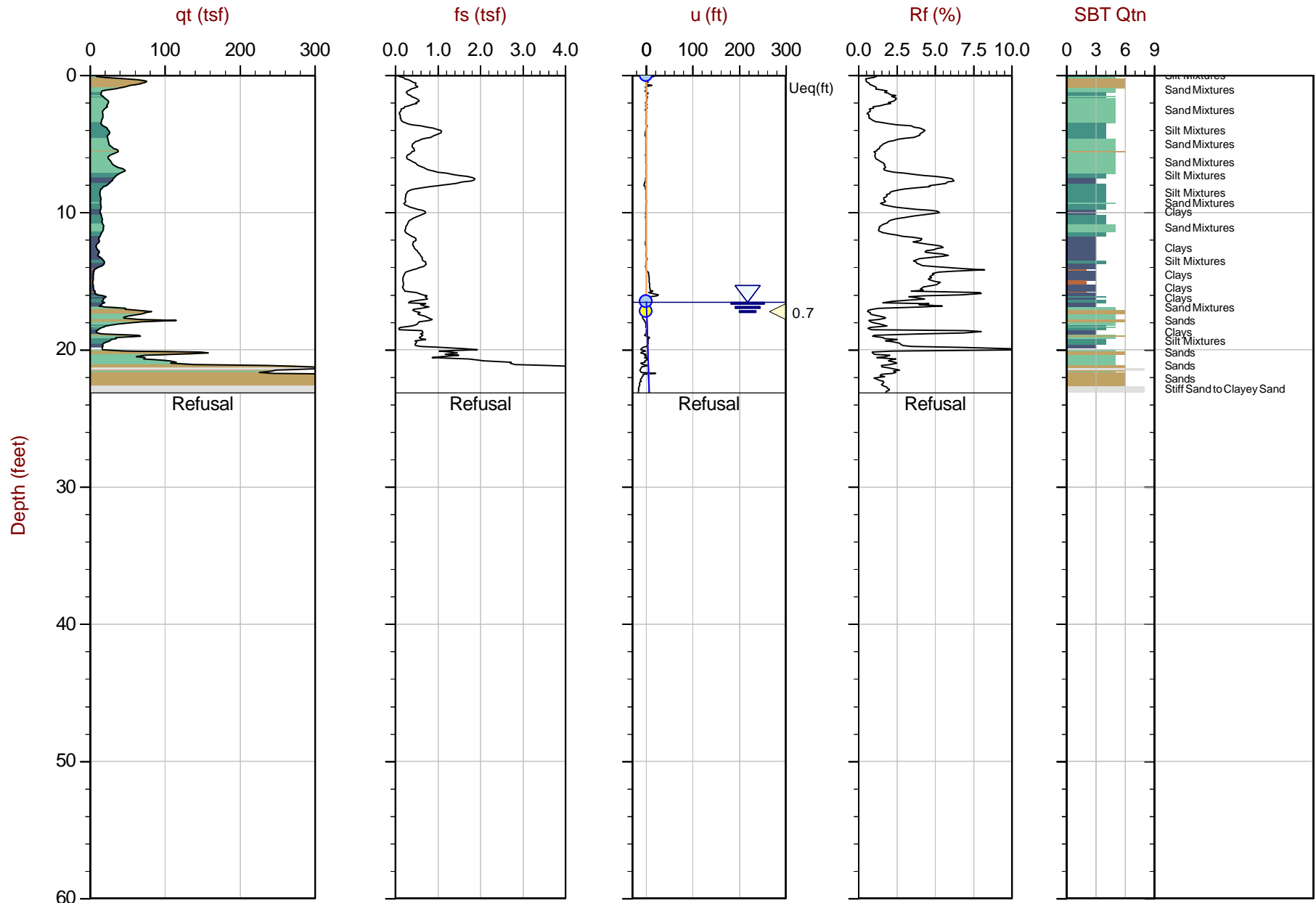
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 15:02
Site: Cholla Power Plant

Sounding: CPT-11
Cone: 552:T1500F15U500



Max Depth: 7.050 m / 23.13 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP11.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929756 Long: -110.269168

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

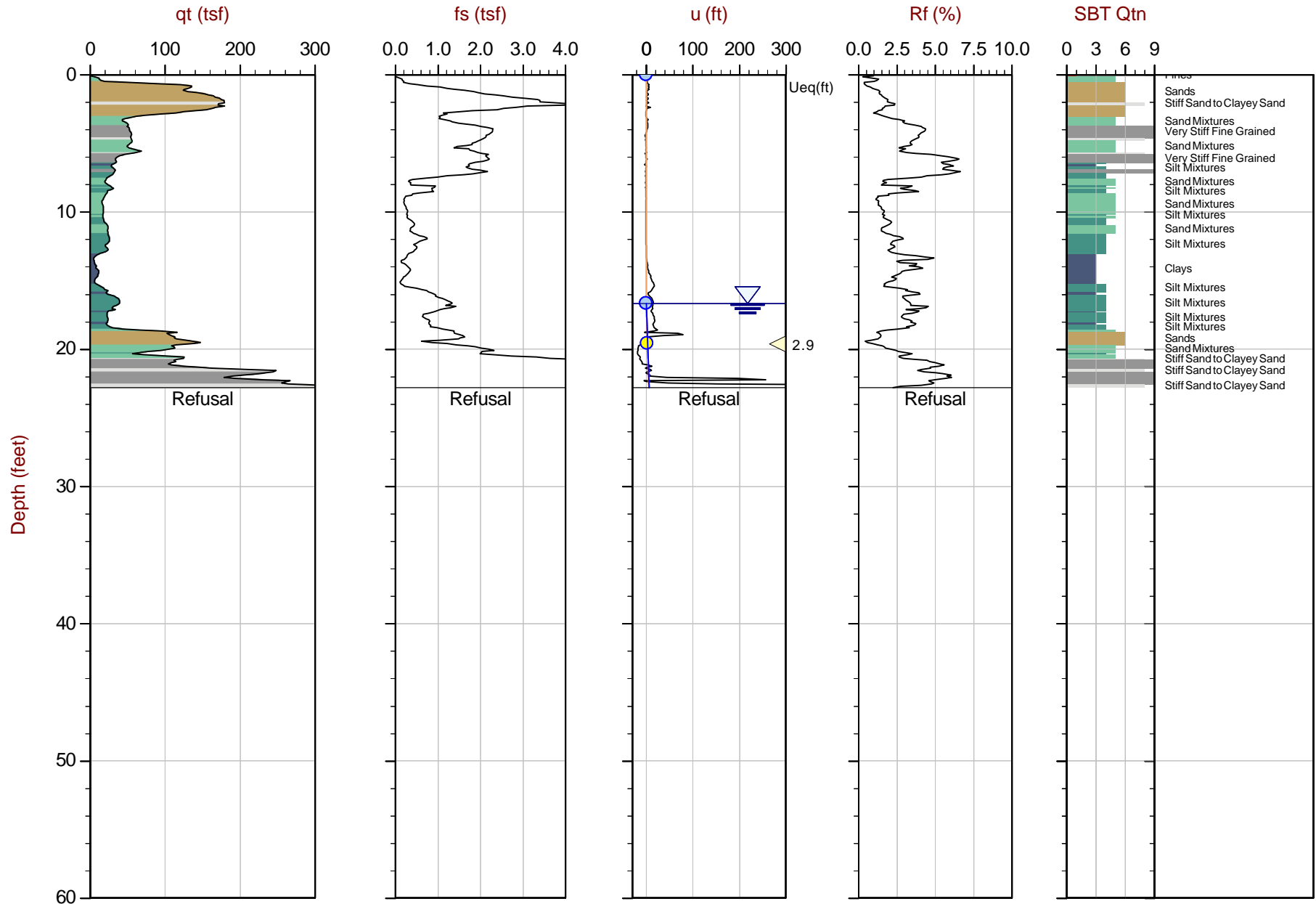
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-16 08:09
Site: Cholla Power Plant

Sounding: CPT-12
Cone: 552:T1500F15U500



Max Depth: 6.950 m / 22.80 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP12.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929575 Long: -110.268996

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

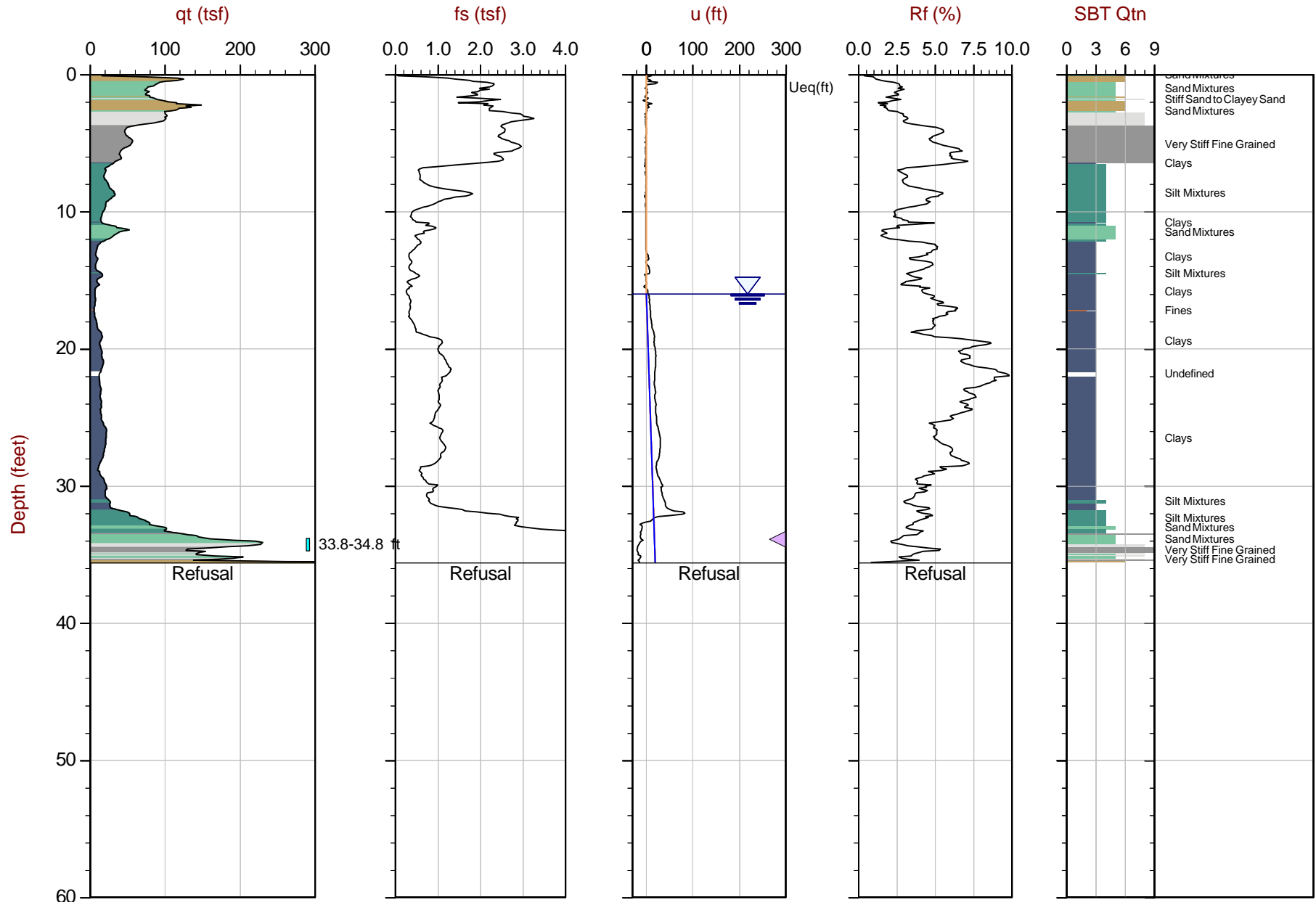
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-16 09:23
Site: Cholla Power Plant

Sounding: CPT-13
Cone: 552:T1500F15U500



Max Depth: 10.850 m / 35.60 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP13.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929371 Long: -110.268696

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

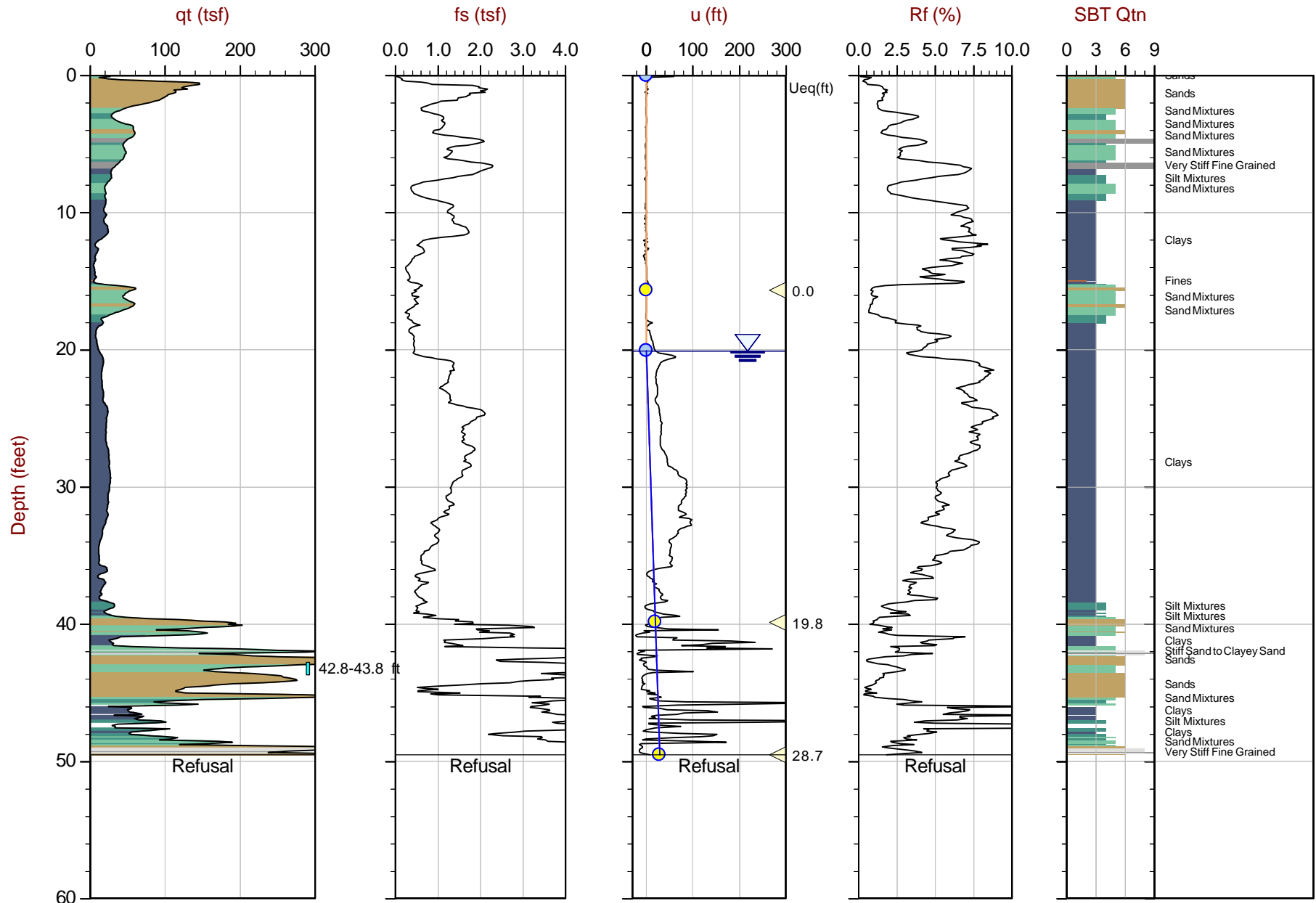
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-16 10:34
Site: Cholla Power Plant

Sounding: CPT-14
Cone: 552:T1500F15U500



Max Depth: 15.100 m / 49.54 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP14.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929196 Long: -110.268458

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

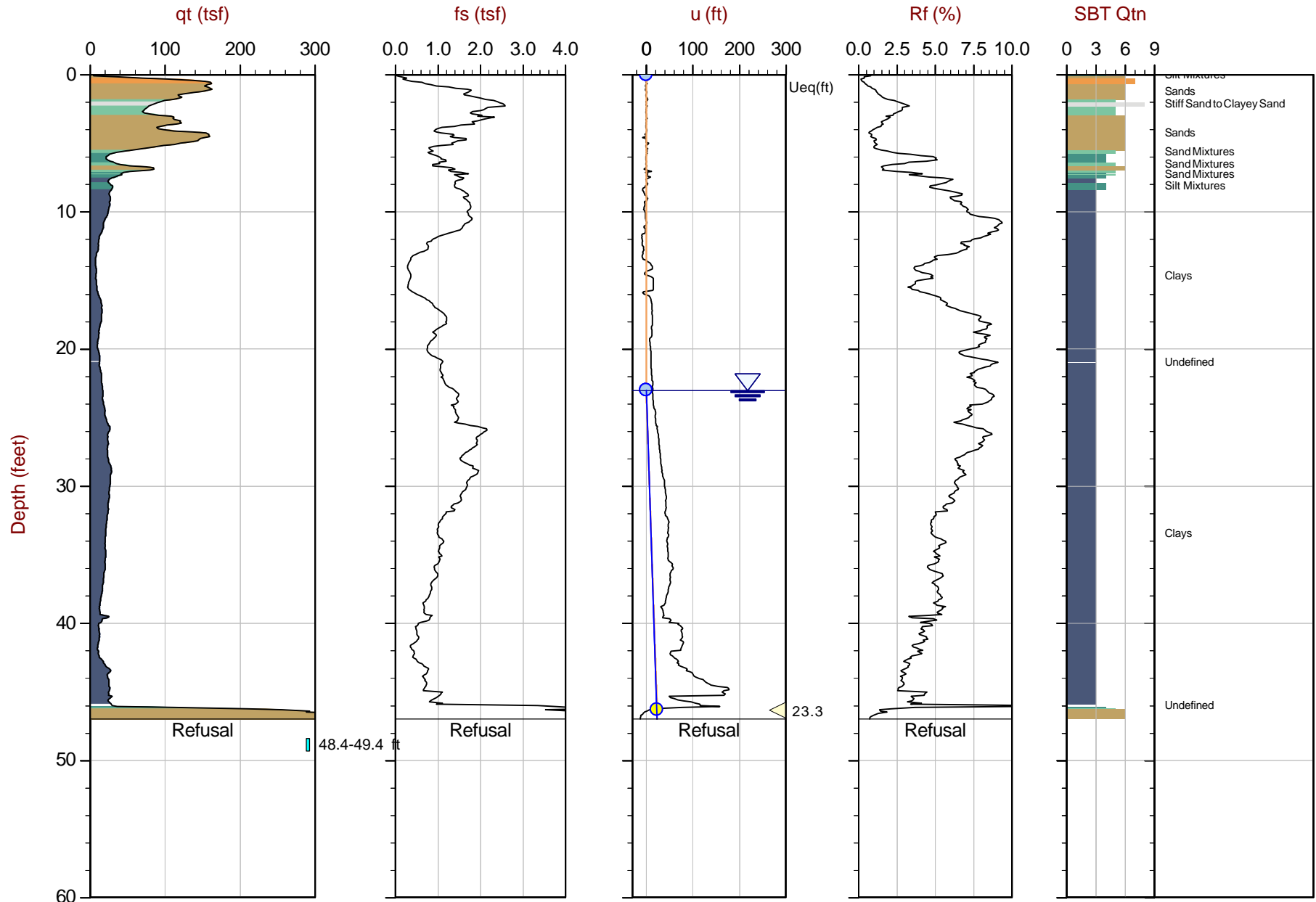
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-16 12:28
Site: Cholla Power Plant

Sounding: CPT-15
Cone: 552:T1500F15U500



Max Depth: 14.325 m / 47.00 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP15.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929053 Long: -110.268442

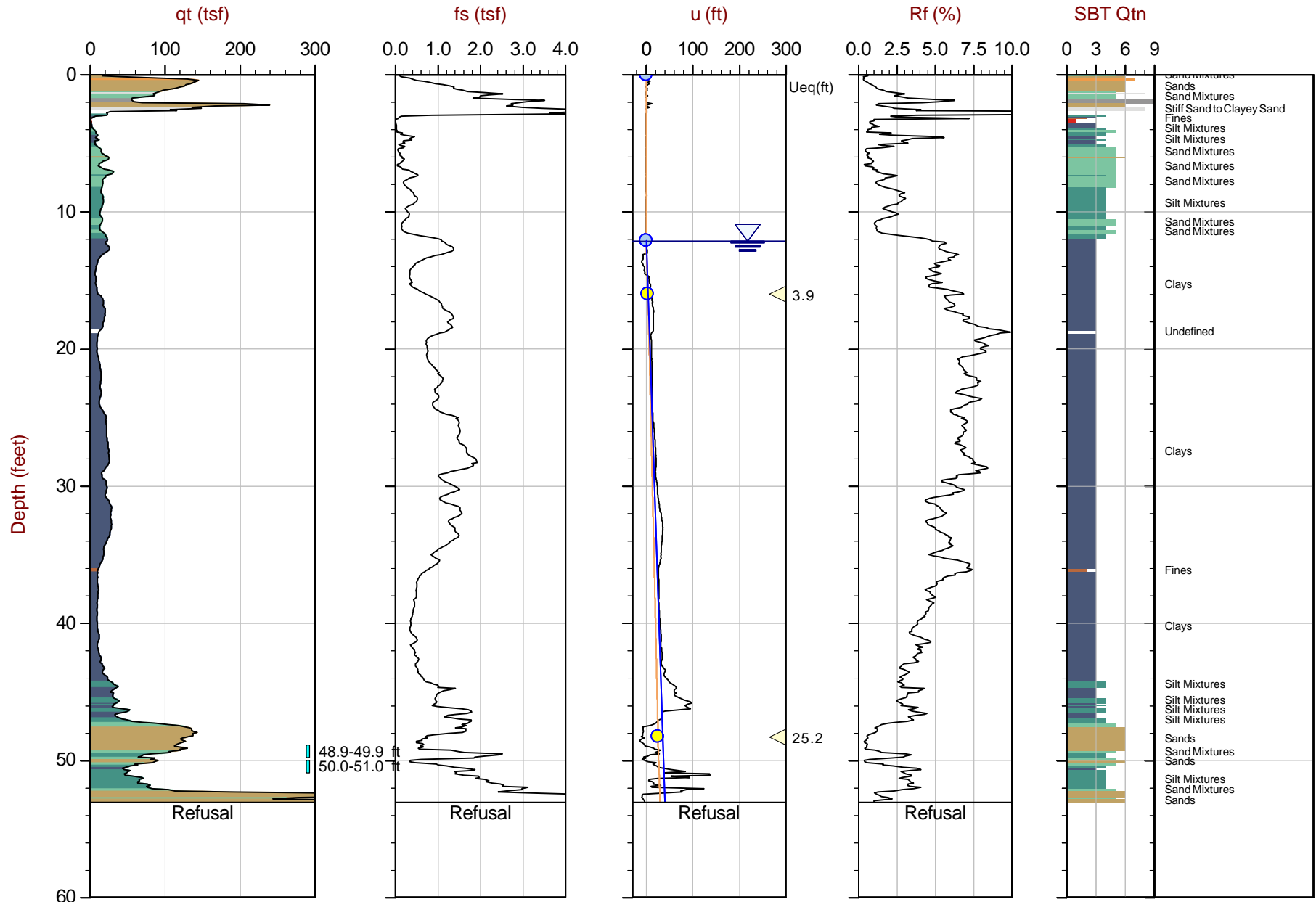
Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-14 14:26
Site: Cholla Power Plant

Sounding: CPT-16
Cone: 552:T1500F15U500



Max Depth: 16.175 m / 53.07 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP16.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929038 Long: -110.268309

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

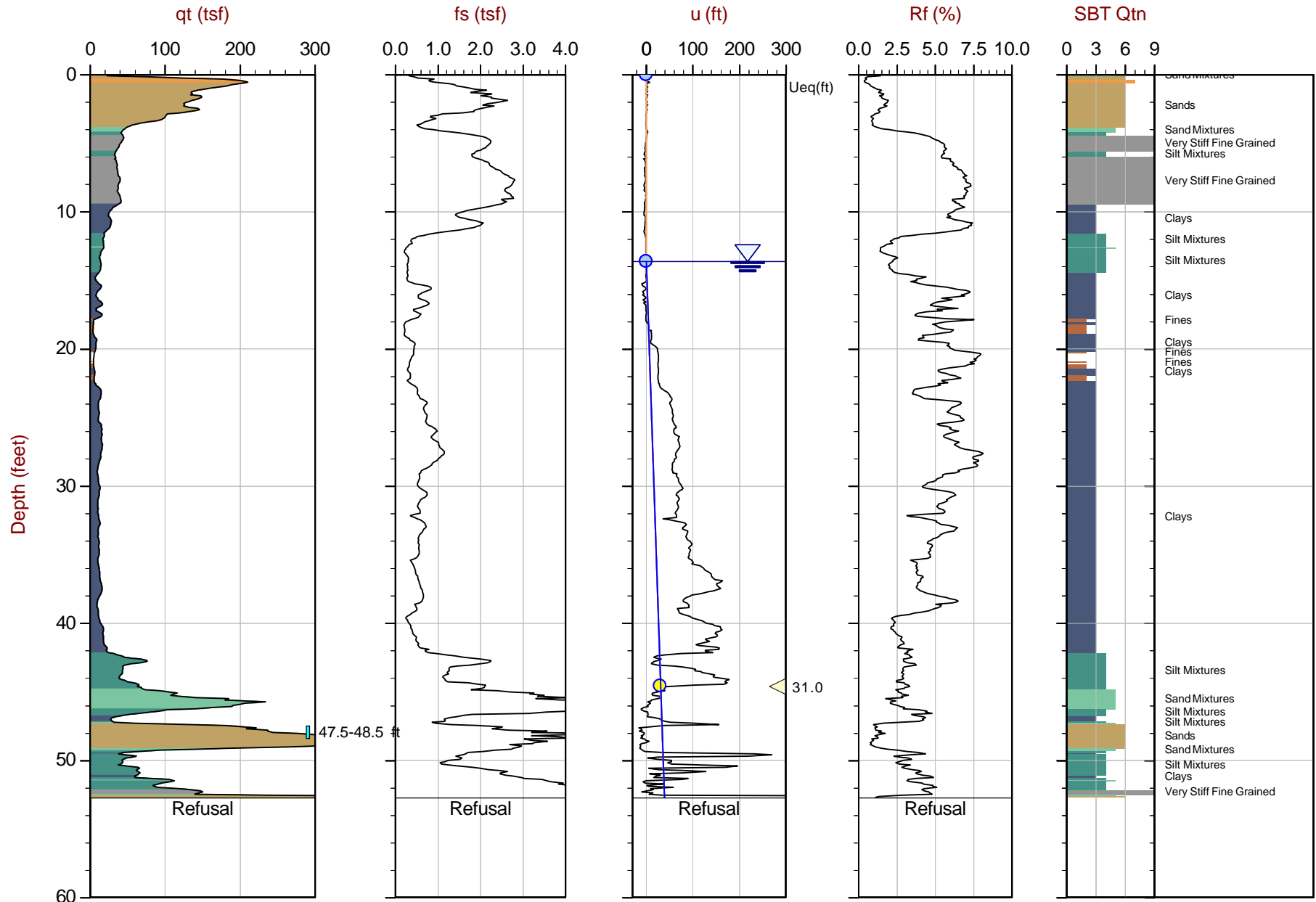
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-14 12:46
Site: Cholla Power Plant

Sounding: CPT-17
Cone: 552:T1500F15U500



Max Depth: 16.075 m / 52.74 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP17.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928893 Long: -110.268168

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

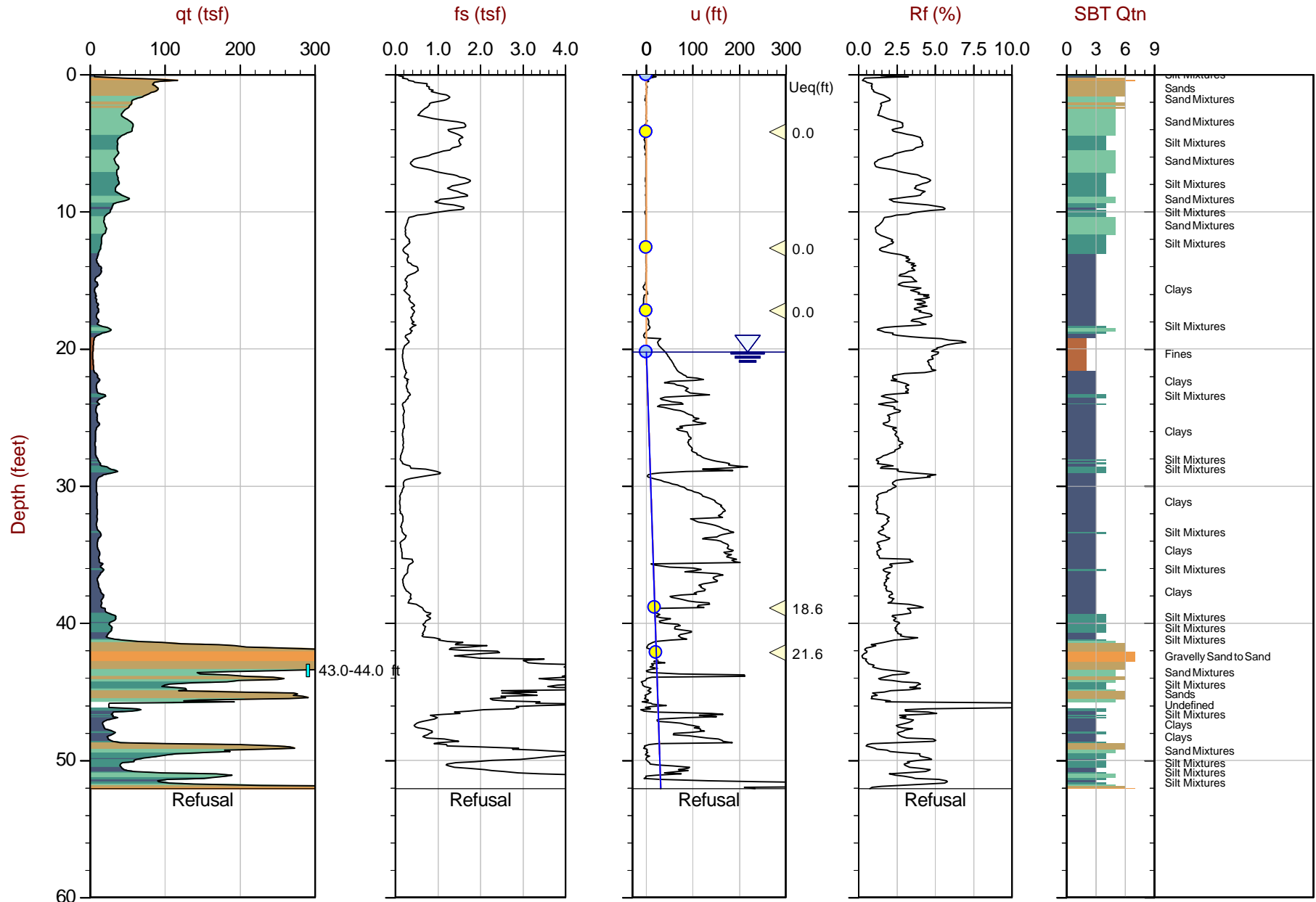
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-14 10:41
Site: Cholla Power Plant

Sounding: CPT-18
Cone: 552:T1500F15U500



Max Depth: 15.875 m / 52.08 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP18.COR
Unit Wt: SBTQtn(PKR2009)

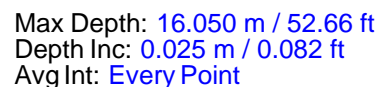
SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928743 Long: -110.267951

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

SBT: [Robertson, 2009 and 2010](#)
 Coords: [Lat: 34.928568](#) [Long: -110.267736](#)

Overplot Item: ● Ueq ● Assumed Ueq ◀ Dissipation, Ueq achieved ◀ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



File: 20-52-21054_SP20.COR
Unit Wt: SBTQtn (PKR2009)

SBT: [Robertson, 2009 and 2010](#)
 Coords: [Lat: 34.928437](#) [Long: -110.267551](#)

Overplot Item: ● Ueq ● Assumed Ueq ◀ Dissipation, Ueq achieved ◀ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

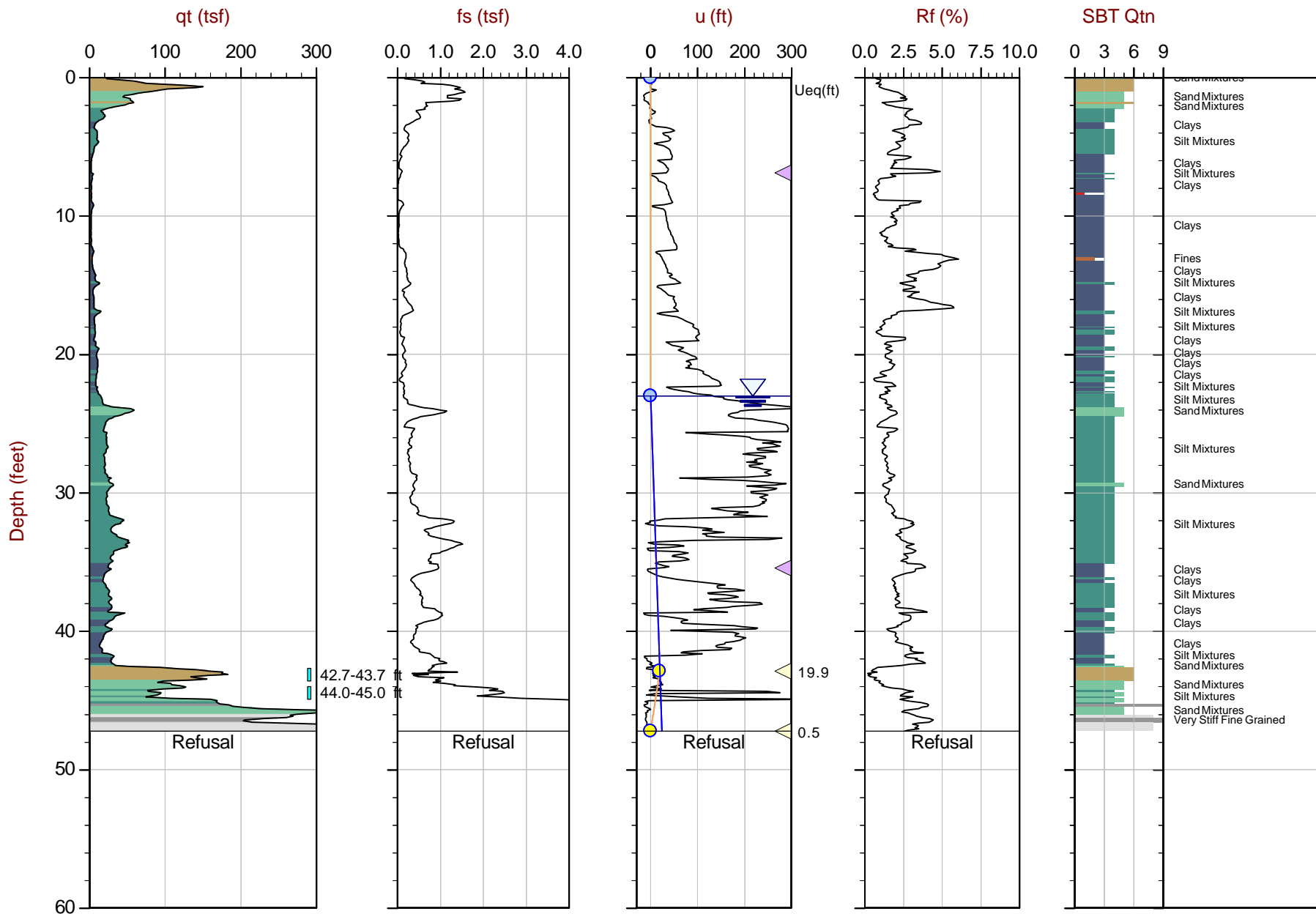
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-13 14:09
Site: Cholla Power Plant

Sounding: CPT-21
Cone: 552:T1500F15U500



Max Depth: 14.400 m / 47.24 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP21.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928272 Long: -110.267246

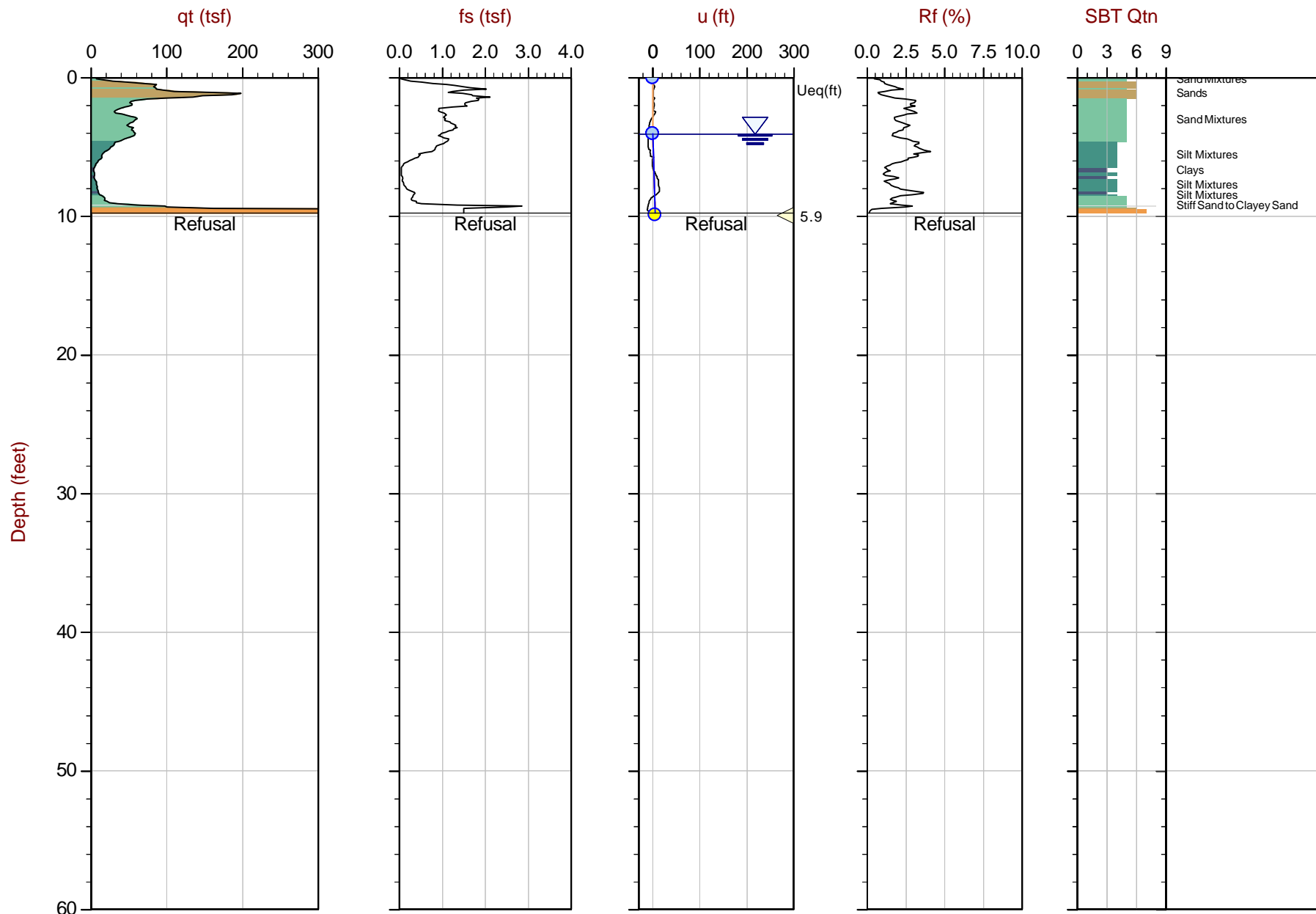
Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▲ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-13 11:25
Site: Cholla Power Plant

Sounding: CPT-22
Cone: 552:T1500F15U500



Max Depth: 2.975 m / 9.76 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP22.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928016 Long: -110.266925

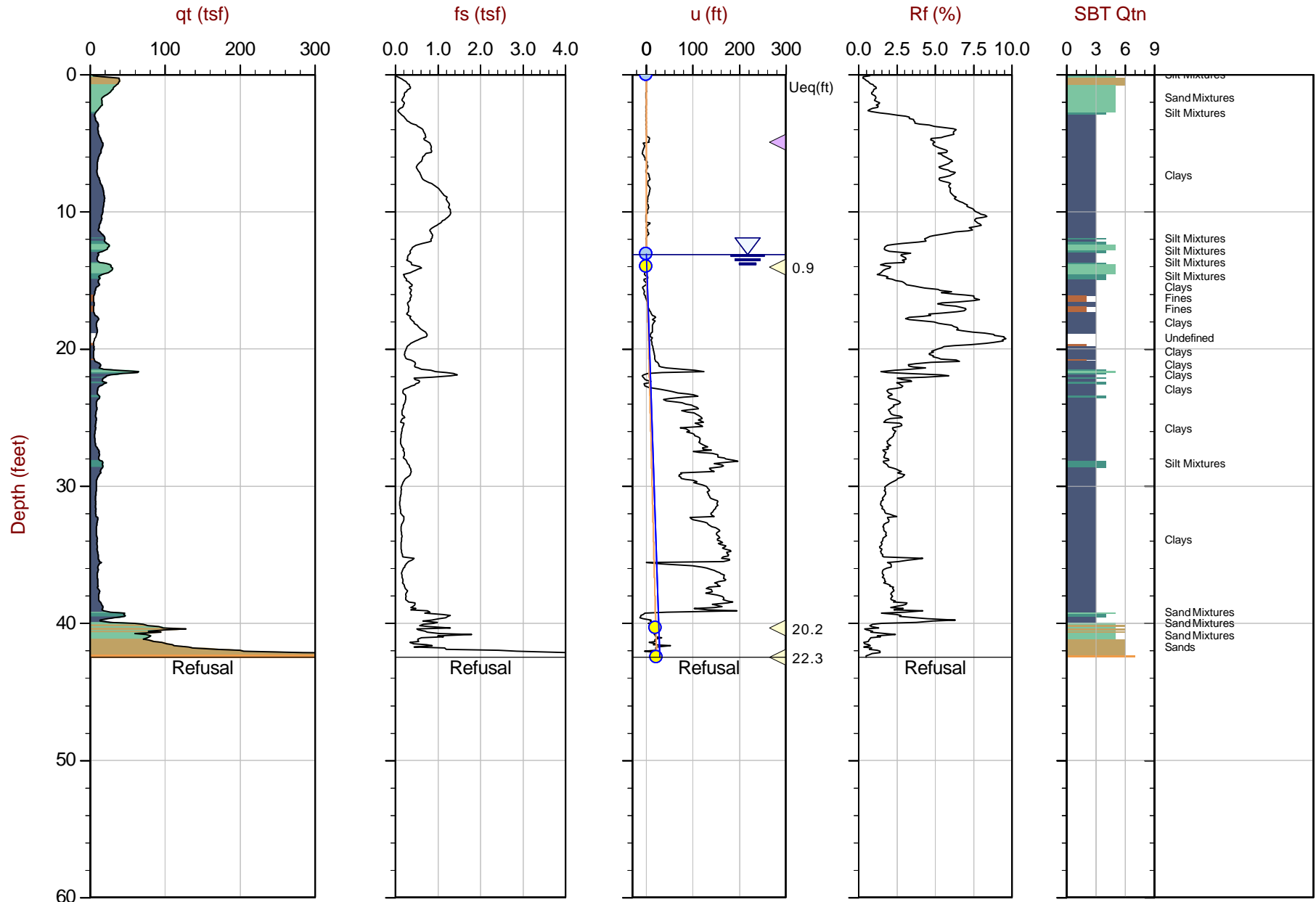
Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▲ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-16 14:09
Site: Cholla Power Plant

Sounding: CPT-23
Cone: 552:T1500F15U500



Max Depth: 12.950 m / 42.49 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP23.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928670 Long: -110.267932

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▲ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

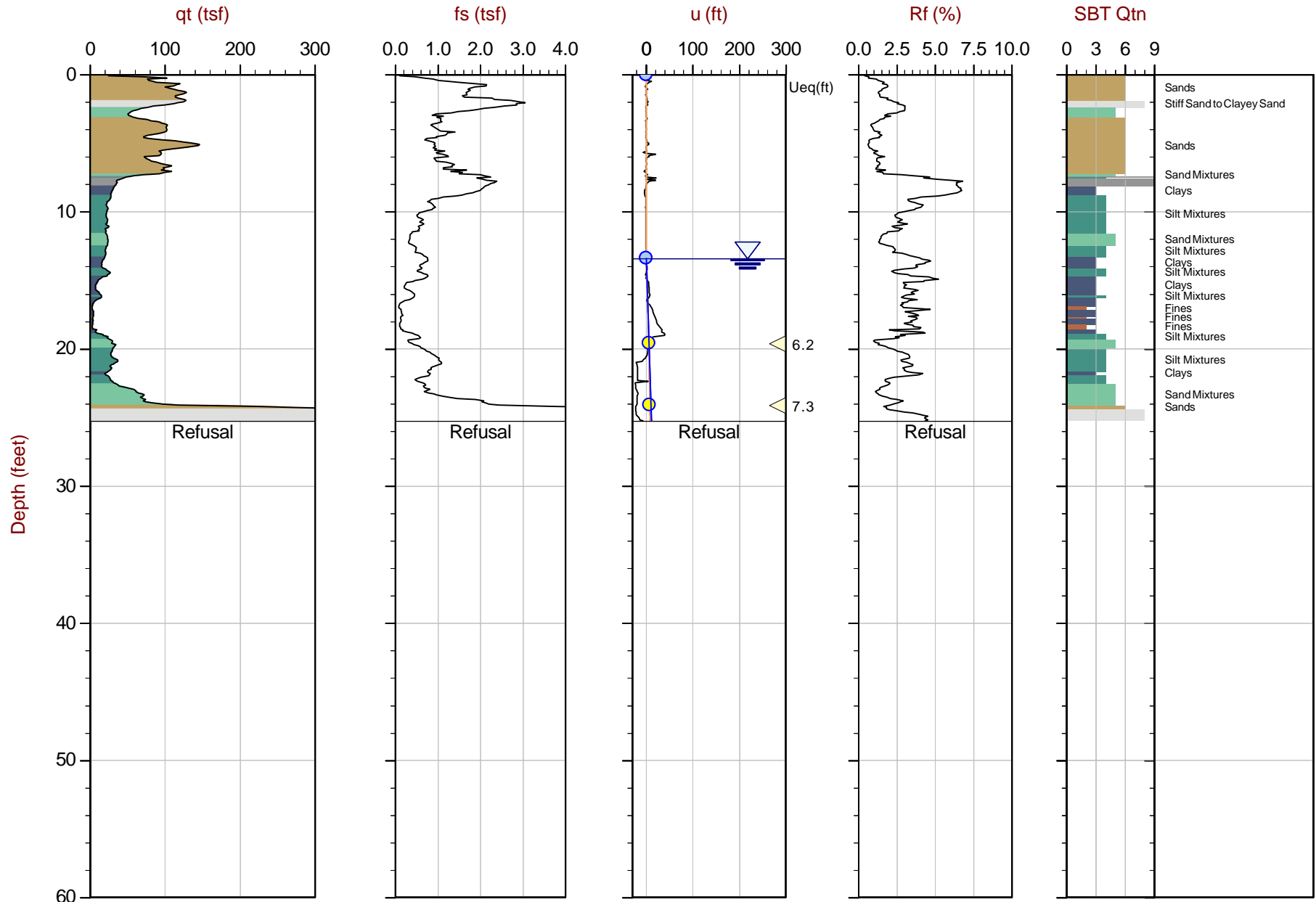
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-19 15:11
Site: Cholla Power Plant

Sounding: CPT-24
Cone: 552:T1500F15U500



Max Depth: 7.700 m / 25.26 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP24.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929637 Long: -110.269138

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

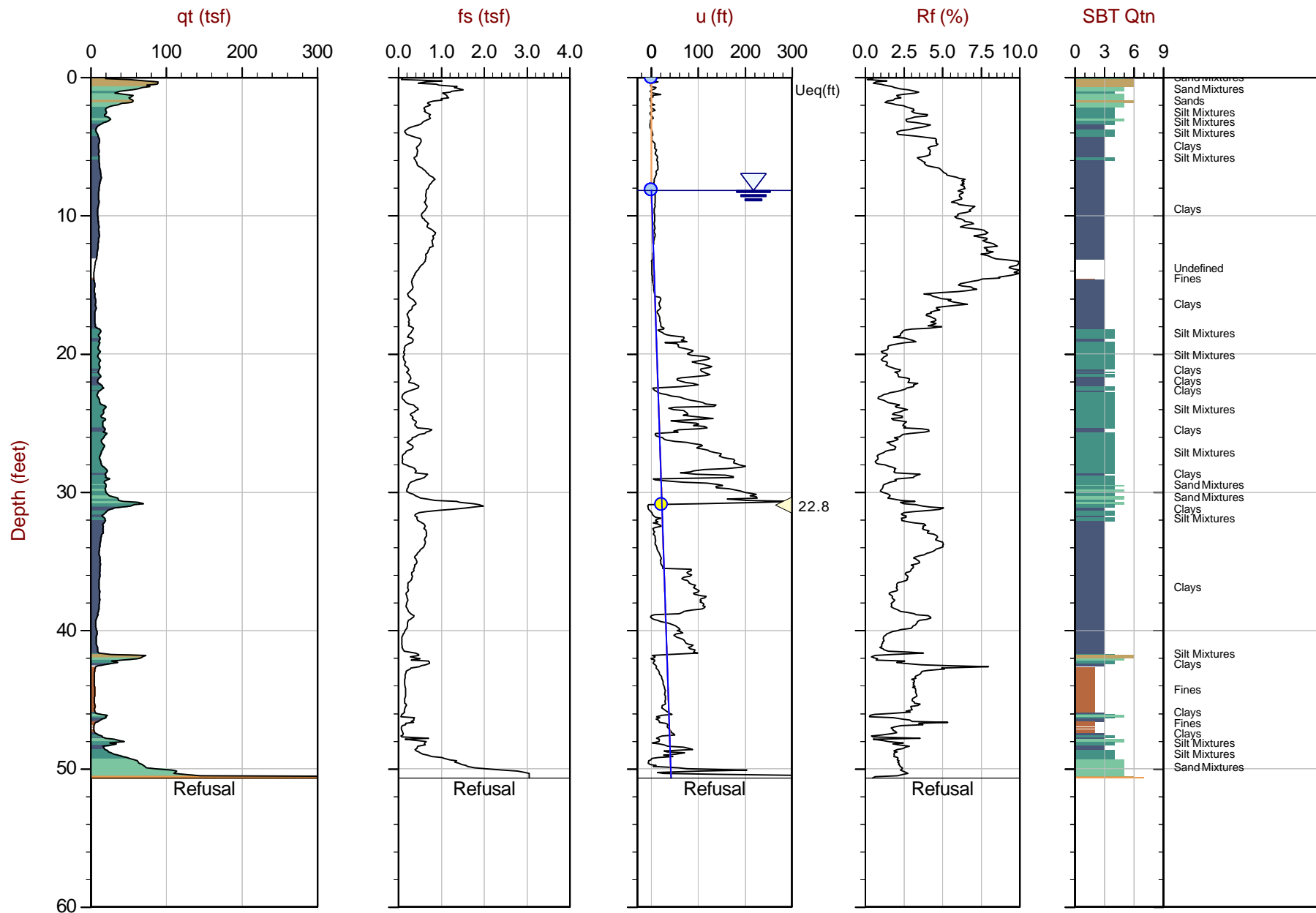
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-20 09:53
Site: Cholla Power Plant

Sounding: CPT-25
Cone: 657:T1500F15U500



Max Depth: 15.450 m / 50.69 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP25.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928437 Long: -110.267658

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line | Water Sample

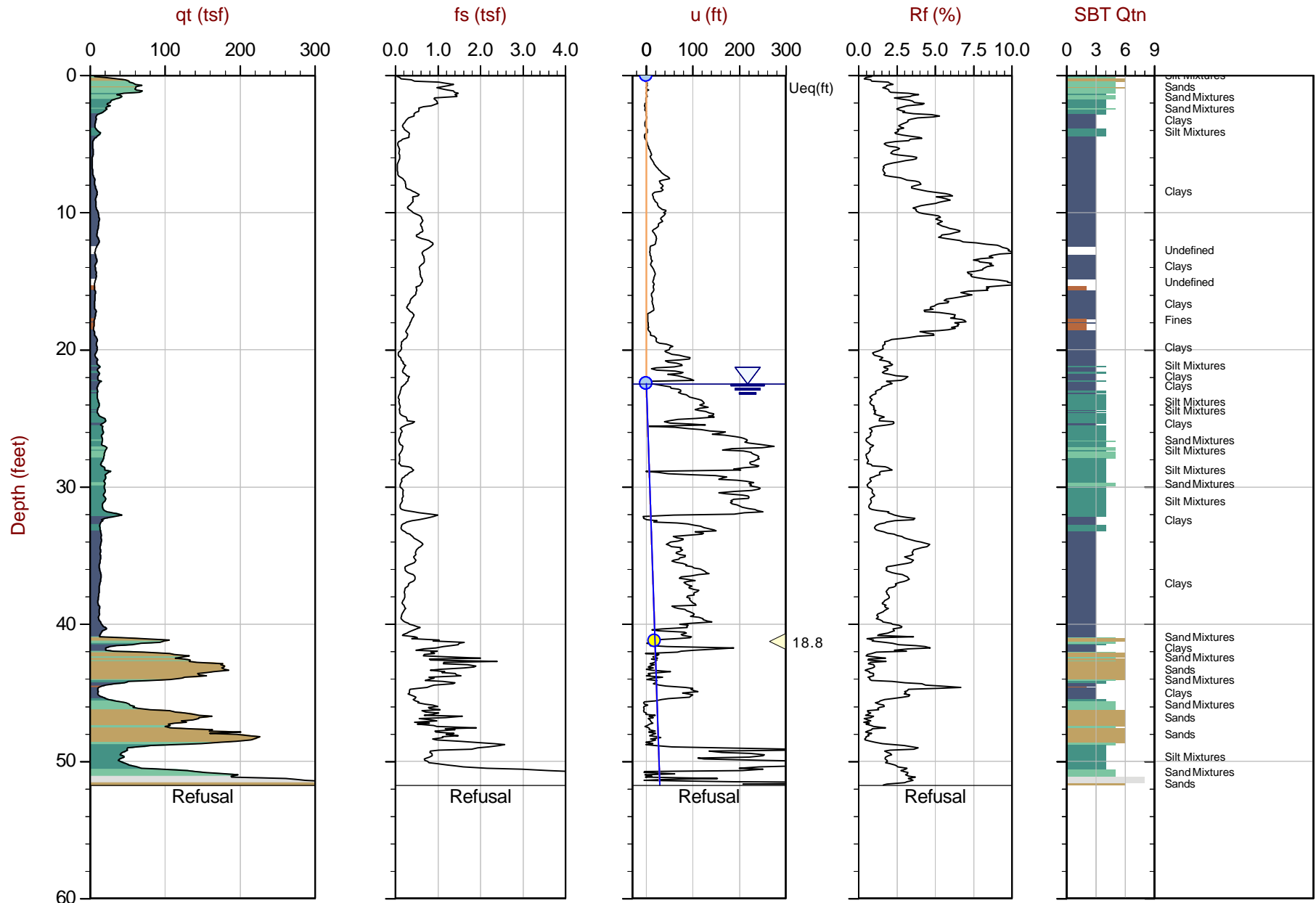
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-20 11:28
Site: Cholla Power Plant

Sounding: CPT-26
Cone: 657:T1500F15U500



Max Depth: 15.775 m / 51.75 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP26.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928306 Long: -110.267504

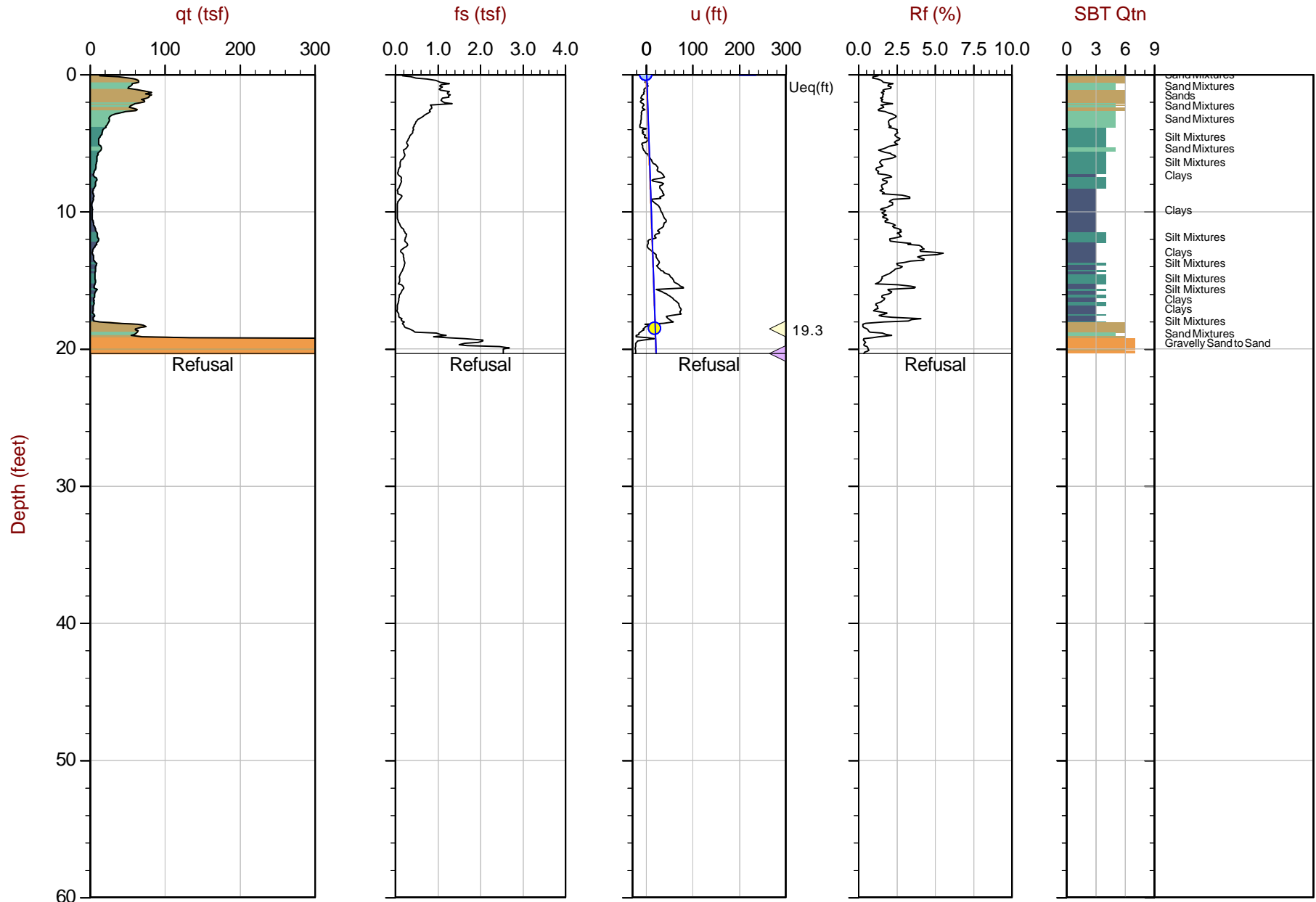
Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line | Water Sample
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-20 12:56
Site: Cholla Power Plant

Sounding: CPT-27
Cone: 657:T1500F15U500



Max Depth: 6.200 m / 20.34 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP27.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928146 Long: -110.267118

Overplot Item: ● Ueq ○ Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

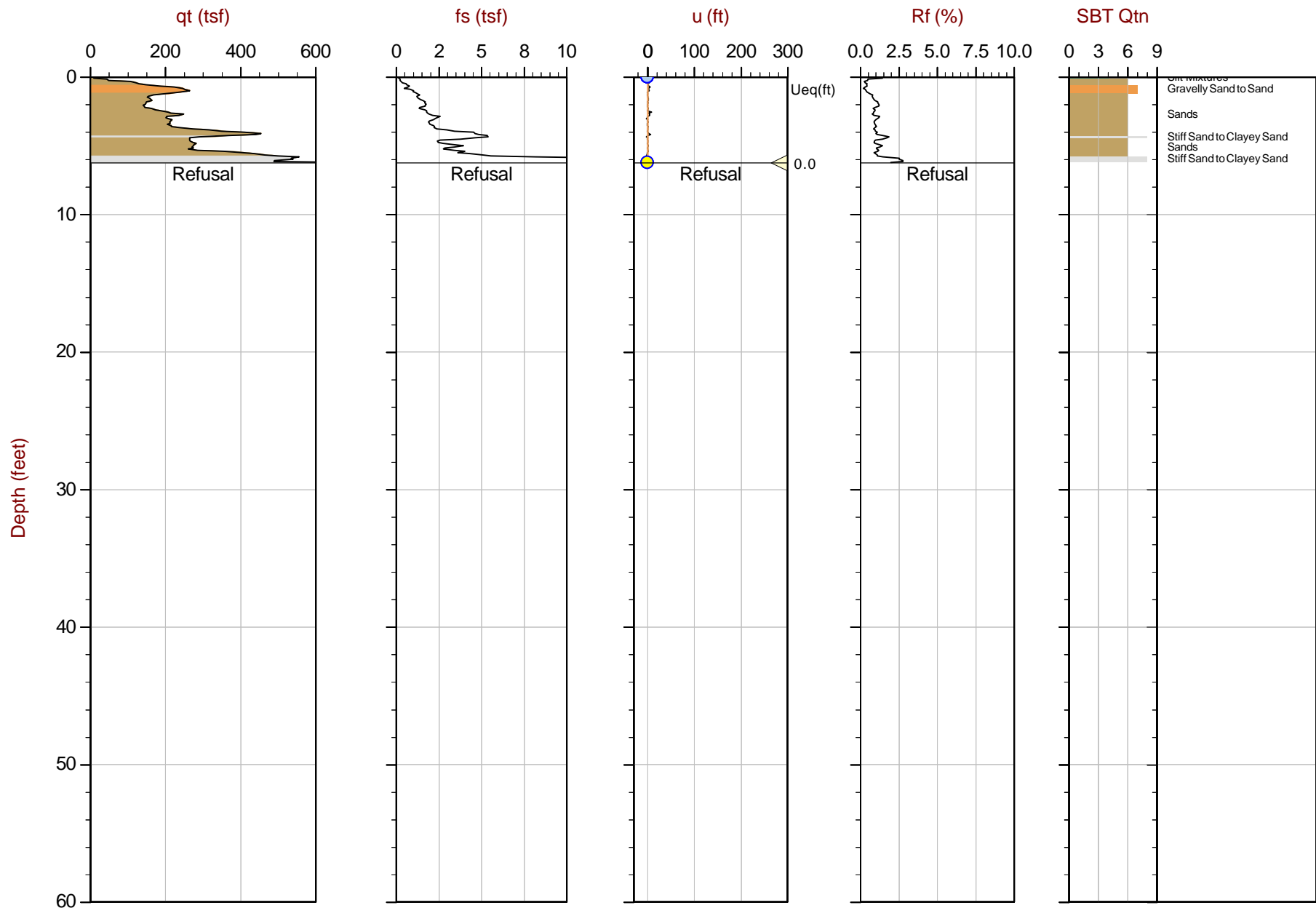
Standard Cone Penetration Test Plots with Expanded Range



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 08:09
Site: Cholla Power Plant

Sounding: CPT-01
Cone: 552:T1500F15U500



Max Depth: 1.900 m / 6.23 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP01.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.932162 Long: -110.271725

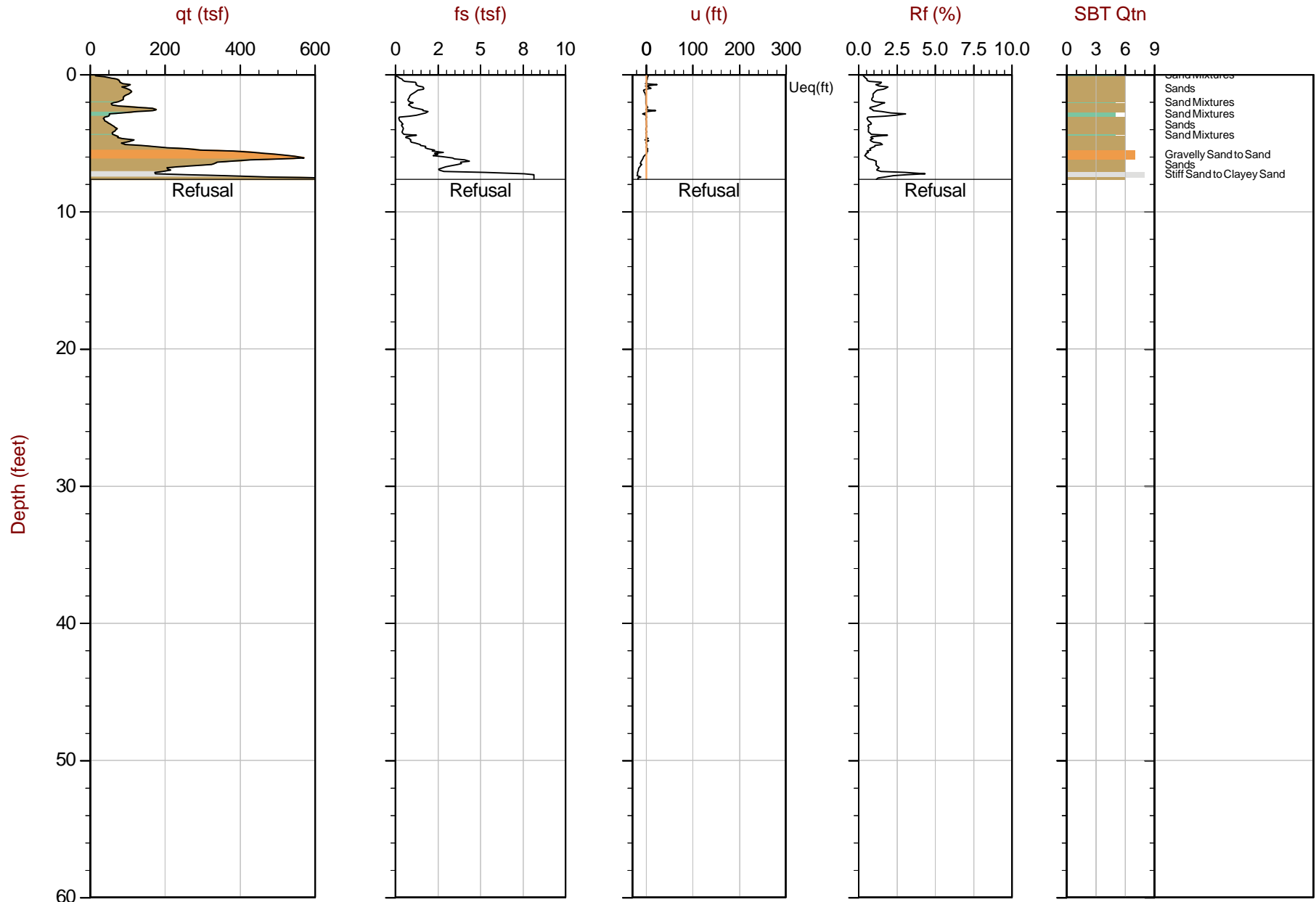
Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 08:46
Site: Cholla Power Plant

Sounding: CPT-03
Cone: 552:T1500F15U500



Max Depth: 2.325 m / 7.63 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP03.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.931641 Long: -110.271208

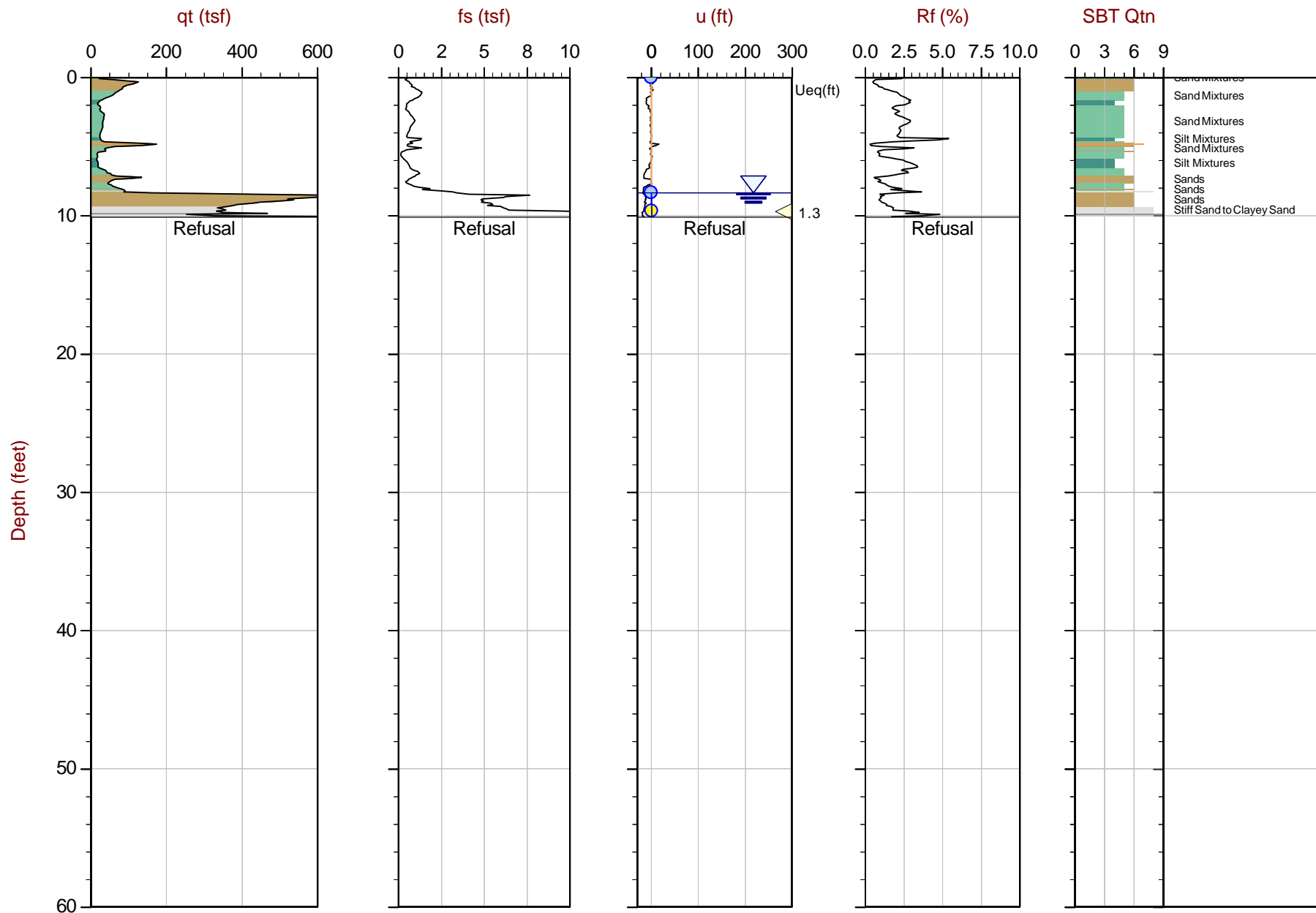
Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 09:23
Site: Cholla Power Plant

Sounding: CPT-05
Cone: 552:T1500F15U500

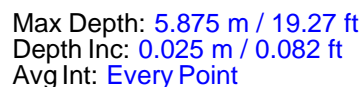


Max Depth: 3.075 m / 10.09 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP05.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.931050 Long: -110.270578

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



File: 20-52-21054_SP07.COR
Unit Wt: SBTQtn (PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.930619 Long: -110.270080

Overplot Item: ● Ueq ○ Assumed Ueq ◀ Dissipation, Ueq achieved ◁ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

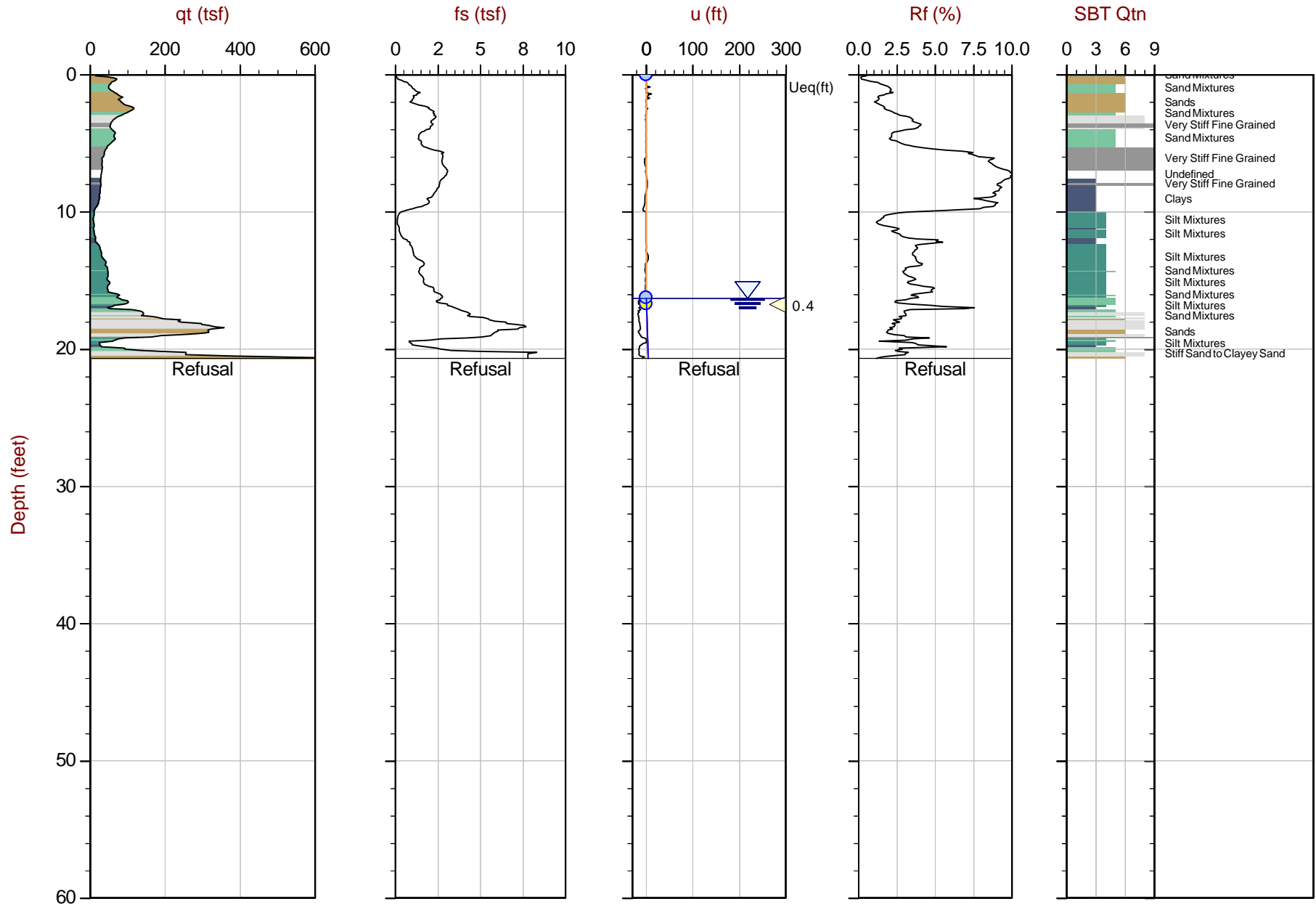
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 11:09
Site: Cholla Power Plant

Sounding: CPT-08
Cone: 552:T1500F15U500



Max Depth: 6.300 m / 20.67 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP08.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.930425 Long: -110.269834

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

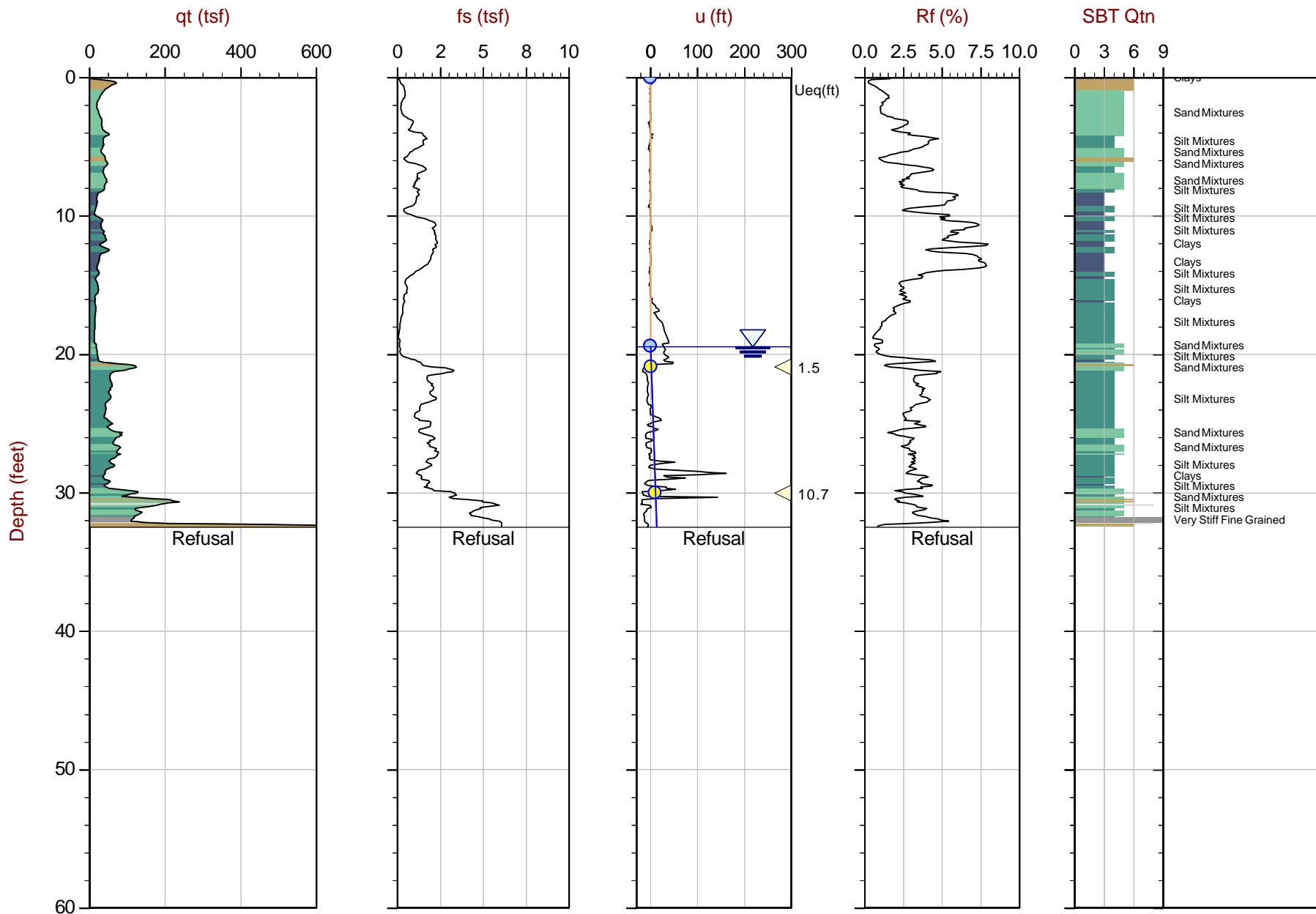
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 12:02
Site: Cholla Power Plant

Sounding: CPT-09
Cone: 552:T1500F15U500



Max Depth: 9.900 m / 32.48 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP09.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.930224 Long: -110.269621

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

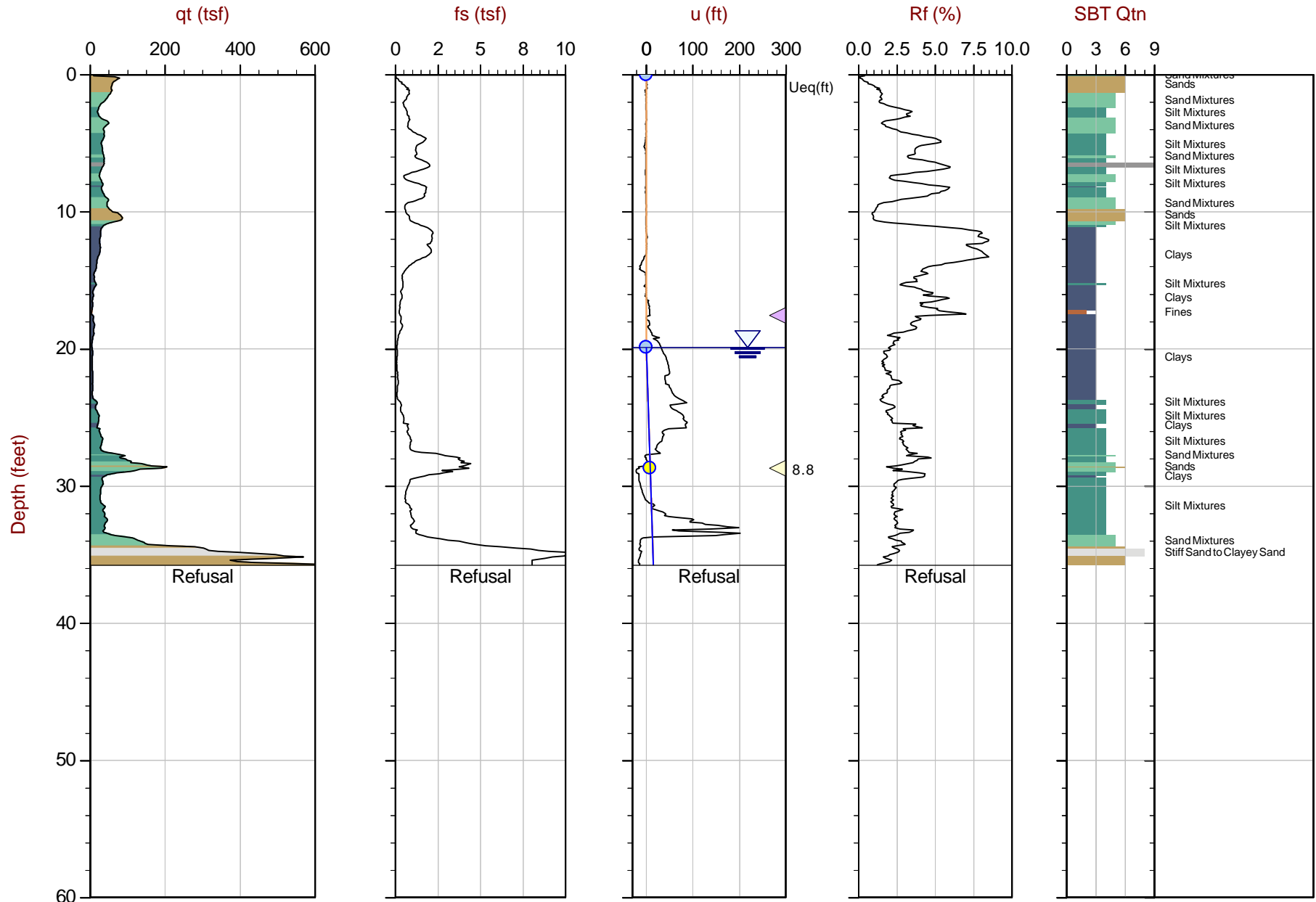
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 13:15
Site: Cholla Power Plant

Sounding: CPT-10
Cone: 552:T1500F15U500



Max Depth: 10.900 m / 35.76 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP10.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.930091 Long: -110.269468

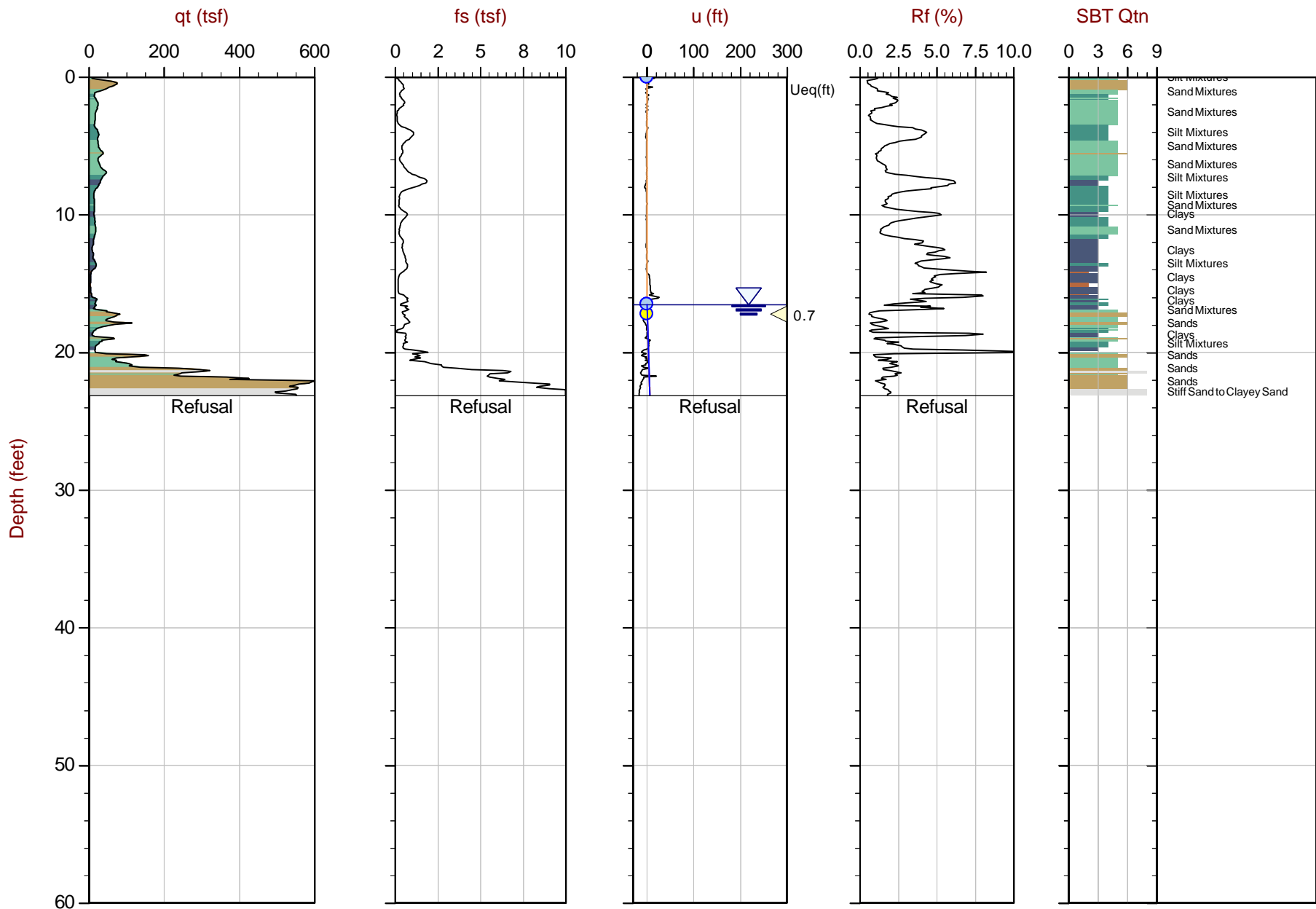
Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line | Water Sample
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 15:02
Site: Cholla Power Plant

Sounding: CPT-11
Cone: 552:T1500F15U500



Max Depth: 7.050 m / 23.13 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP11.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929756 Long: -110.269168

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

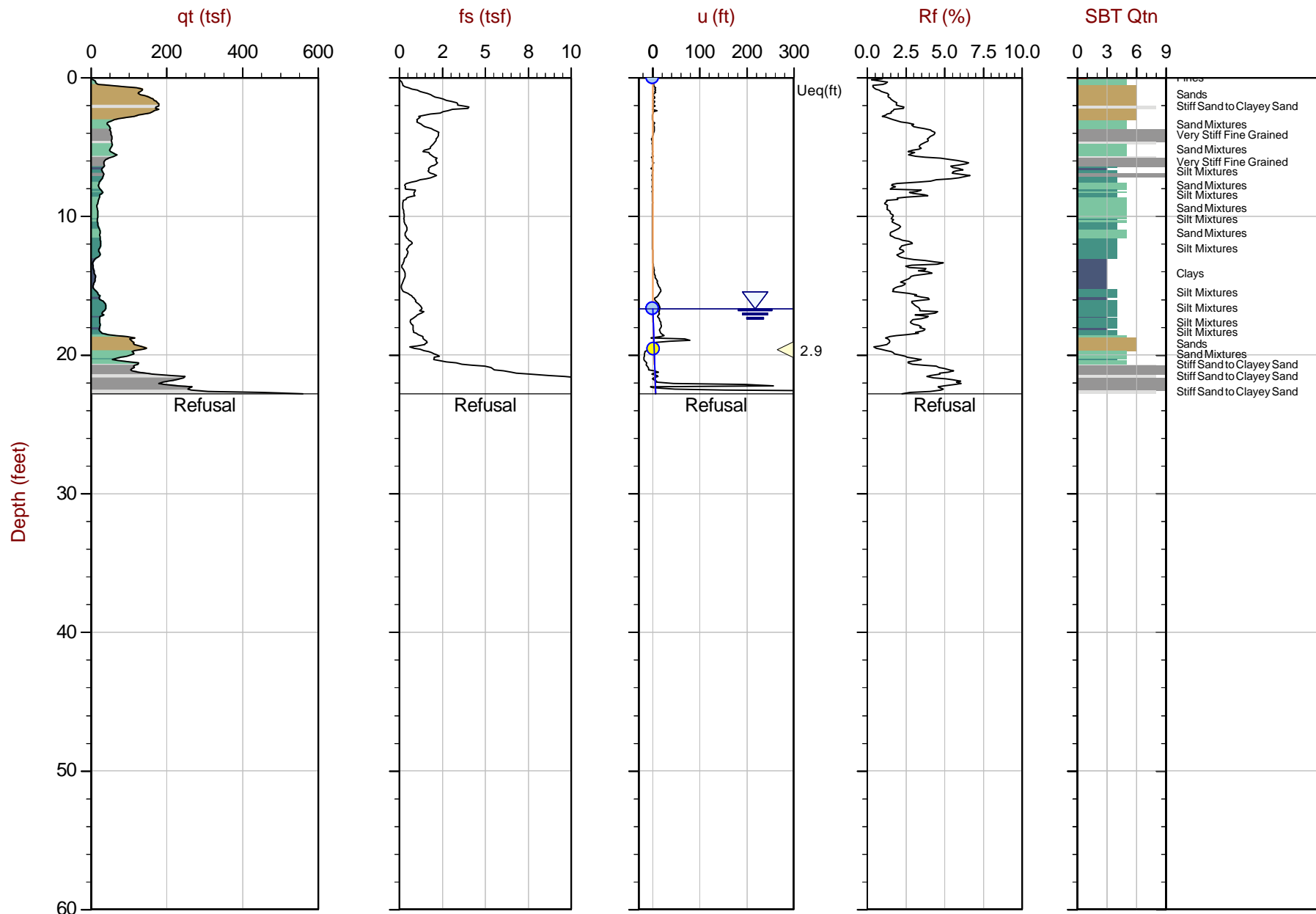
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-16 08:09
Site: Cholla Power Plant

Sounding: CPT-12
Cone: 552:T1500F15U500



Max Depth: 6.950 m / 22.80 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP12.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929575 Long: -110.268996

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

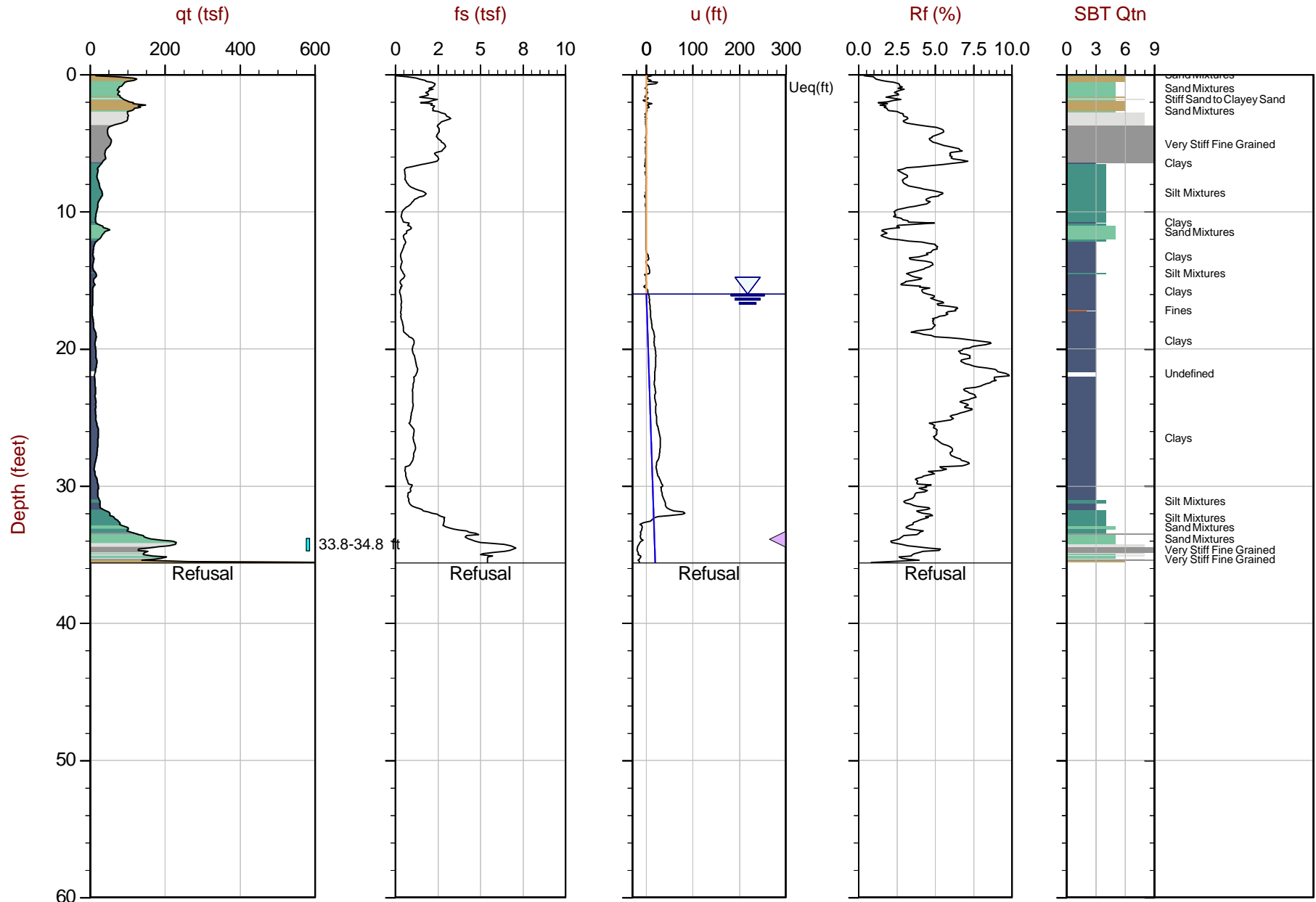
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-16 09:23
Site: Cholla Power Plant

Sounding: CPT-13
Cone: 552:T1500F15U500



Max Depth: 10.850 m / 35.60 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP13.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929371 Long: -110.268696

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▲ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

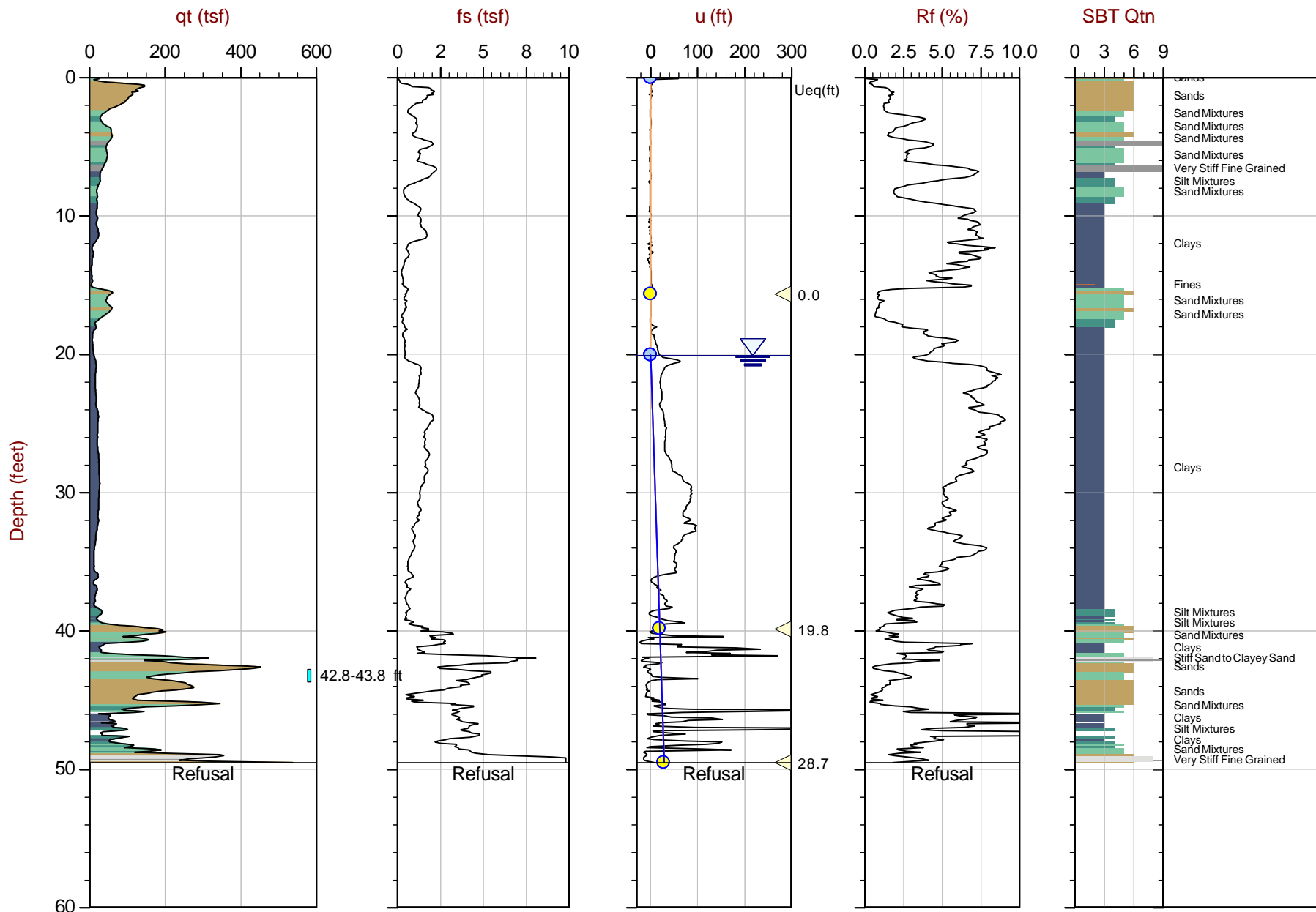
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-16 10:34
Site: Cholla Power Plant

Sounding: CPT-14
Cone: 552:T1500F15U500



Max Depth: 15.100 m / 49.54 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP14.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929196 Long: -110.268458

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

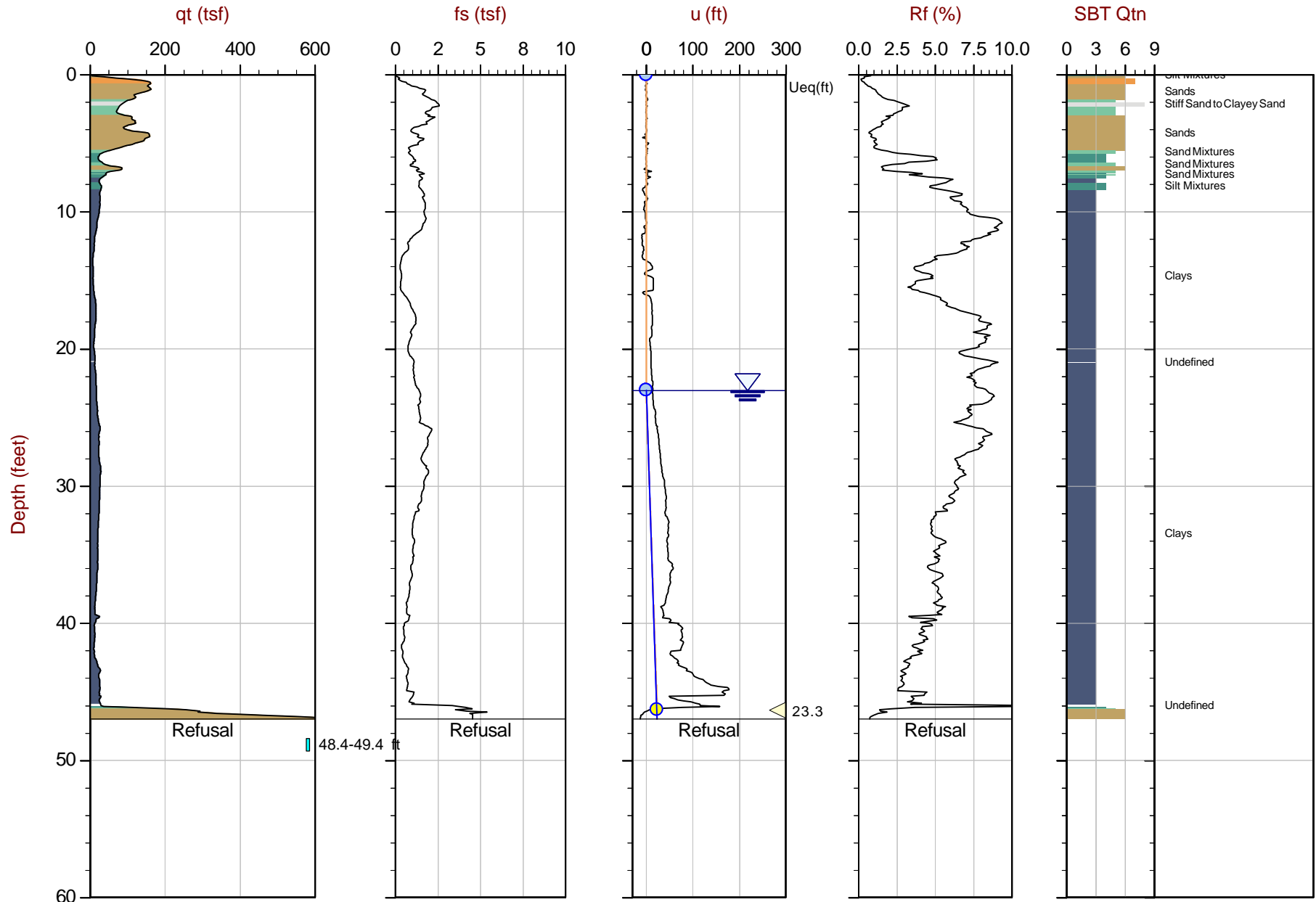
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-16 12:28
Site: Cholla Power Plant

Sounding: CPT-15
Cone: 552:T1500F15U500



Max Depth: 14.325 m / 47.00 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP15.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929053 Long: -110.268442

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

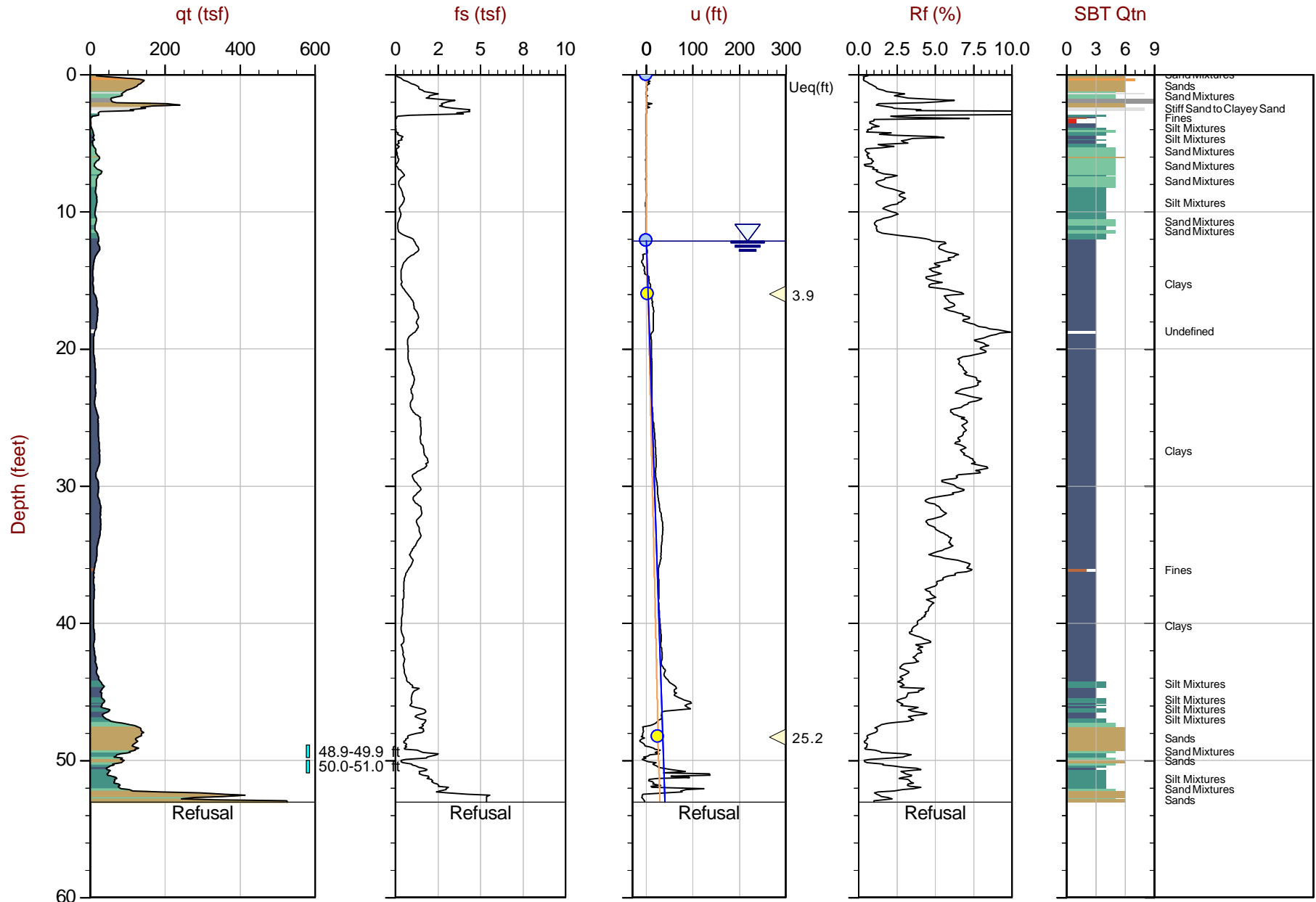
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-14 14:26
Site: Cholla Power Plant

Sounding: CPT-16
Cone: 552:T1500F15U500



Max Depth: 16.175 m / 53.07 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP16.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929038 Long: -110.268309

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

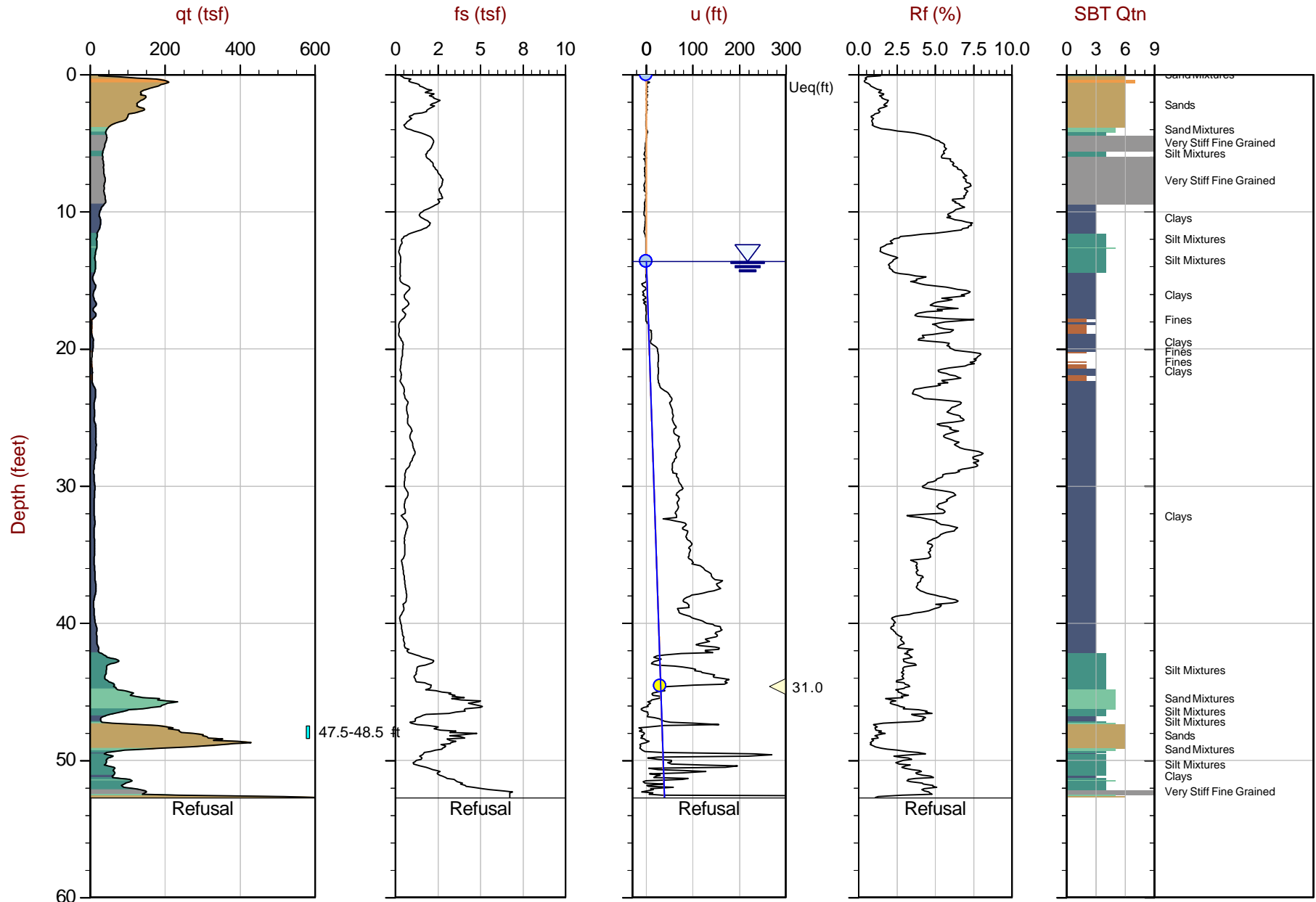
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-14 12:46
Site: Cholla Power Plant

Sounding: CPT-17
Cone: 552:T1500F15U500



Max Depth: 16.075 m / 52.74 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP17.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928893 Long: -110.268168

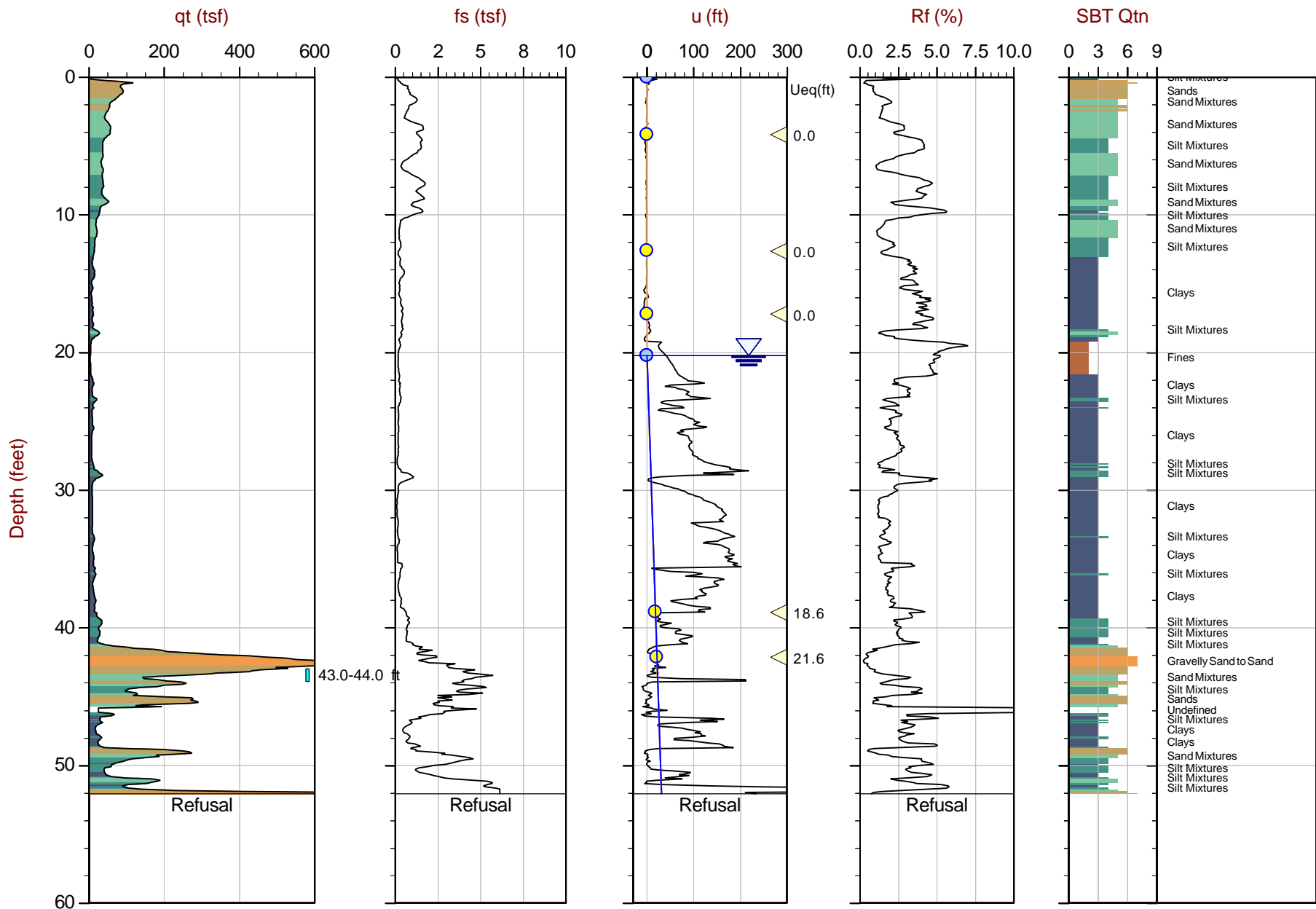
Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line █ Water Sample
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-14 10:41
Site: Cholla Power Plant

Sounding: CPT-18
Cone: 552:T1500F15U500



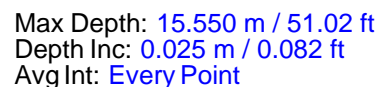
Max Depth: 15.875 m / 52.08 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP18.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928743 Long: -110.267951

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



File: 20-52-21054_SP19.COR
Unit Wt: SBTQtn (PKR2009)

SBT: [Robertson, 2009 and 2010](#)
 Coords: [Lat: 34.928568](#) [Long: -110.267736](#)

Overplot Item: ● Ueq ● Assumed Ueq ◀ Dissipation, Ueq achieved ◀ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

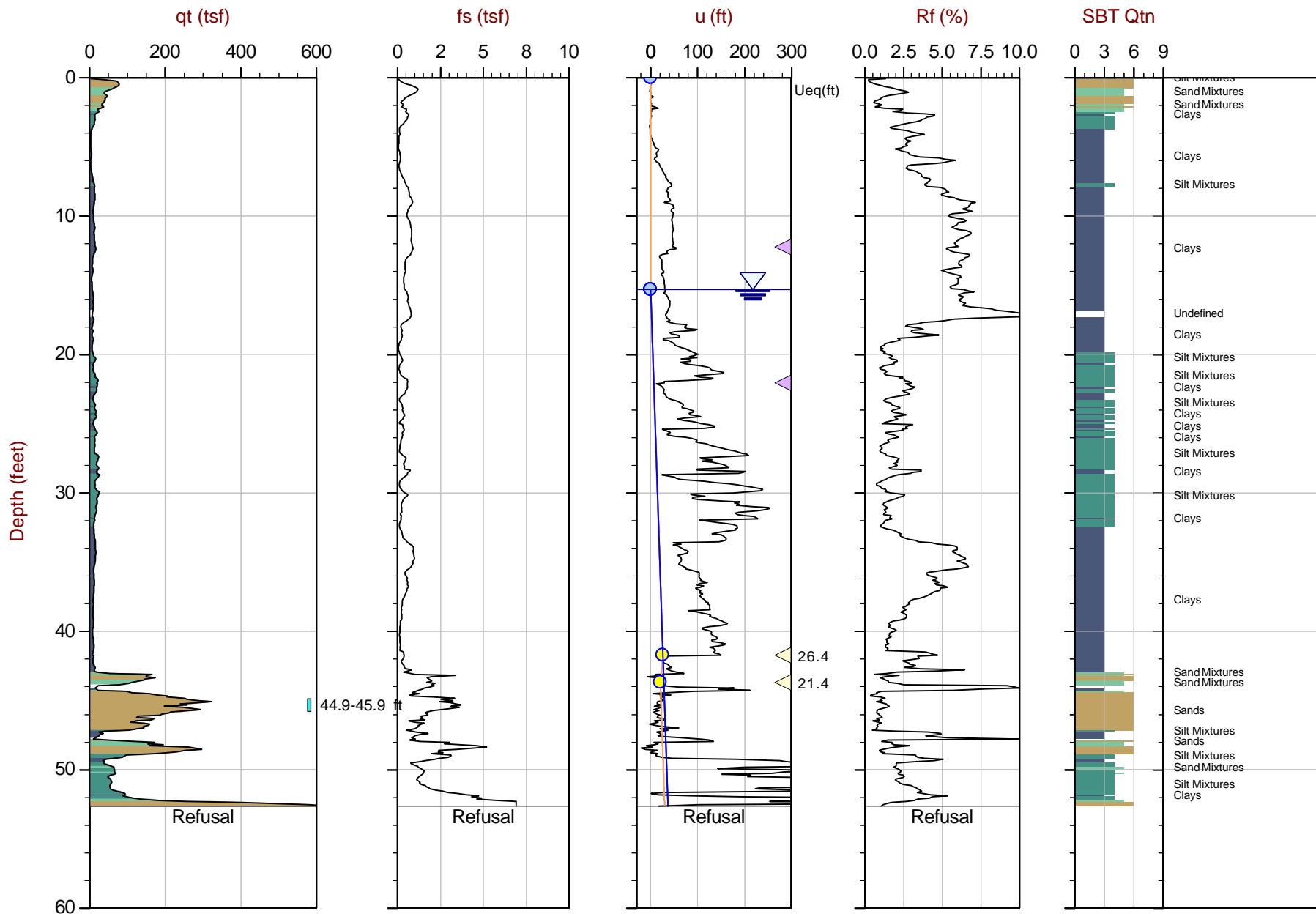
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-13 11:34
Site: Cholla Power Plant

Sounding: CPT-20
Cone: 552:T1500F15U500



Max Depth: 16.050 m / 52.66 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP20.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928437 Long: -110.267551

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

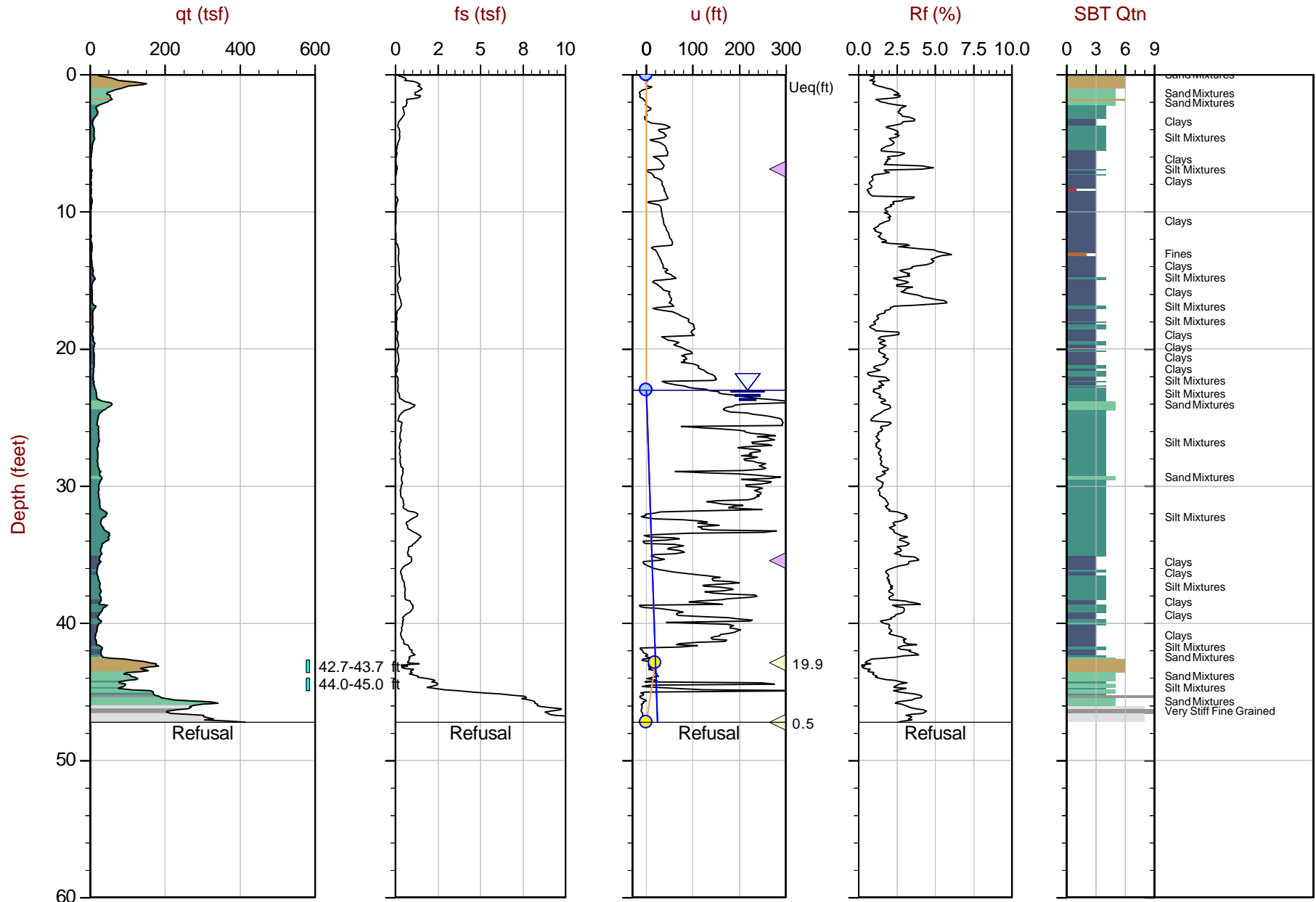
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-13 14:09
Site: Cholla Power Plant

Sounding: CPT-21
Cone: 552:T1500F15U500



Max Depth: 14.400 m / 47.24 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP21.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928272 Long: -110.267246

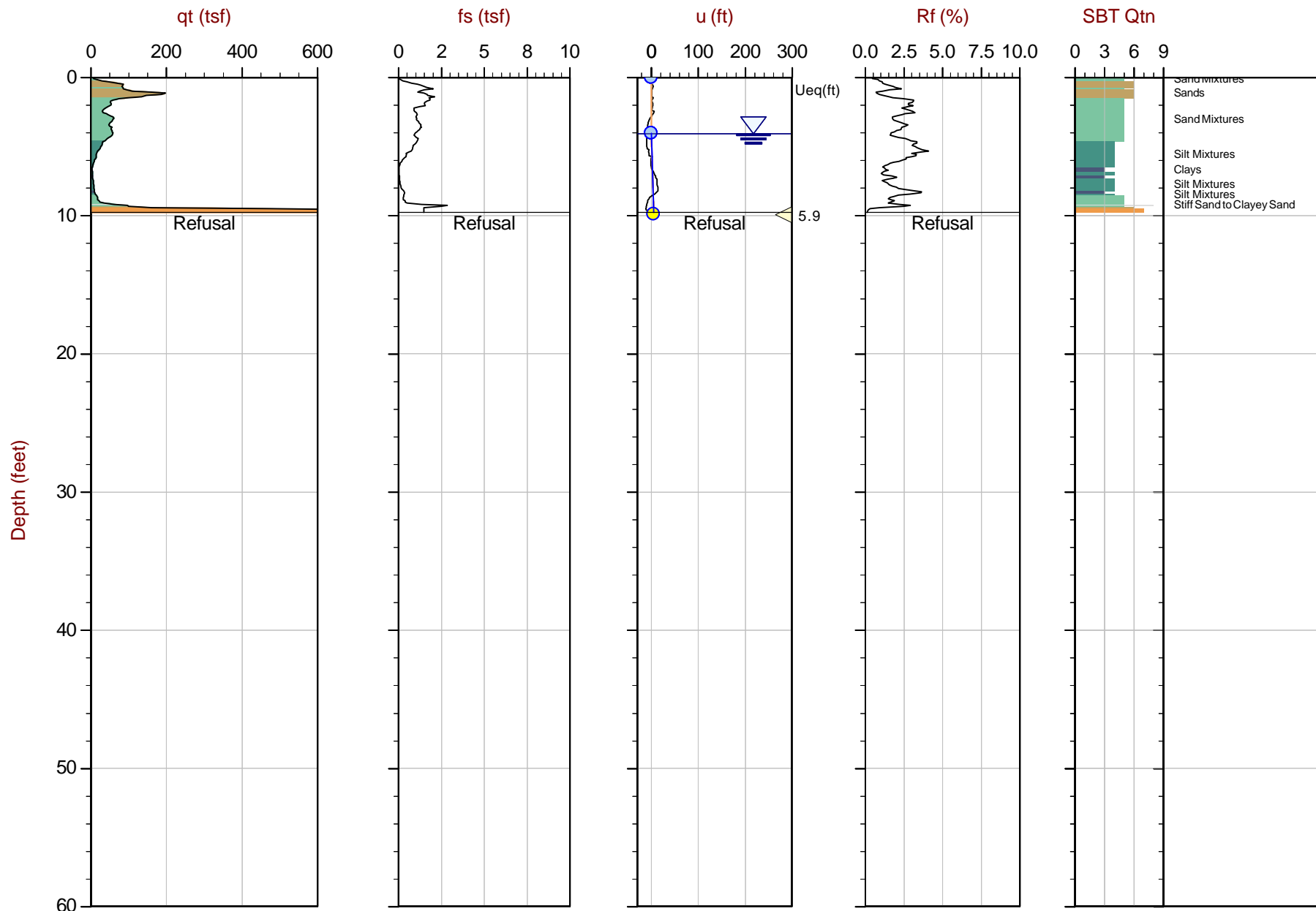
Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-13 11:25
Site: Cholla Power Plant

Sounding: CPT-22
Cone: 552:T1500F15U500



Max Depth: 2.975 m / 9.76 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP22.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928016 Long: -110.266925

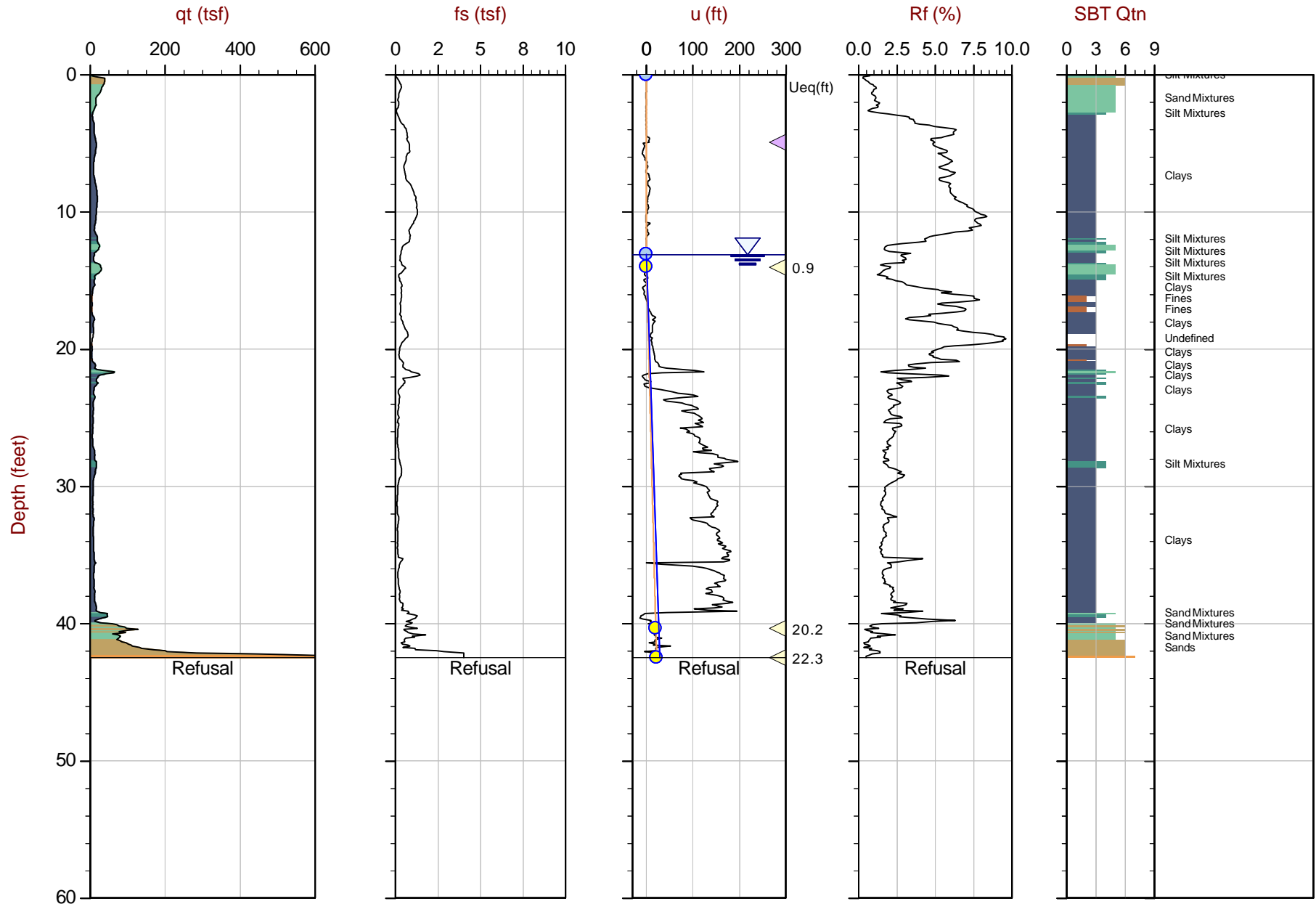
Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-16 14:09
Site: Cholla Power Plant

Sounding: CPT-23
Cone: 552:T1500F15U500



Max Depth: 12.950 m / 42.49 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP23.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928670 Long: -110.267932

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

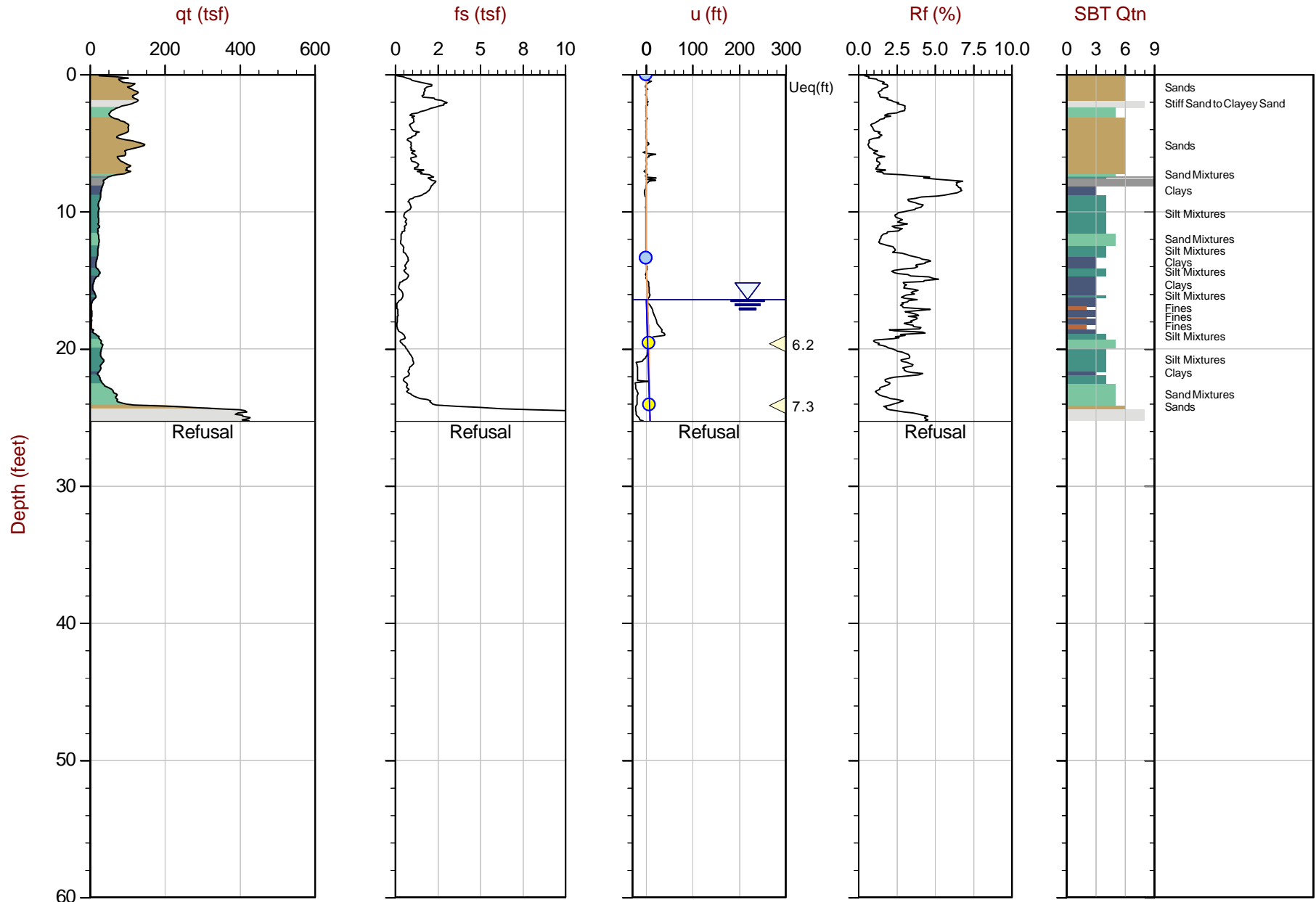
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-19 15:11
Site: Cholla Power Plant

Sounding: CPT-24
Cone: 552:T1500F15U500



Max Depth: 7.700 m / 25.26 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP24.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929637 Long: -110.269138

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

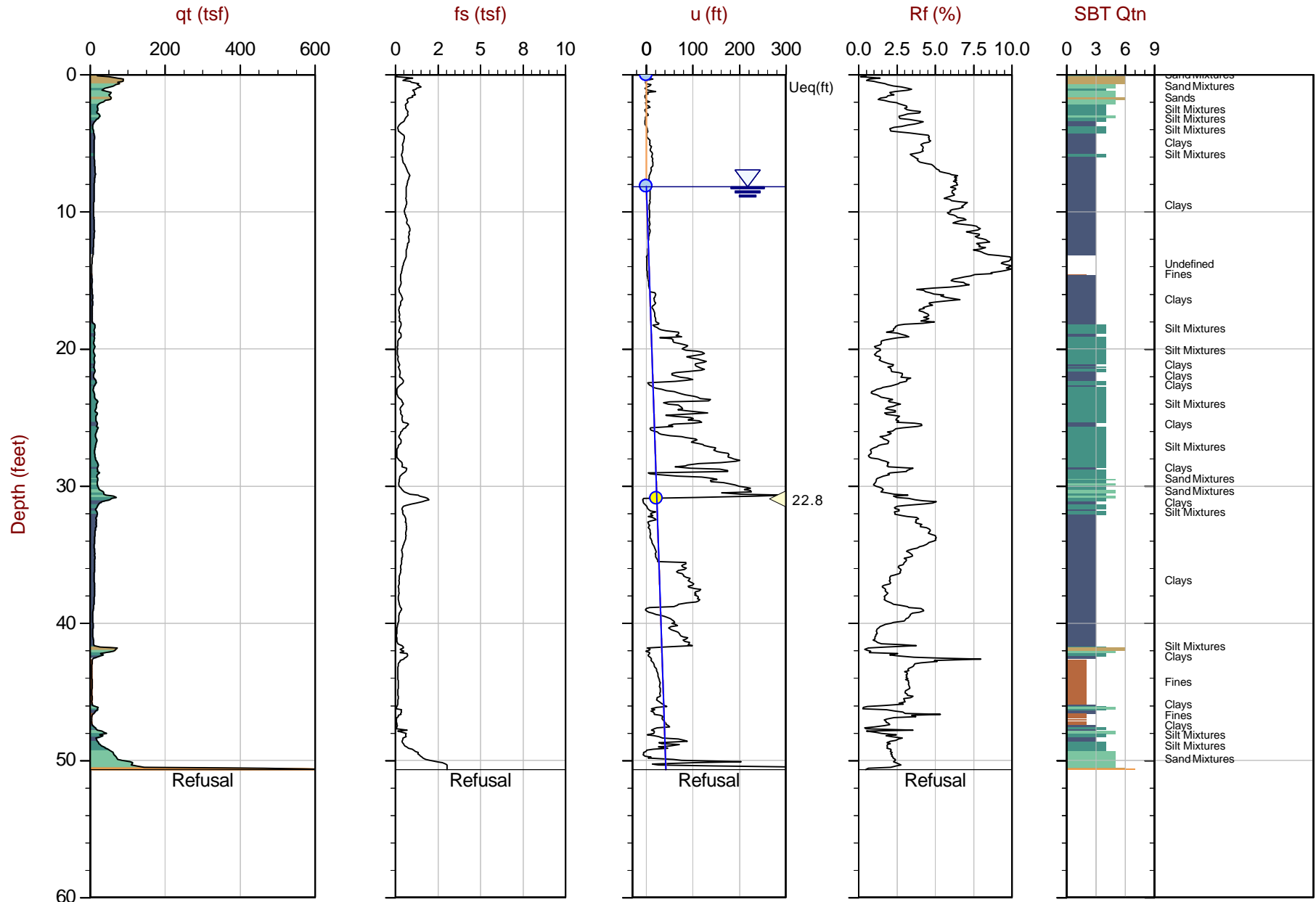
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-20 09:53
Site: Cholla Power Plant

Sounding: CPT-25
Cone: 657:T1500F15U500



Max Depth: 15.450 m / 50.69 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP25.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928437 Long: -110.267658

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



File: 20-52-21054_SP26.COR
Unit Wt: SBTQtn (PKR2009)

SBT: [Robertson, 2009 and 2010](#)
 Coords: Lat: [34.928306](#) Long: [-110.267504](#)

Overplot Item: ● Ueq ● Assumed Ueq ◀ Dissipation, Ueq achieved ◀ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

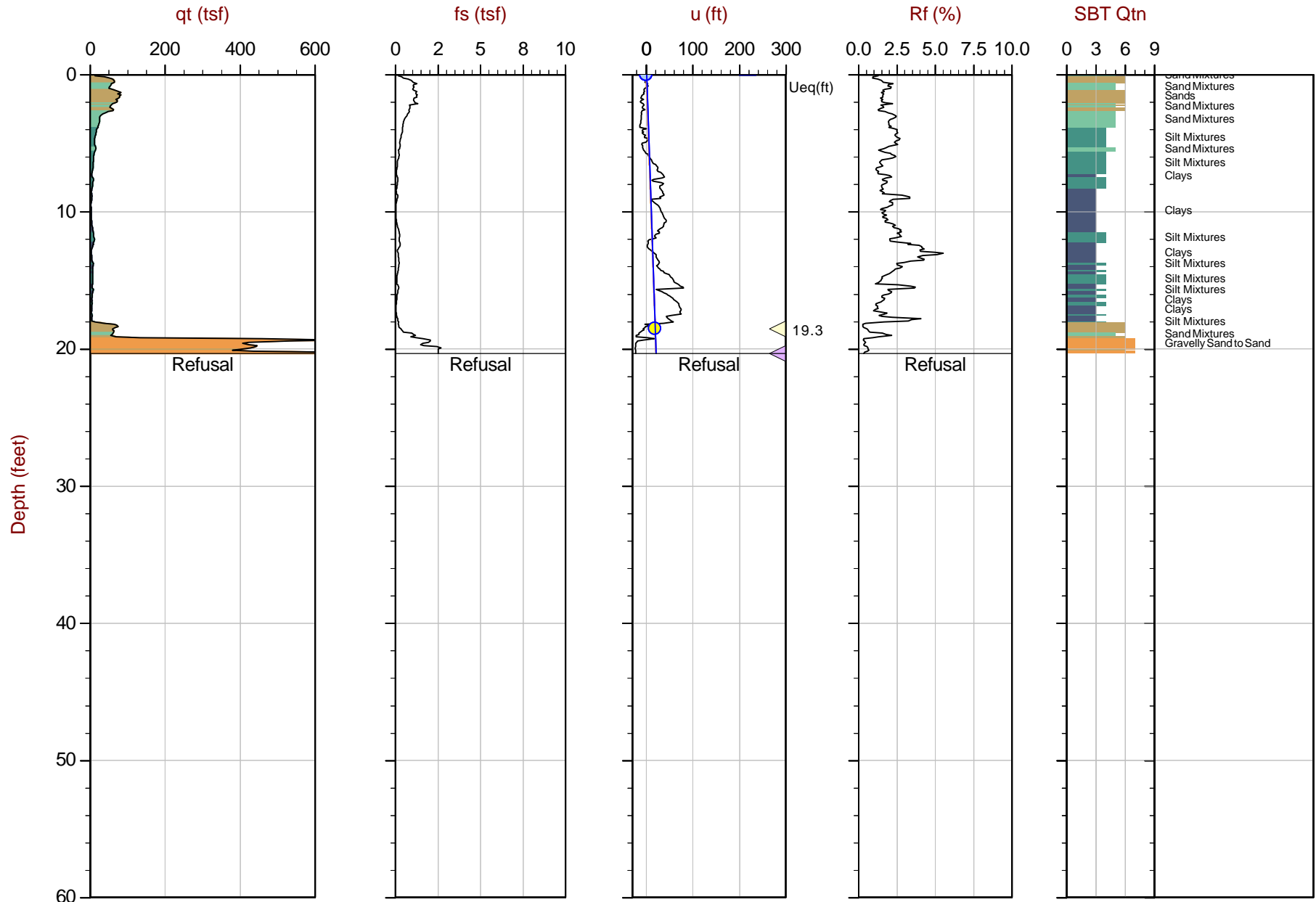
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-20 12:56
Site: Cholla Power Plant

Sounding: CPT-27
Cone: 657:T1500F15U500



Max Depth: 6.200 m / 20.34 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP27.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928146 Long: -110.267118

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

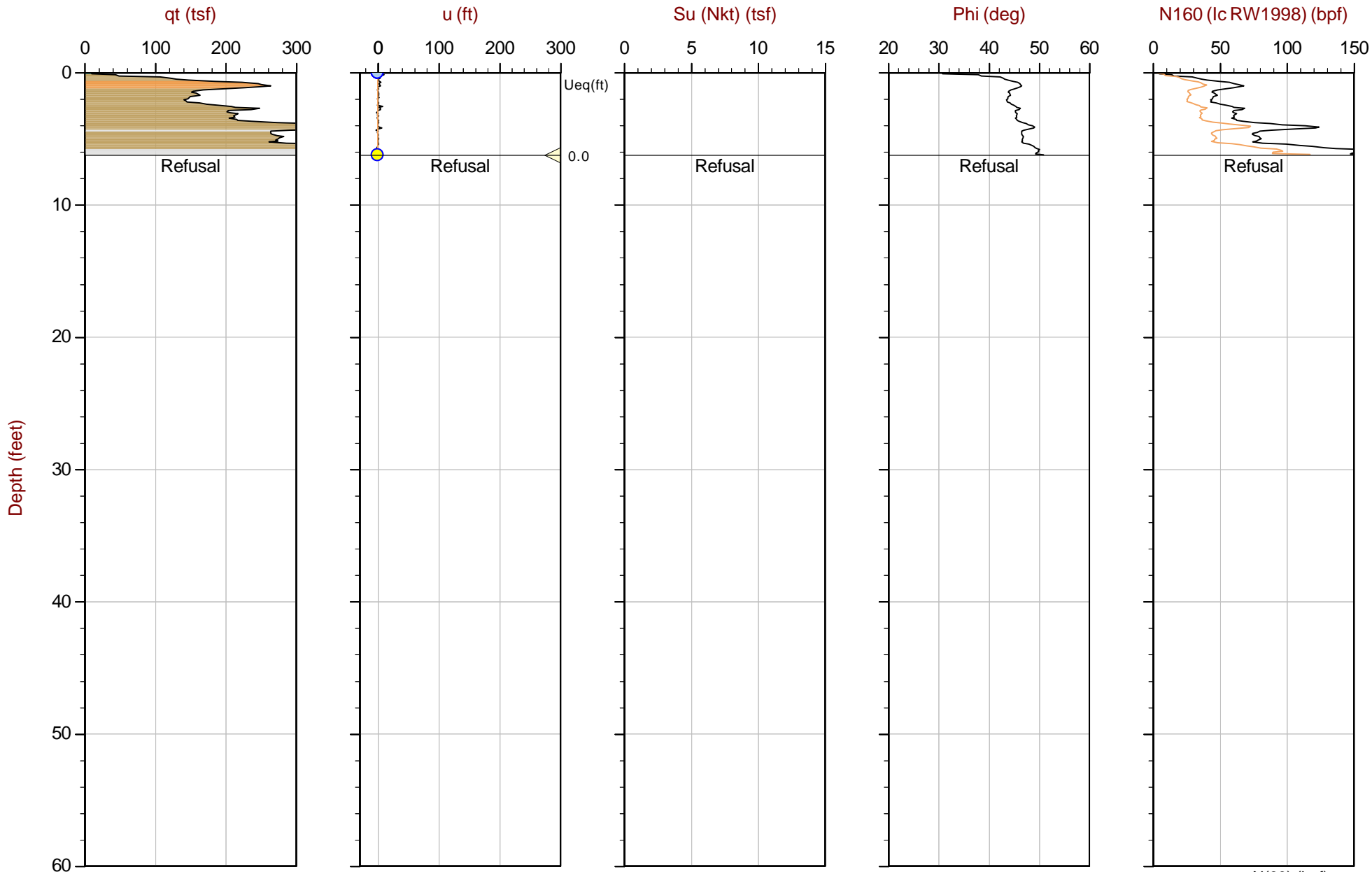
Advanced Cone Penetration Test Plots with $S_u(N_{kt})$, Φ , and $N_1(60)_{lc}$



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 08:09
Site: Cholla Power Plant

Sounding: CPT-01
Cone: 552:T1500F15U500



Max Depth: 1.900 m / 6.23 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP01.COR
Unit Wt: SBTQtn(PKR2009)
Su Nkt: 15.0

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.932162 Long: -110.271725

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

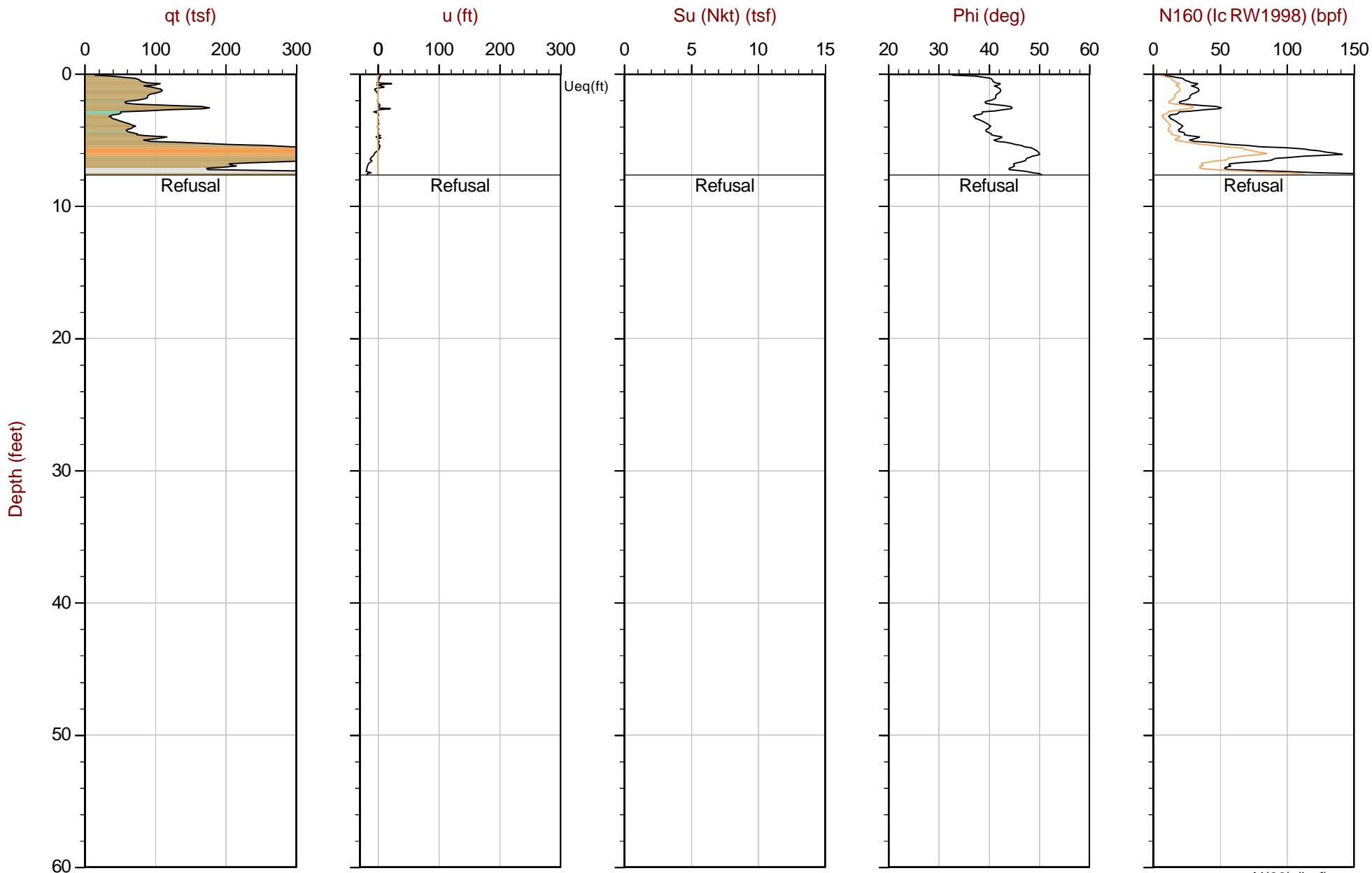
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 08:46
Site: Cholla Power Plant

Sounding: CPT-03
Cone: 552:T1500F15U500



Max Depth: 2.325 m / 7.63 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP03.COR
Unit Wt: SBTQtn(PKR2009)
Su Nkt: 15.0

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.931641 Long: -110.271208

Overplot Item: ● Ueq ○ Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

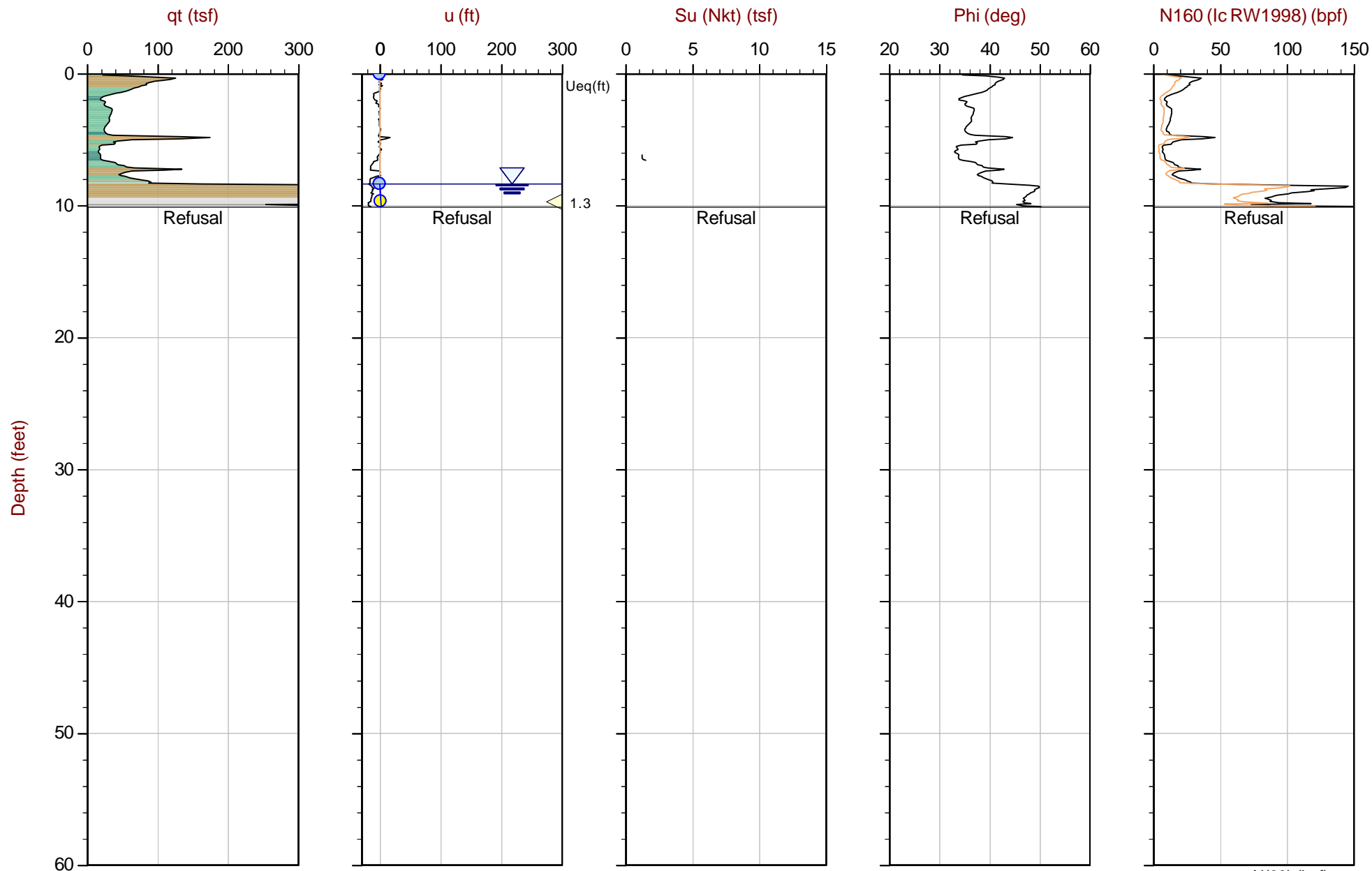
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 09:23
Site: Cholla Power Plant

Sounding: CPT-05
Cone: 552:T1500F15U500



Max Depth: 3.075 m / 10.09 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP05.COR
Unit Wt: SBTQtn(PKR2009)
Su Nkt: 15.0

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.931050 Long: -110.270578

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

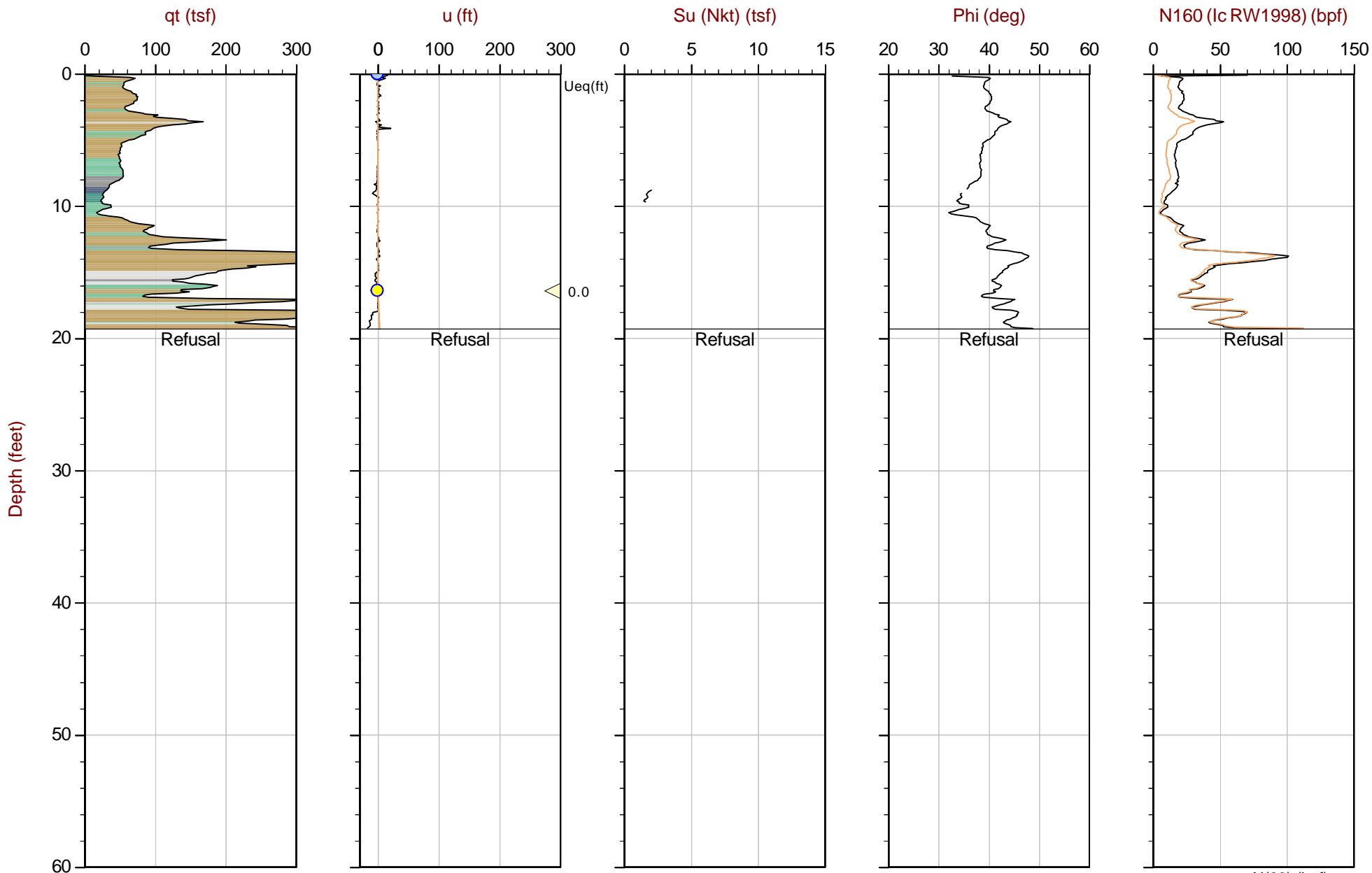
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 10:16
Site: Cholla Power Plant

Sounding: CPT-07
Cone: 552:T1500F15U500



Max Depth: 5.875 m / 19.27 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP07.COR
Unit Wt: SBTQtn(PKR2009)
Su Nkt: 15.0

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.930619 Long: -110.270080

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

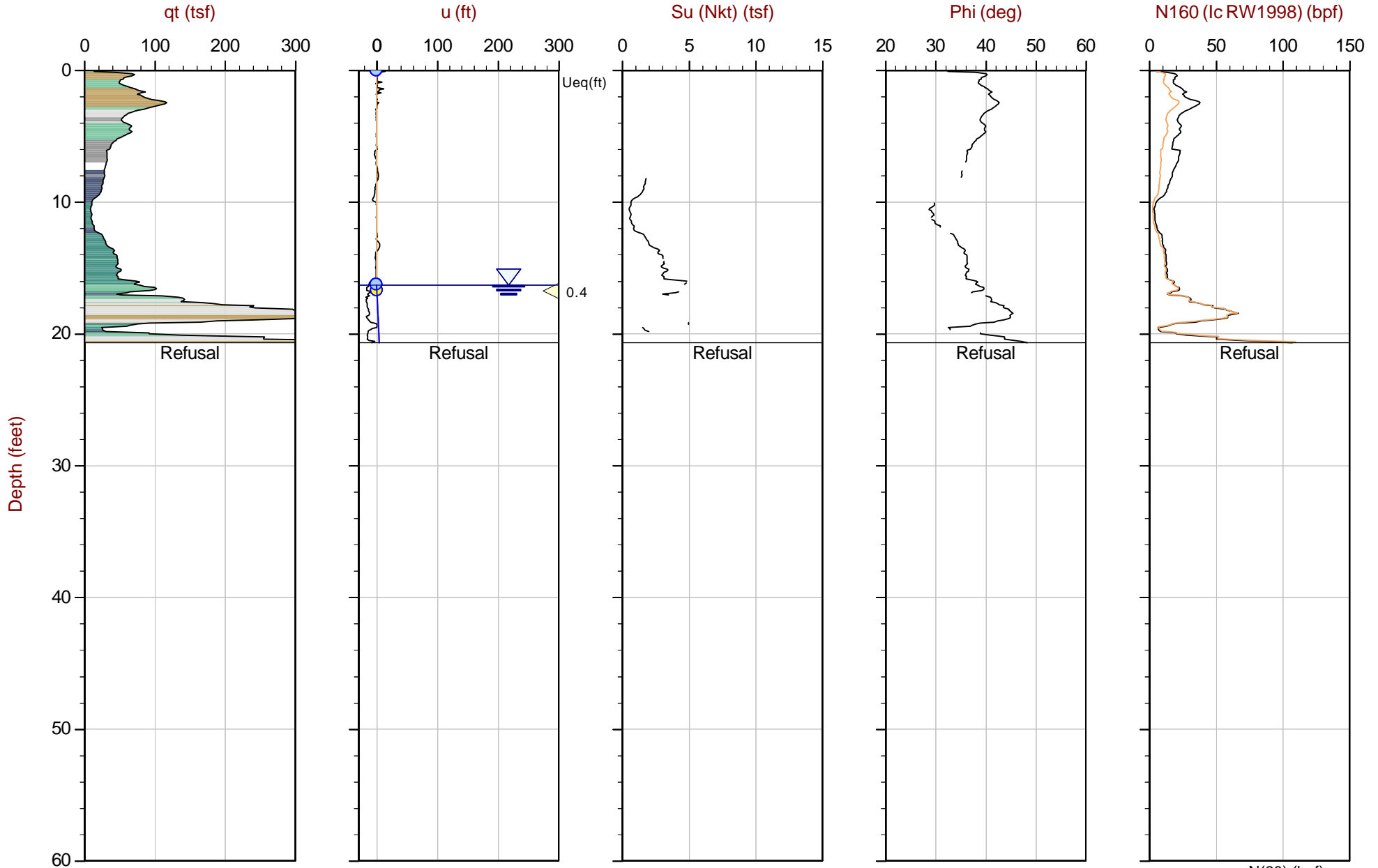
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 11:09
Site: Cholla Power Plant

Sounding: CPT-08
Cone: 552:T1500F15U500



Max Depth: 6.300 m / 20.67 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP08.COR
Unit Wt: SBTQn(PKR2009)
Su Nkt: 15.0

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.930425 Long: -110.269834

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

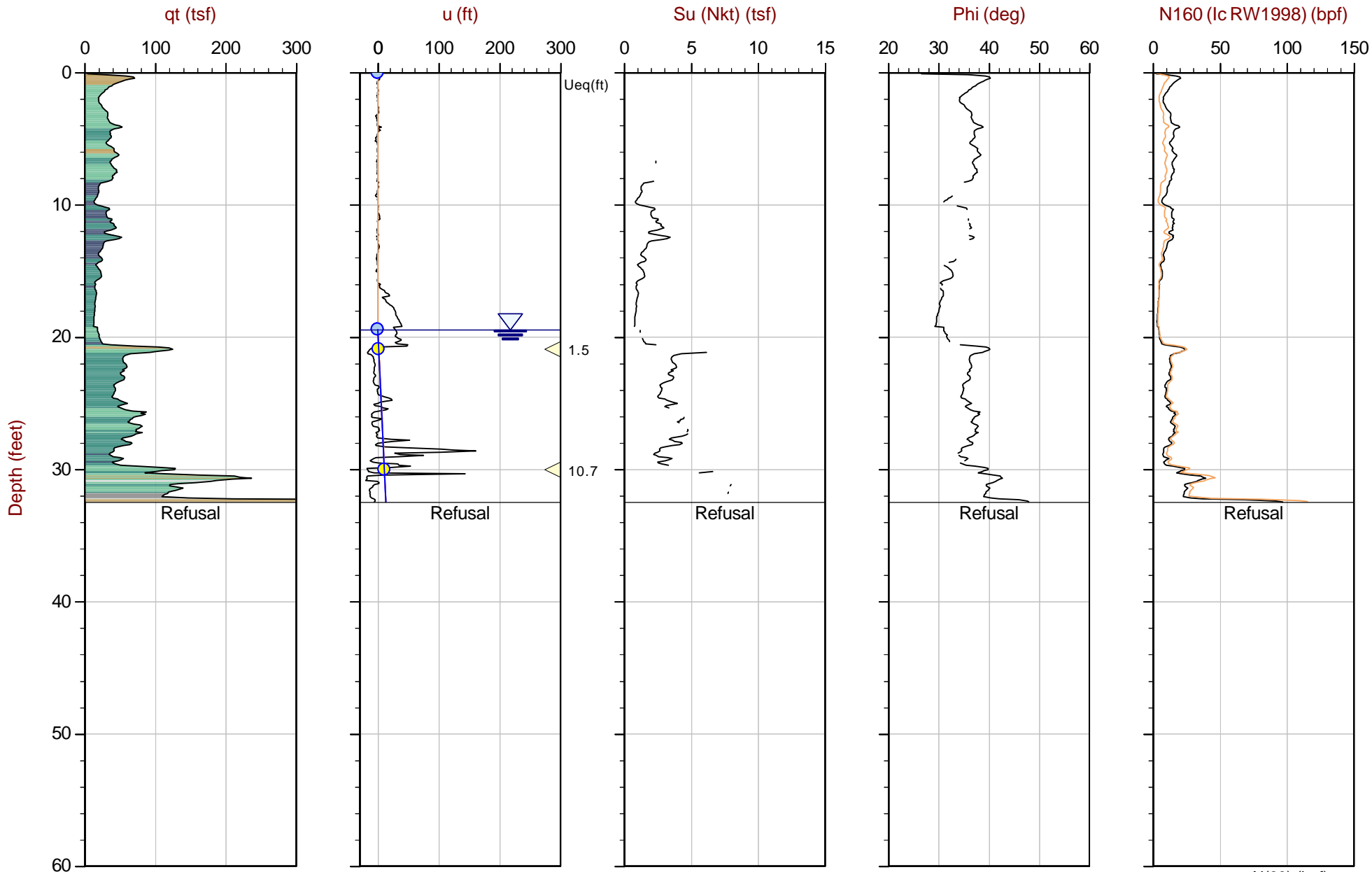
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 12:02
Site: Cholla Power Plant

Sounding: CPT-09
Cone: 552:T1500F15U500



Max Depth: 9.900 m / 32.48 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP09.COR
Unit Wt: SBTQtn(PKR2009)
Su Nkt: 15.0

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.930224 Long: -110.269621

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▲ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

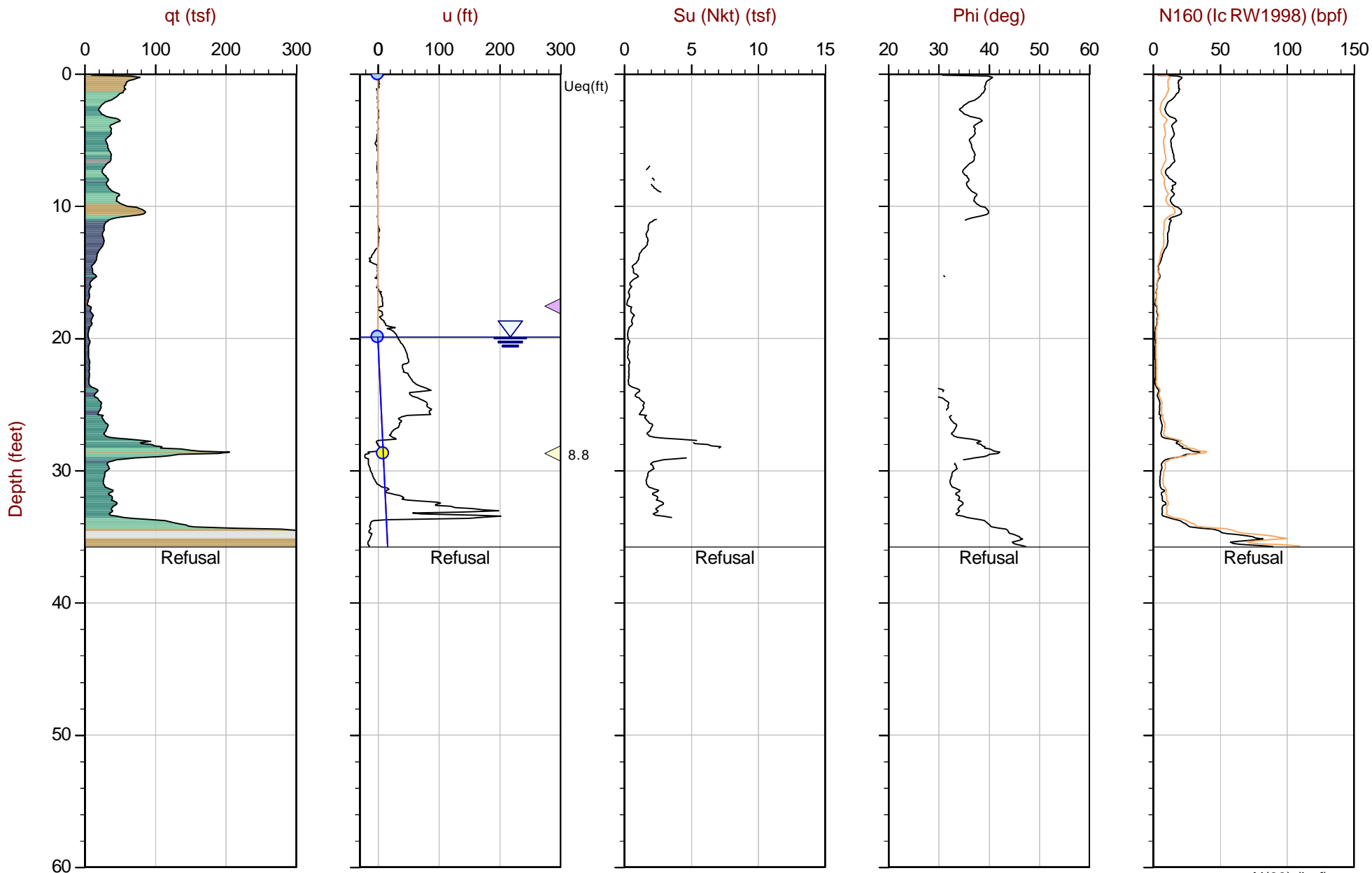
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 13:15
Site: Cholla Power Plant

Sounding: CPT-10
Cone: 552:T1500F15U500



Max Depth: 10.900 m / 35.76 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP10.COR
Unit Wt: SBTQtn(PKR2009)
Su Nkt: 15.0

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.930091 Long: -110.269468

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

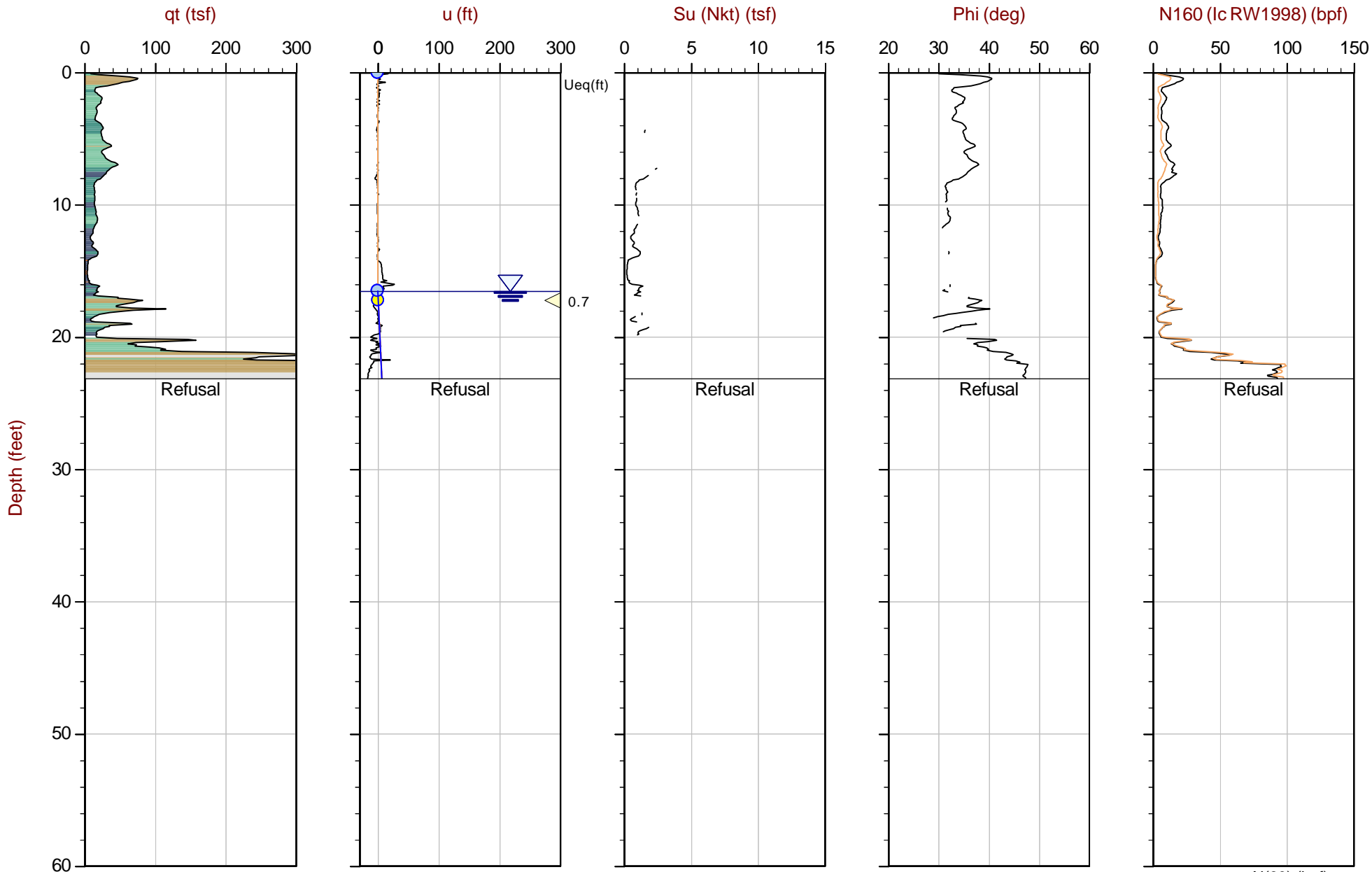
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 15:02
Site: Cholla Power Plant

Sounding: CPT-11
Cone: 552:T1500F15U500



Max Depth: 7.050 m / 23.13 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP11.COR
Unit Wt: SBTQtn(PKR2009)
Su Nkt: 15.0

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929756 Long: -110.269168

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

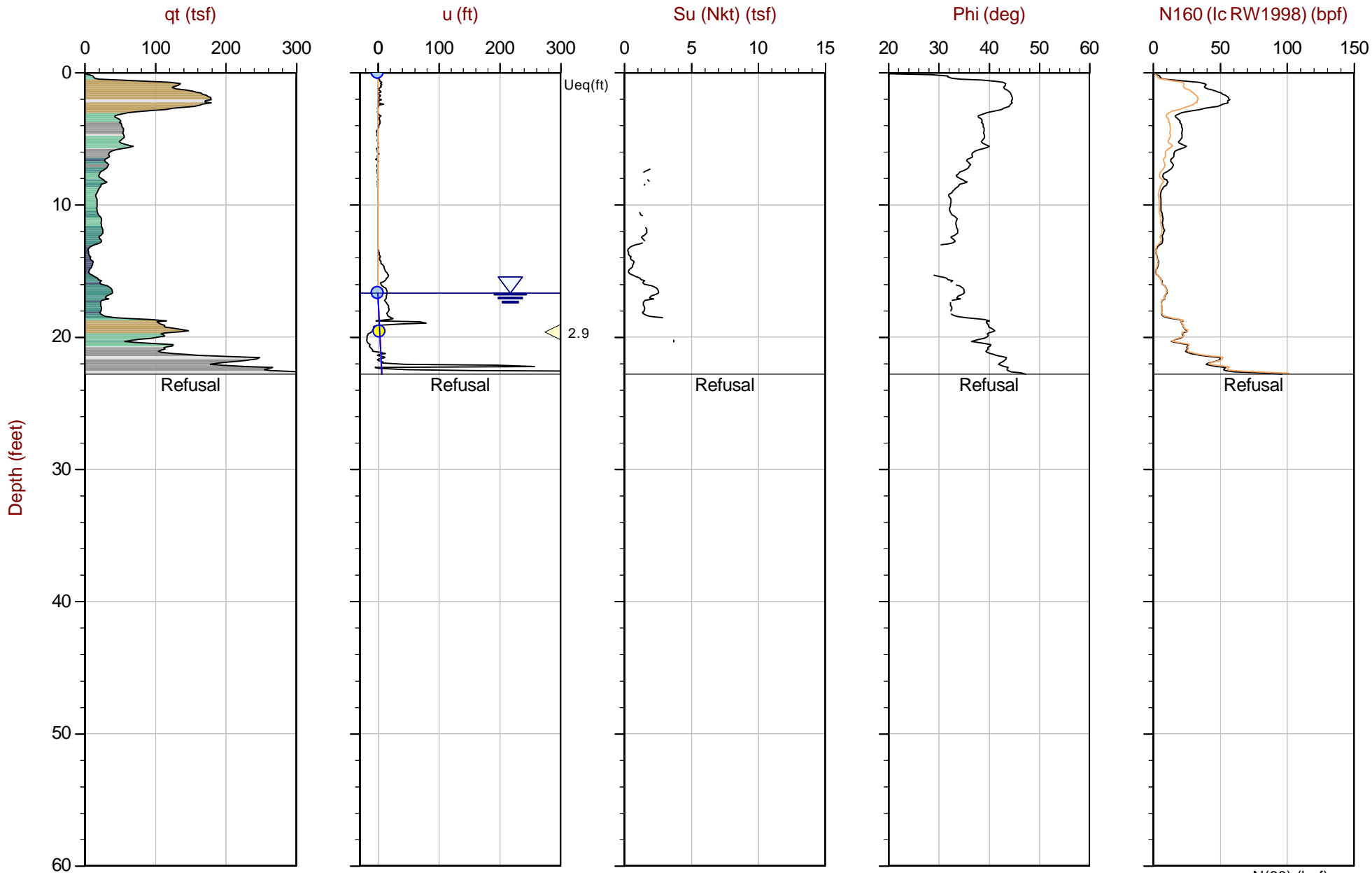
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-16 08:09
Site: Cholla Power Plant

Sounding: CPT-12
Cone: 552:T1500F15U500



Max Depth: 6.950 m / 22.80 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP12.COR
Unit Wt: SBTQtn(PKR2009)
Su Nkt: 15.0

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929575 Long: -110.268996

Overplot Item: ● Ueq ○ Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

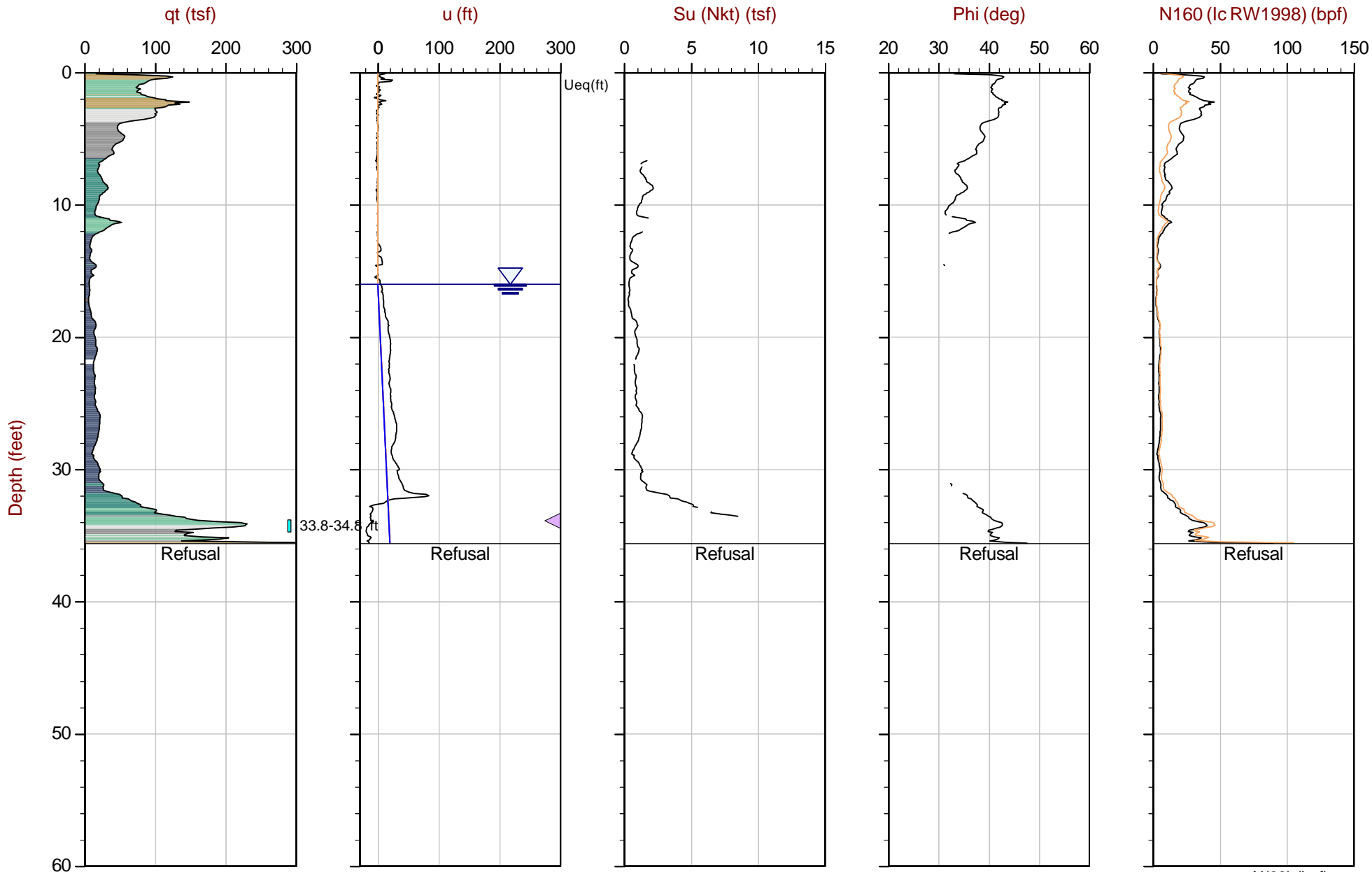
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-16 09:23
Site: Cholla Power Plant

Sounding: CPT-13
Cone: 552:T1500F15U500



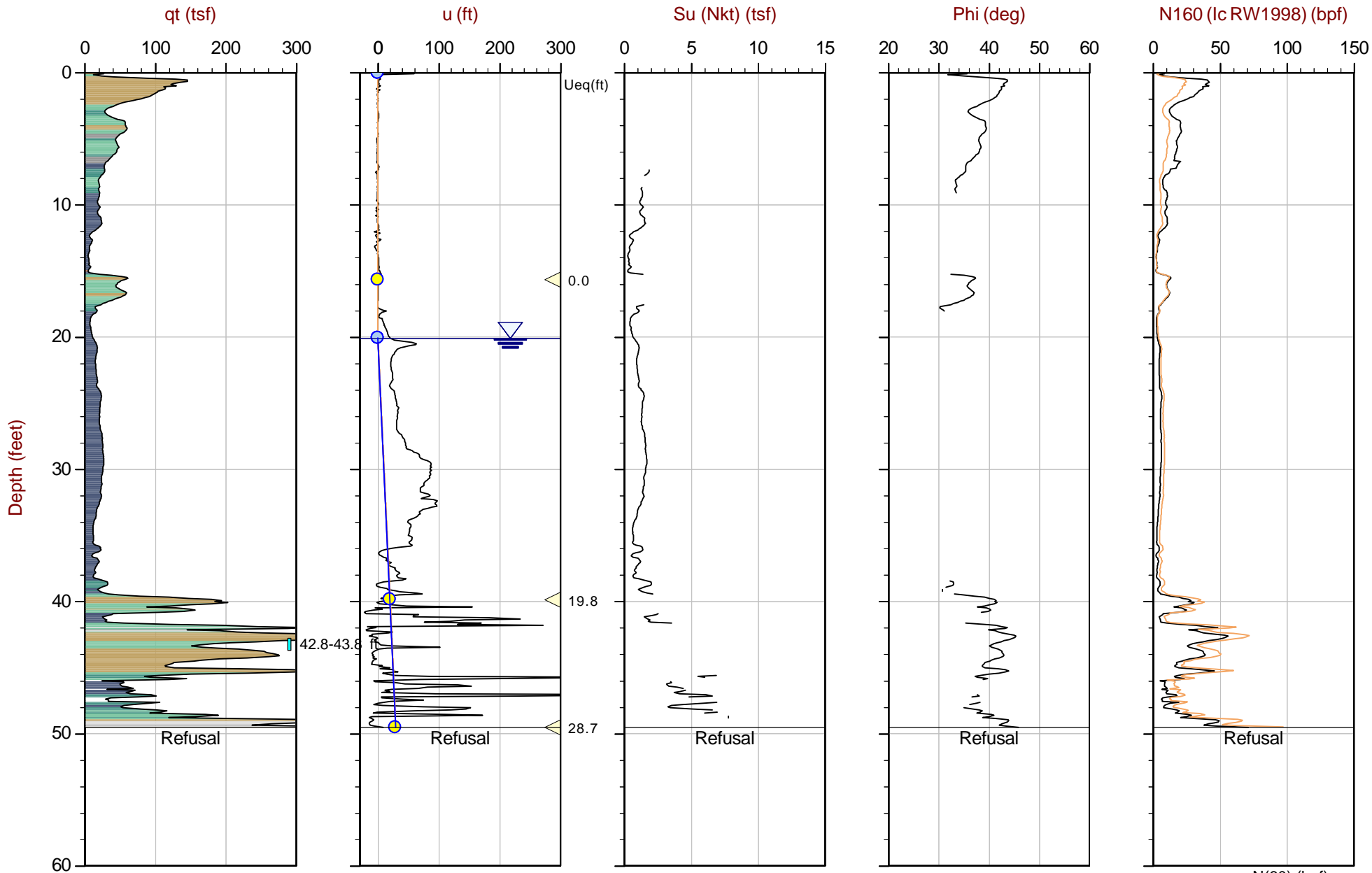
Max Depth: 10.850 m / 35.60 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP13.COR
Unit Wt: SBTQtn(PKR2009)
Su Nkt: 15.0

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929371 Long: -110.268696

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Max Depth: 15.100 m / 49.54 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP14.COR
Unit Wt: SBTQtn(PKR2009)
Su Nkt: 15.0

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929196 Long: -110.268458

Overplot Item: ● Ueq ○ Assumed Ueq ◀ Dissipation, Ueq achieved ◁ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

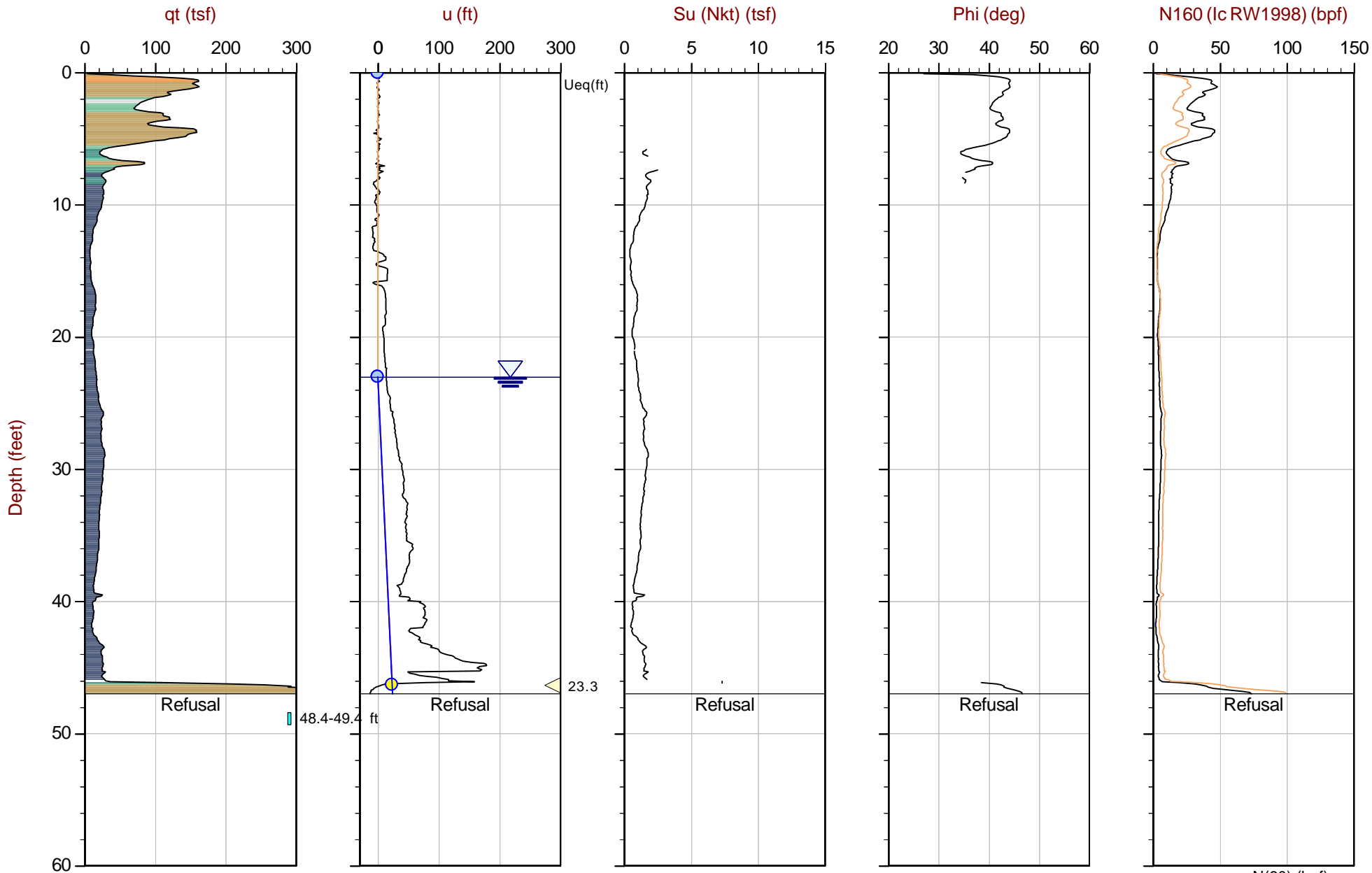
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-16 12:28
Site: Cholla Power Plant

Sounding: CPT-15
Cone: 552:T1500F15U500



Max Depth: 14.325 m / 47.00 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP15.COR
Unit Wt: SBTQtn(PKR2009)
Su Nkt: 15.0

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929053 Long: -110.268442

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

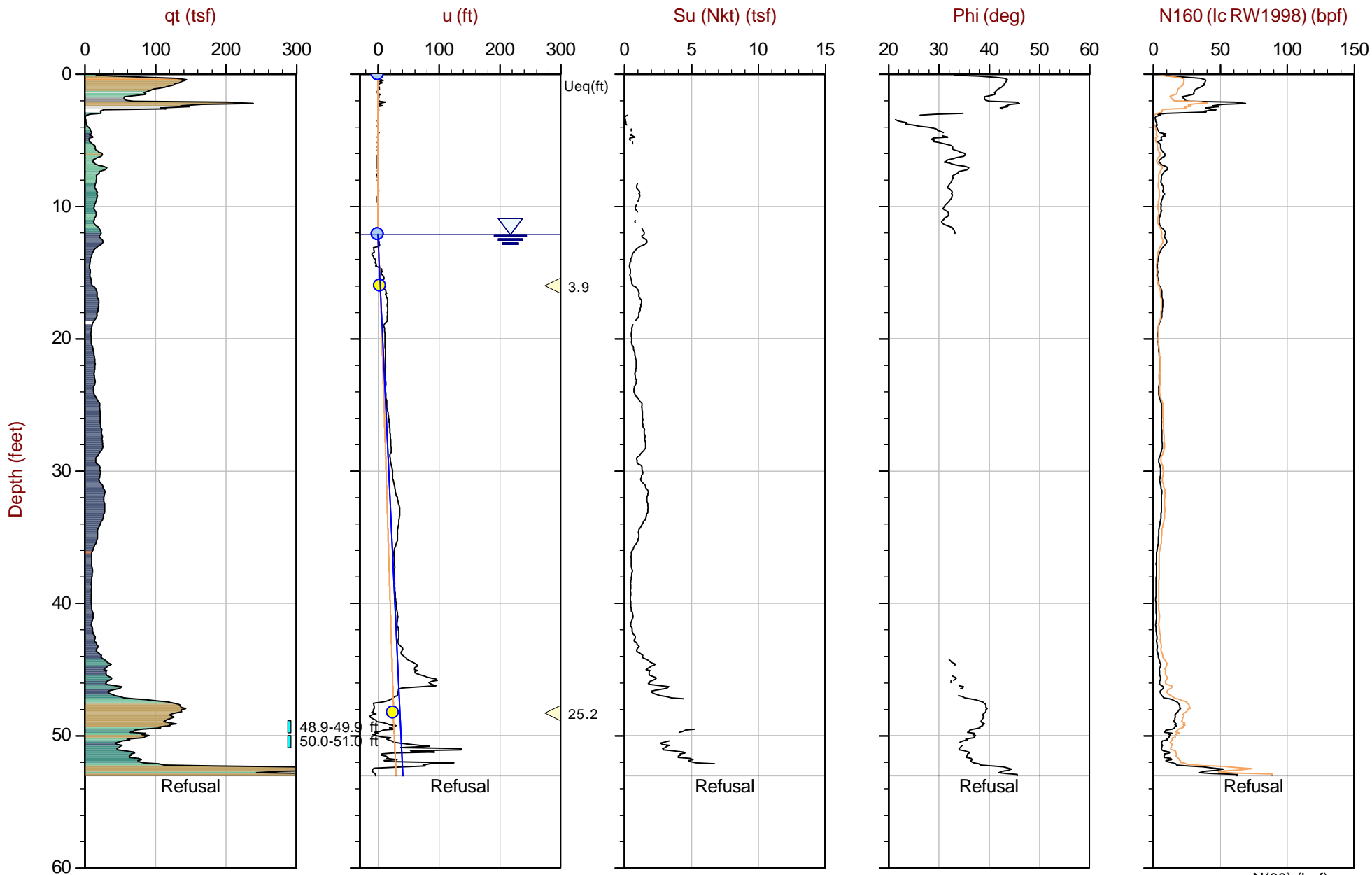
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-14 14:26
Site: Cholla Power Plant

Sounding: CPT-16
Cone: 552:T1500F15U500



Max Depth: 16.175 m / 53.07 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP16.COR
Unit Wt: SBTQn(PKR2009)
Su Nkt: 15.0

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929038 Long: -110.268309

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▲ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

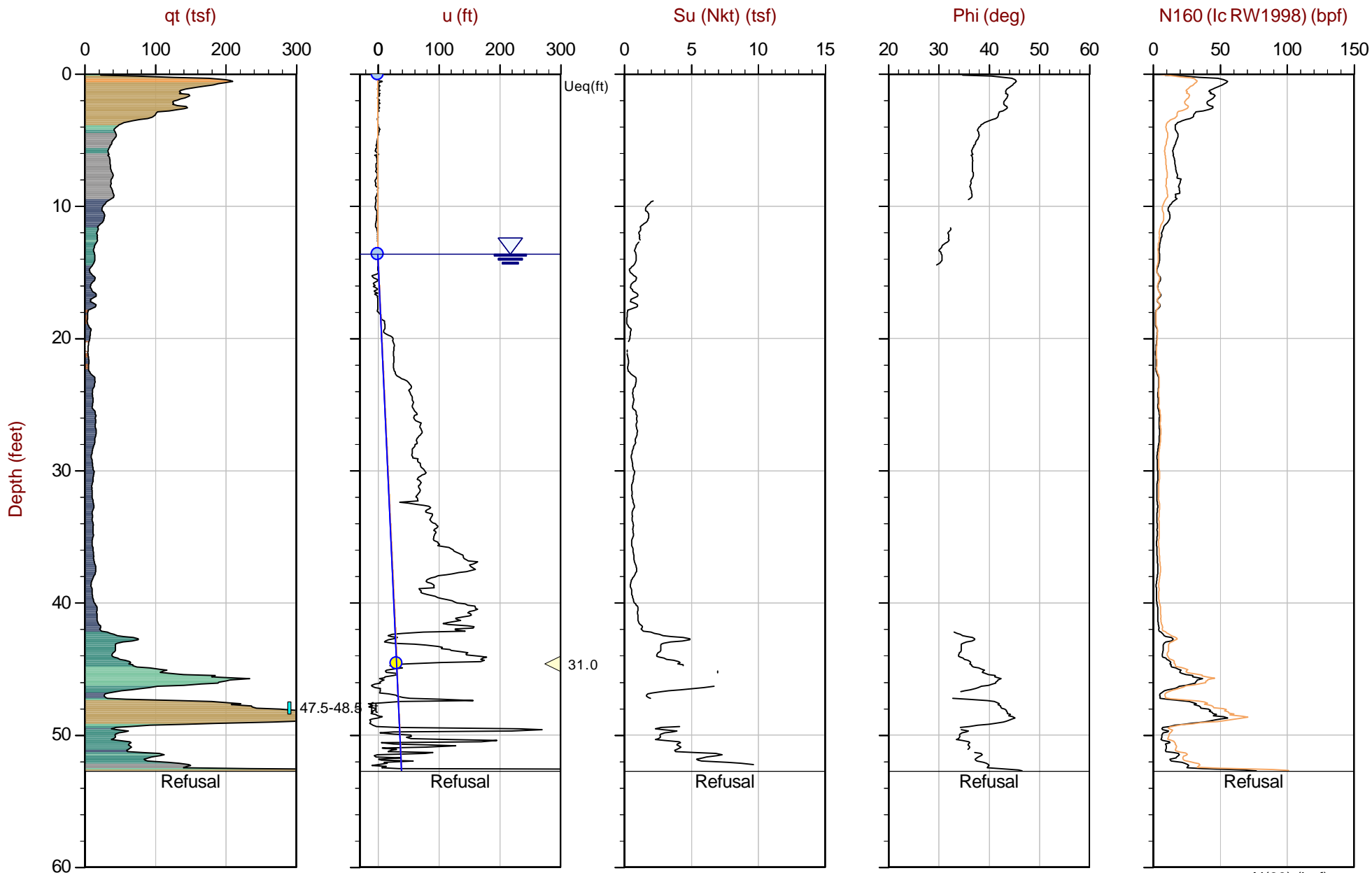
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-14 12:46
Site: Cholla Power Plant

Sounding: CPT-17
Cone: 552:T1500F15U500



Max Depth: 16.075 m / 52.74 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP17.COR
Unit Wt: SBTQn(PKR2009)
Su Nkt: 15.0

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928893 Long: -110.268168

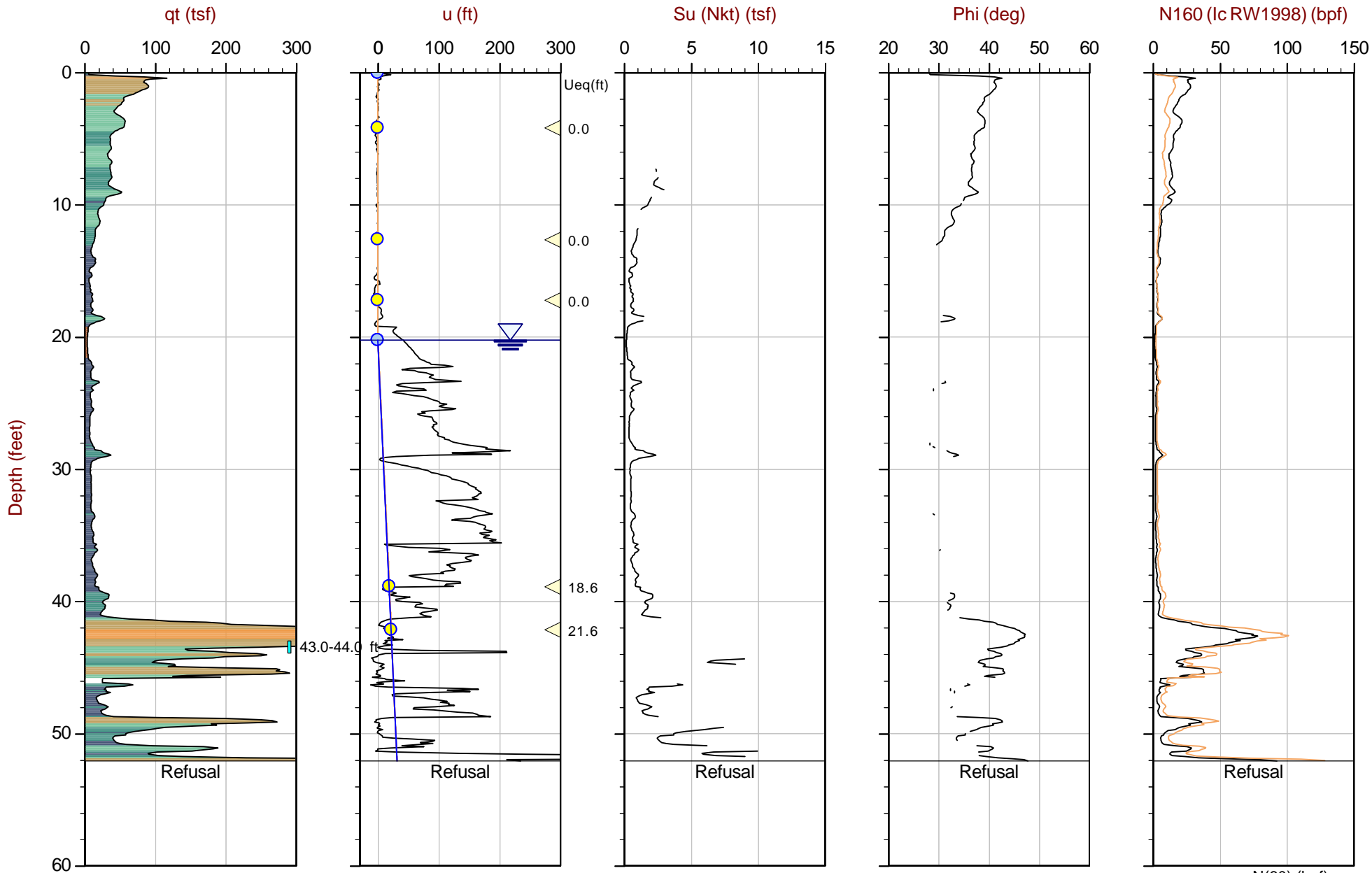
Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-14 10:41
Site: Cholla Power Plant

Sounding: CPT-18
Cone: 552:T1500F15U500



Max Depth: 15.875 m / 52.08 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP18.COR
Unit Wt: SBTQn(PKR2009)
Su Nkt: 15.0

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928743 Long: -110.267951

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

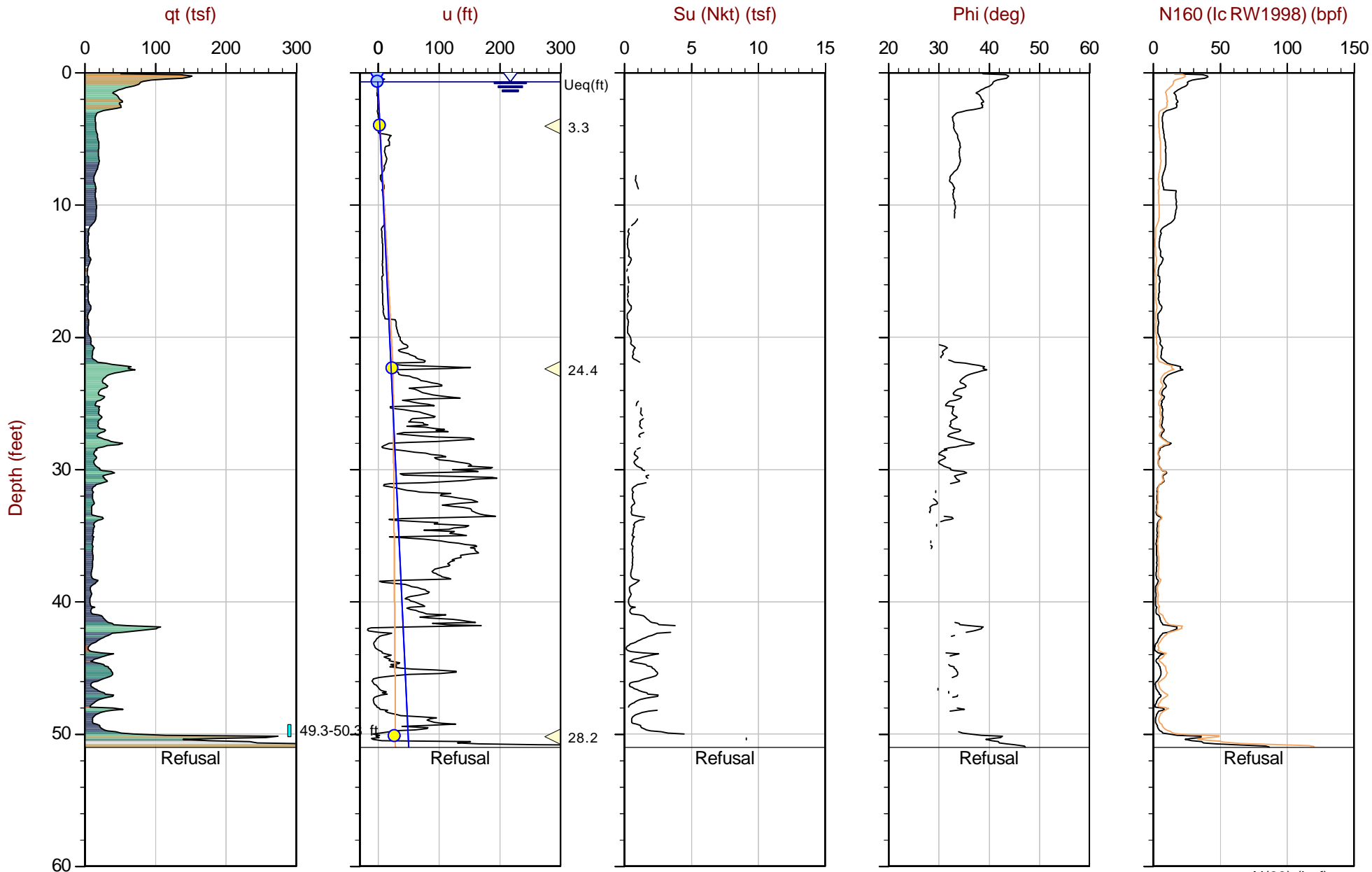
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-14 08:23
Site: Cholla Power Plant

Sounding: CPT-19
Cone: 552:T1500F15U500



Max Depth: 15.550 m / 51.02 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP19.COR
Unit Wt: SBTQtn(PKR2009)
Su Nkt: 15.0

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928568 Long: -110.267736

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

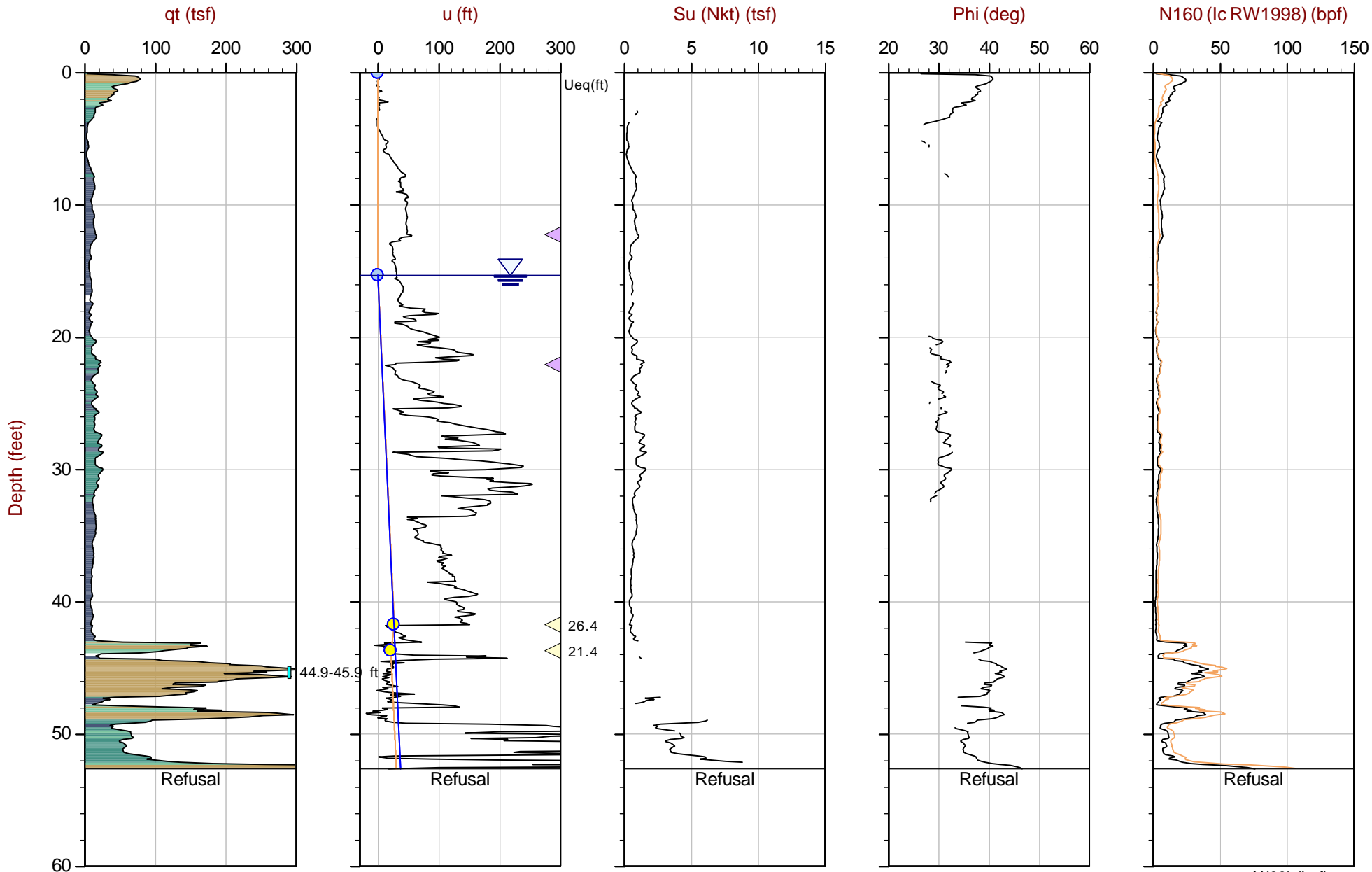
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-13 11:34
Site: Cholla Power Plant

Sounding: CPT-20
Cone: 552:T1500F15U500



Max Depth: 16.050 m / 52.66 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP20.COR
Unit Wt: SBTQtn(PKR2009)
Su Nkt: 15.0

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928437 Long: -110.267551

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

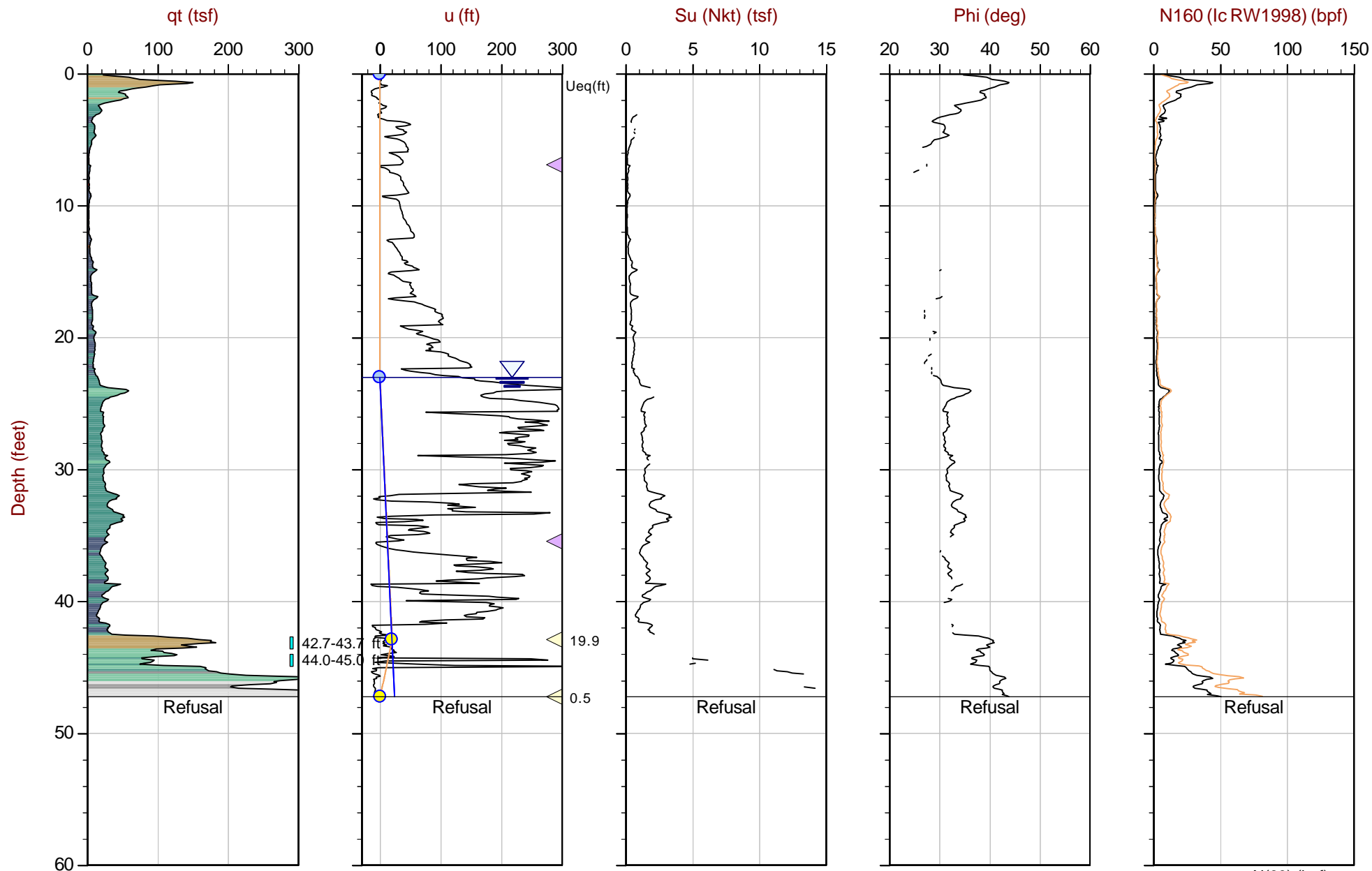
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-13 14:09
Site: Cholla Power Plant

Sounding: CPT-21
Cone: 552:T1500F15U500



Max Depth: 14.400 m / 47.24 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP21.COR
Unit Wt: SBTQtn(PKR2009)
Su Nkt: 15.0

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928272 Long: -110.267246

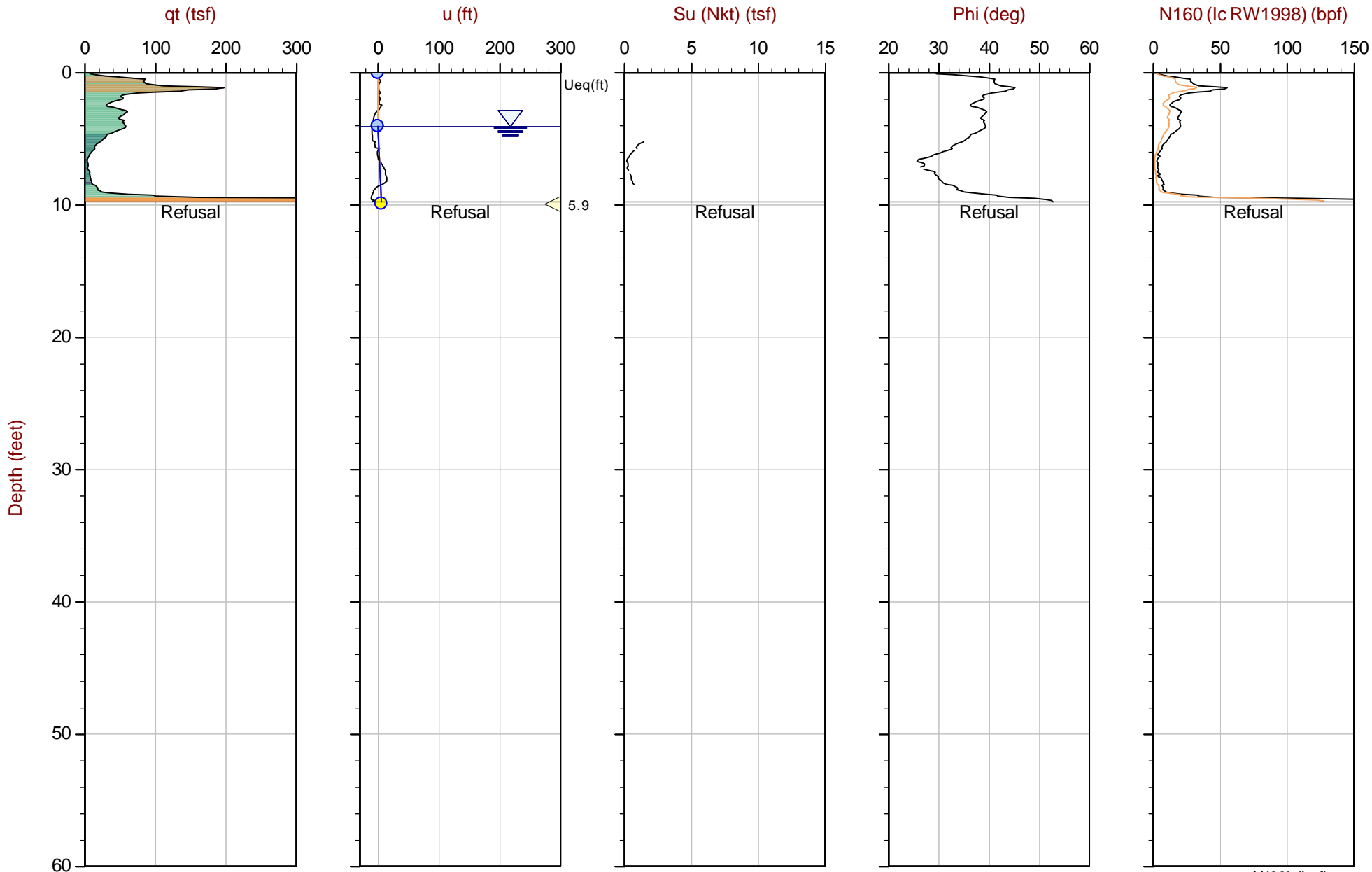
Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▲ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-13 11:25
Site: Cholla Power Plant

Sounding: CPT-22
Cone: 552:T1500F15U500



Max Depth: 2.975 m / 9.76 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP22.COR
Unit Wt: SBTQtn(PKR2009)
Su Nkt: 15.0

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928016 Long: -110.266925

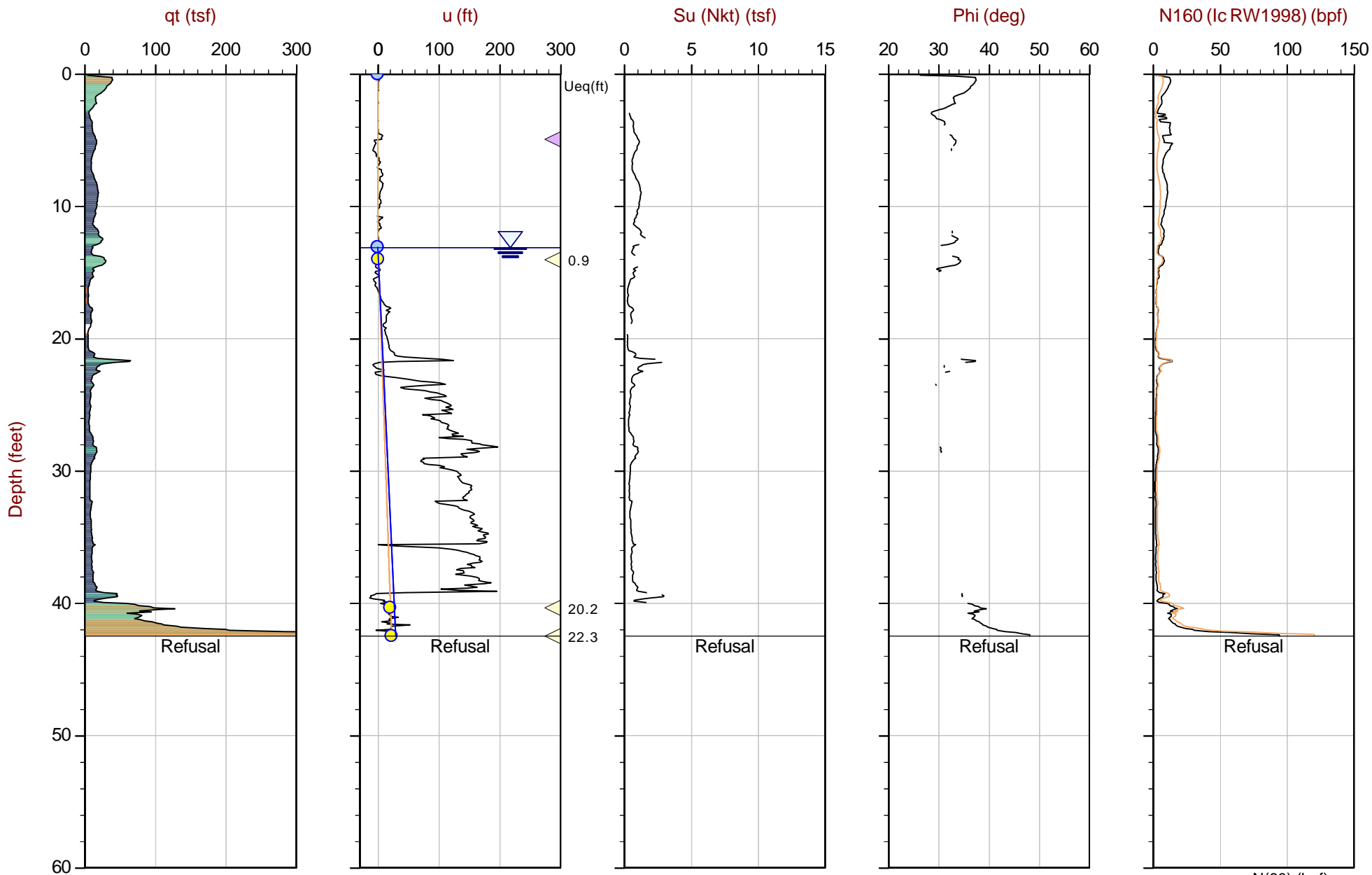
Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-16 14:09
Site: Cholla Power Plant

Sounding: CPT-23
Cone: 552:T1500F15U500



Max Depth: 12.950 m / 42.49 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP23.COR
Unit Wt: SBTQtn(PKR2009)
Su Nkt: 15.0

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928670 Long: -110.267932

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▲ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

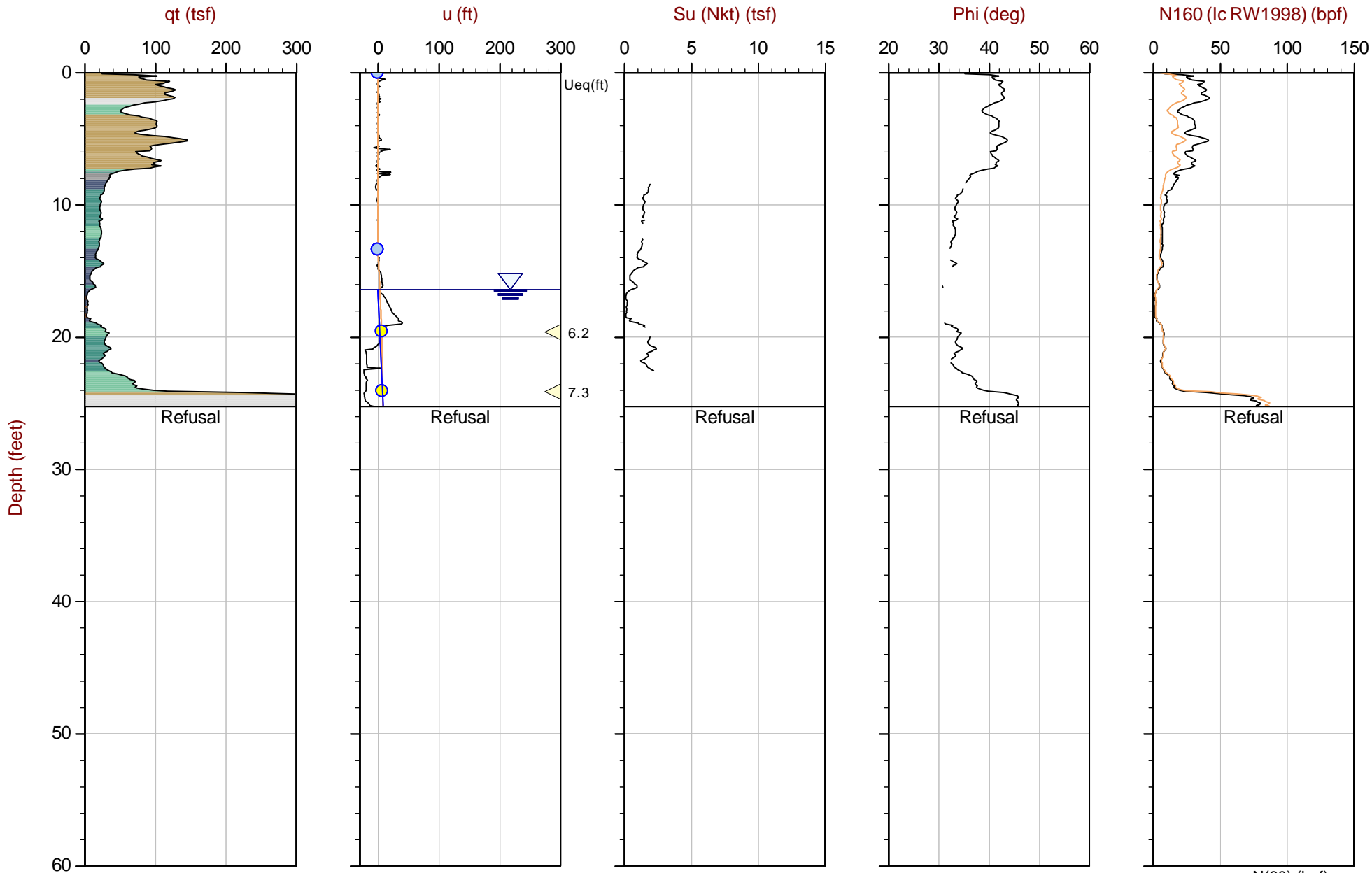
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-19 15:11
Site: Cholla Power Plant

Sounding: CPT-24
Cone: 552:T1500F15U500



Max Depth: 7.700 m / 25.26 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP24.COR
Unit Wt: SBTQtn(PKR2009)
Su Nkt: 15.0

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929637 Long: -110.269138

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

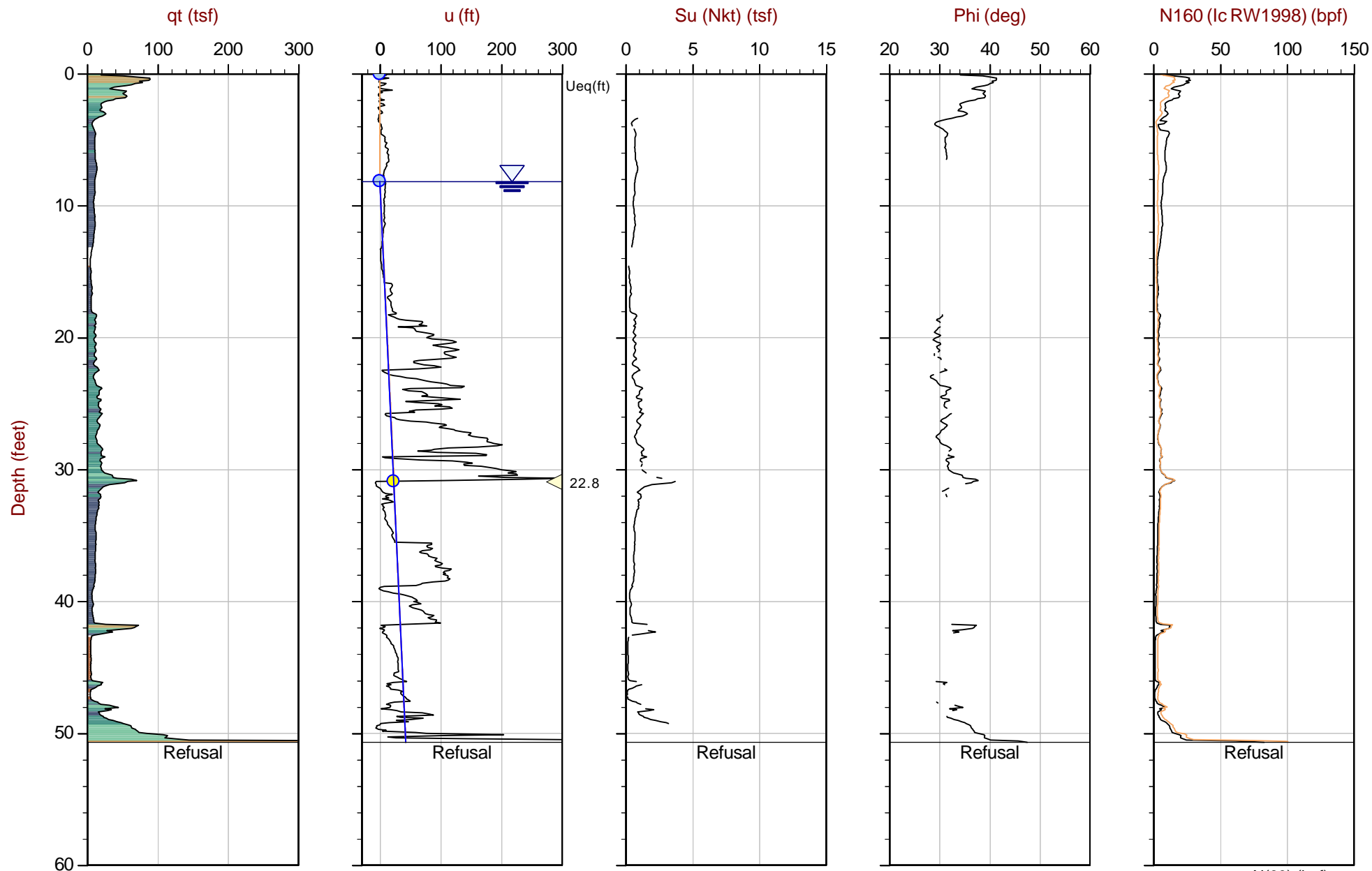
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-20 09:53
Site: Cholla Power Plant

Sounding: CPT-25
Cone: 657:T1500F15U500



Max Depth: 15.450 m / 50.69 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP25.COR
Unit Wt: SBTQtn(PKR2009)
Su Nkt: 15.0

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928437 Long: -110.267658

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

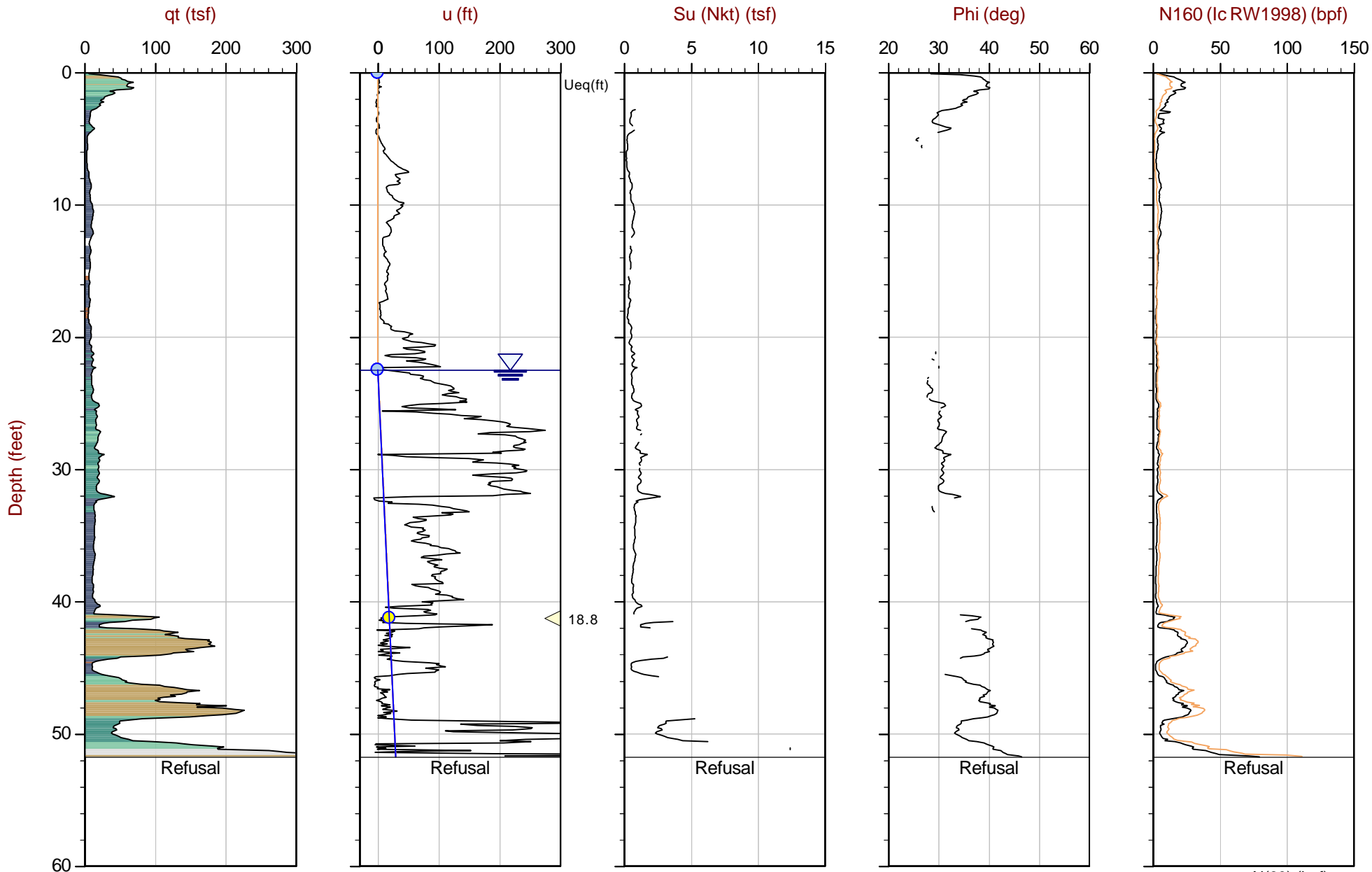
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-20 11:28
Site: Cholla Power Plant

Sounding: CPT-26
Cone: 657:T1500F15U500



Max Depth: 15.775 m / 51.75 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP26.COR
Unit Wt: SBTQtn(PKR2009)
Su Nkt: 15.0

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928306 Long: -110.267504

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

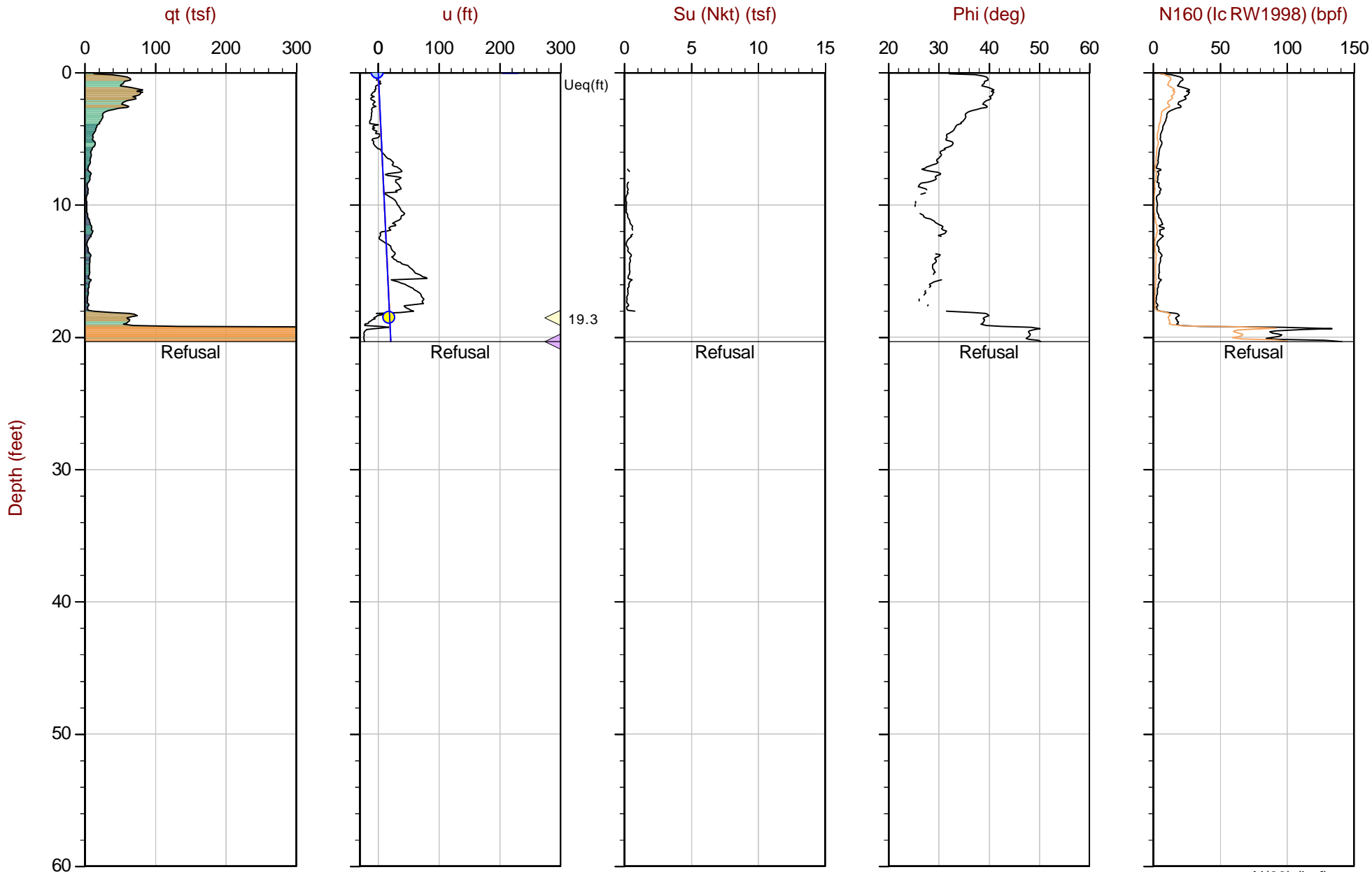
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-20 12:56
Site: Cholla Power Plant

Sounding: CPT-27
Cone: 657:T1500F15U500



Max Depth: 6.200 m / 20.34 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP27.COR
Unit Wt: SBTQn(PKR2009)
Su Nkt: 15.0

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928146 Long: -110.267118

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

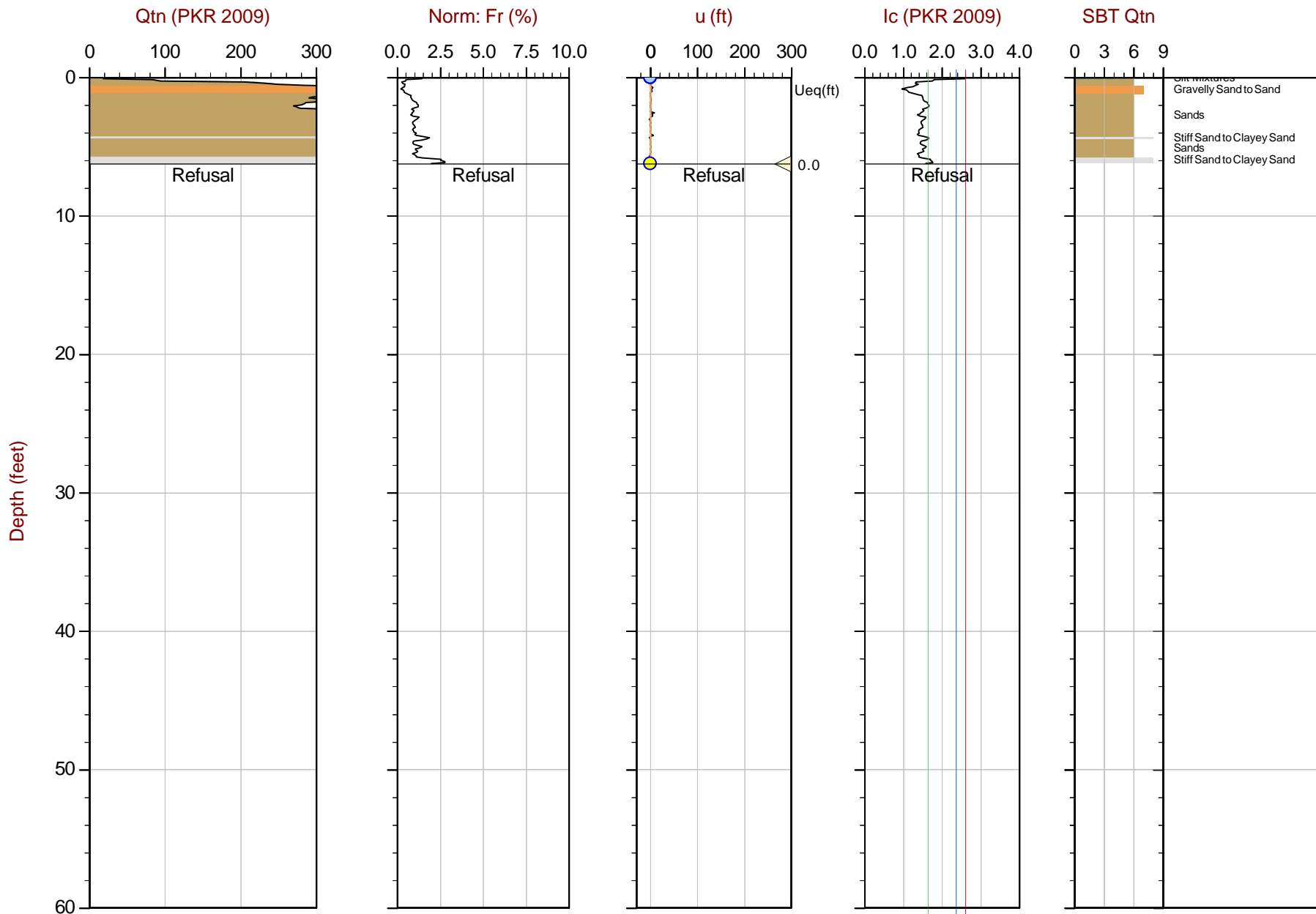
Normalized Cone Penetration Test Plots



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 08:09
Site: Cholla Power Plant

Sounding: CPT-01
Cone: 552:T1500F15U500



Max Depth: 1.900 m / 6.23 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP01.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.932162 Long: -110.271725

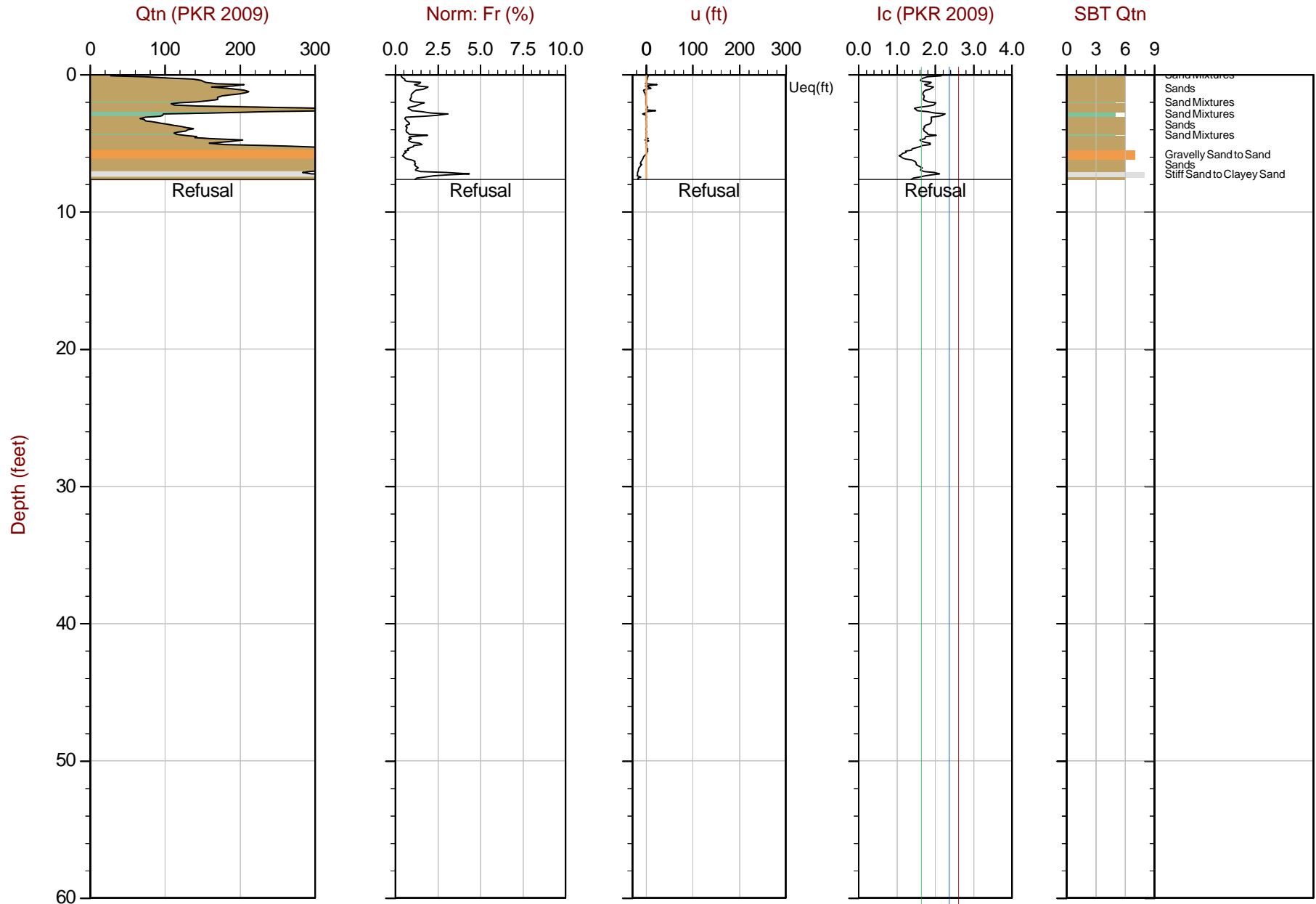
Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 08:46
Site: Cholla Power Plant

Sounding: CPT-03
Cone: 552:T1500F15U500



Max Depth: 2.325 m / 7.63 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP03.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.931641 Long: -110.271208

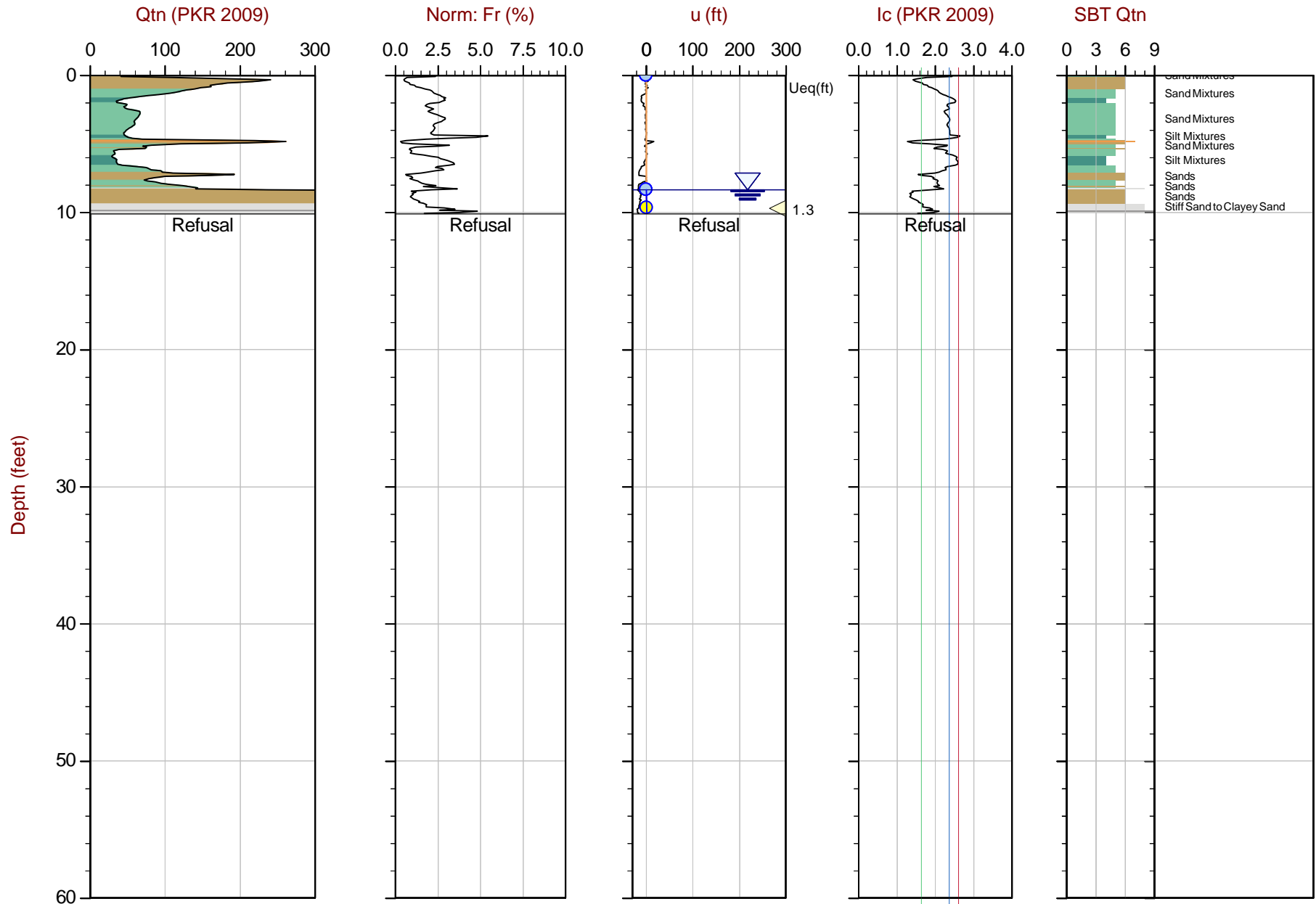
Overplot Item: ● Ueq ● Assumed Ueq ◀ Dissipation, Ueq achieved ◀ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line █ Water Sample
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 09:23
Site: Cholla Power Plant

Sounding: CPT-05
Cone: 552:T1500F15U500



Max Depth: 3.075 m / 10.09 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP05.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.931050 Long: -110.270578

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

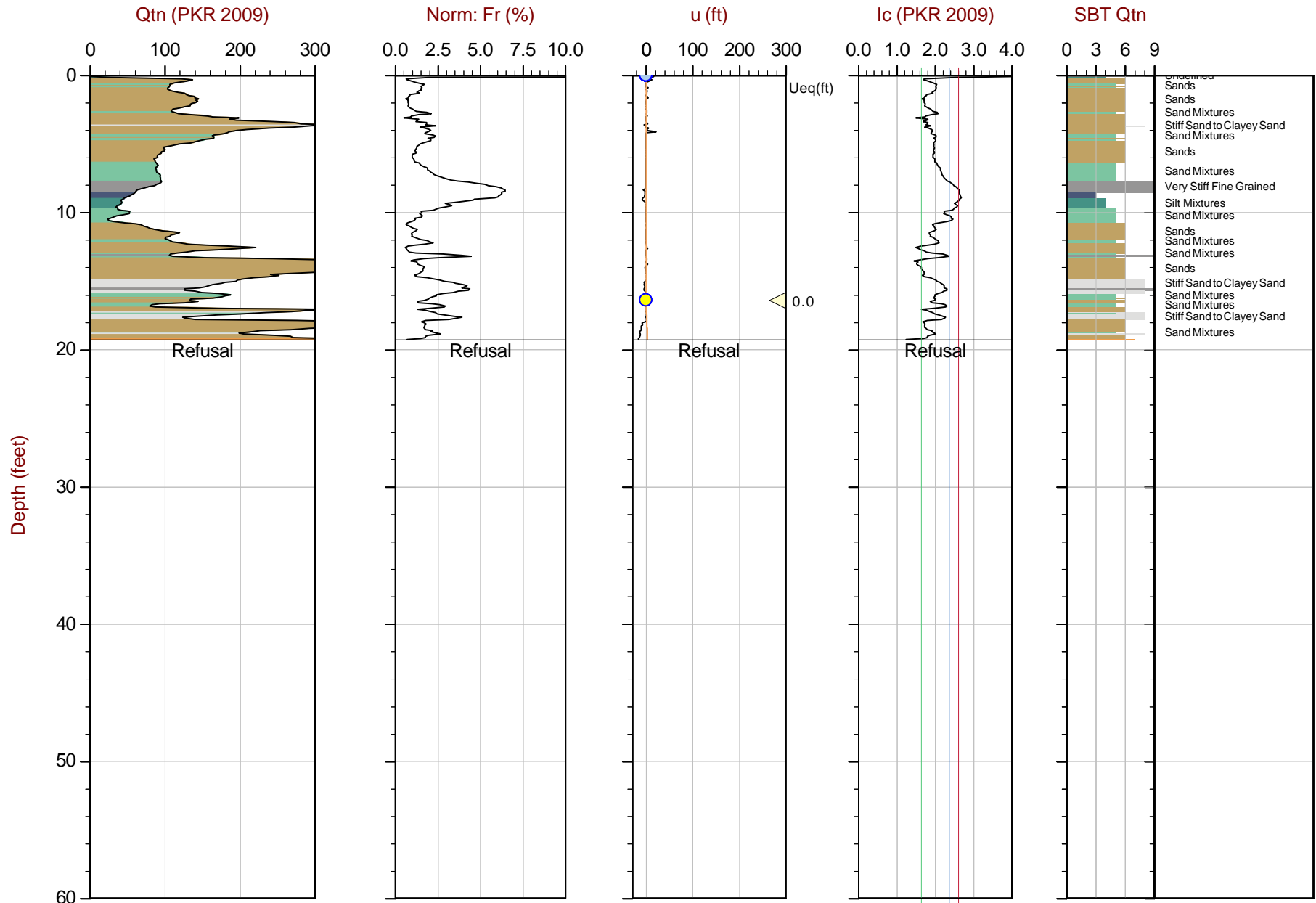
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 10:16
Site: Cholla Power Plant

Sounding: CPT-07
Cone: 552:T1500F15U500



Max Depth: 5.875 m / 19.27 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP07.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.930619 Long: -110.270080

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

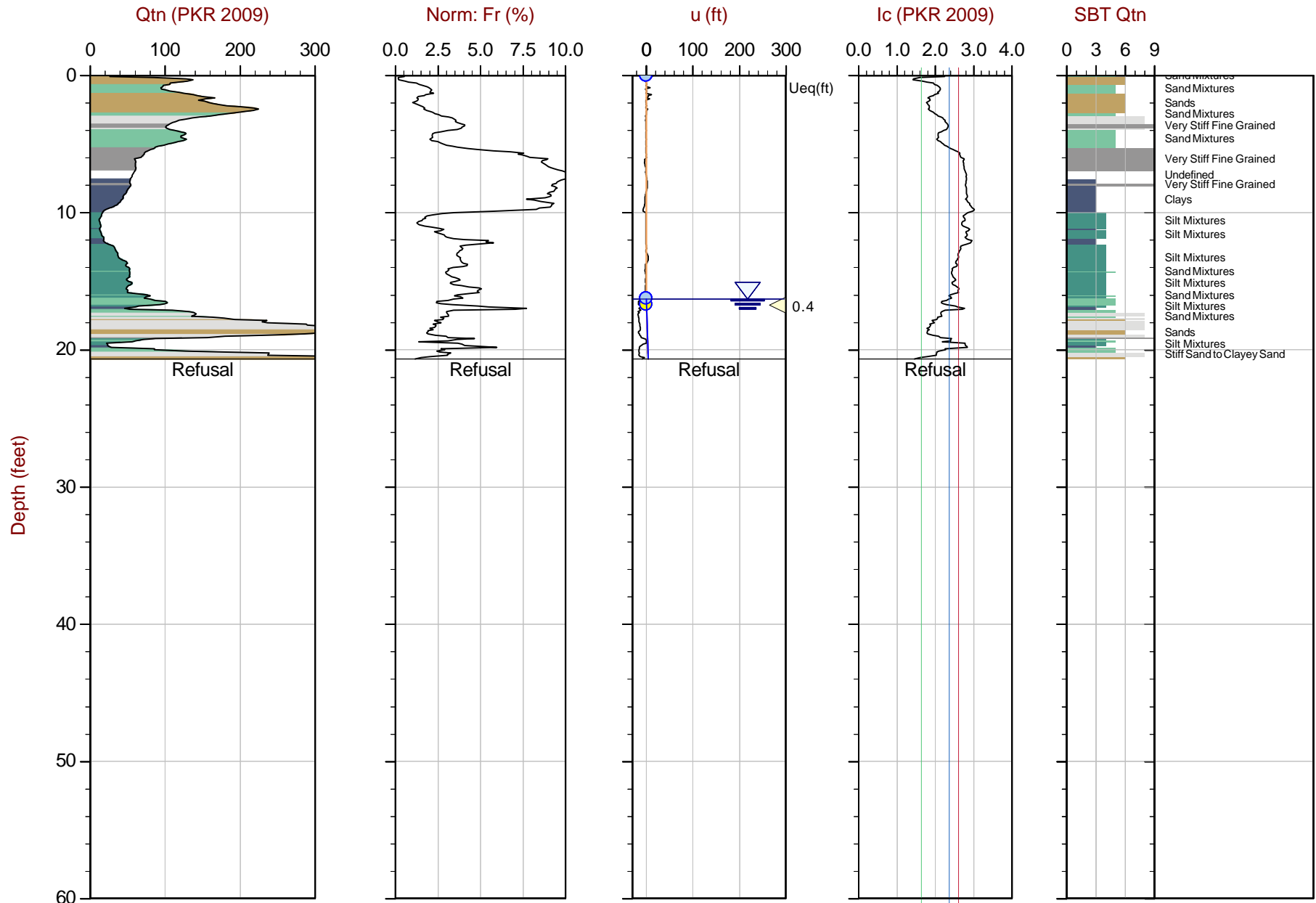
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 11:09
Site: Cholla Power Plant

Sounding: CPT-08
Cone: 552:T1500F15U500



Max Depth: 6.300 m / 20.67 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP08.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.930425 Long: -110.269834

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

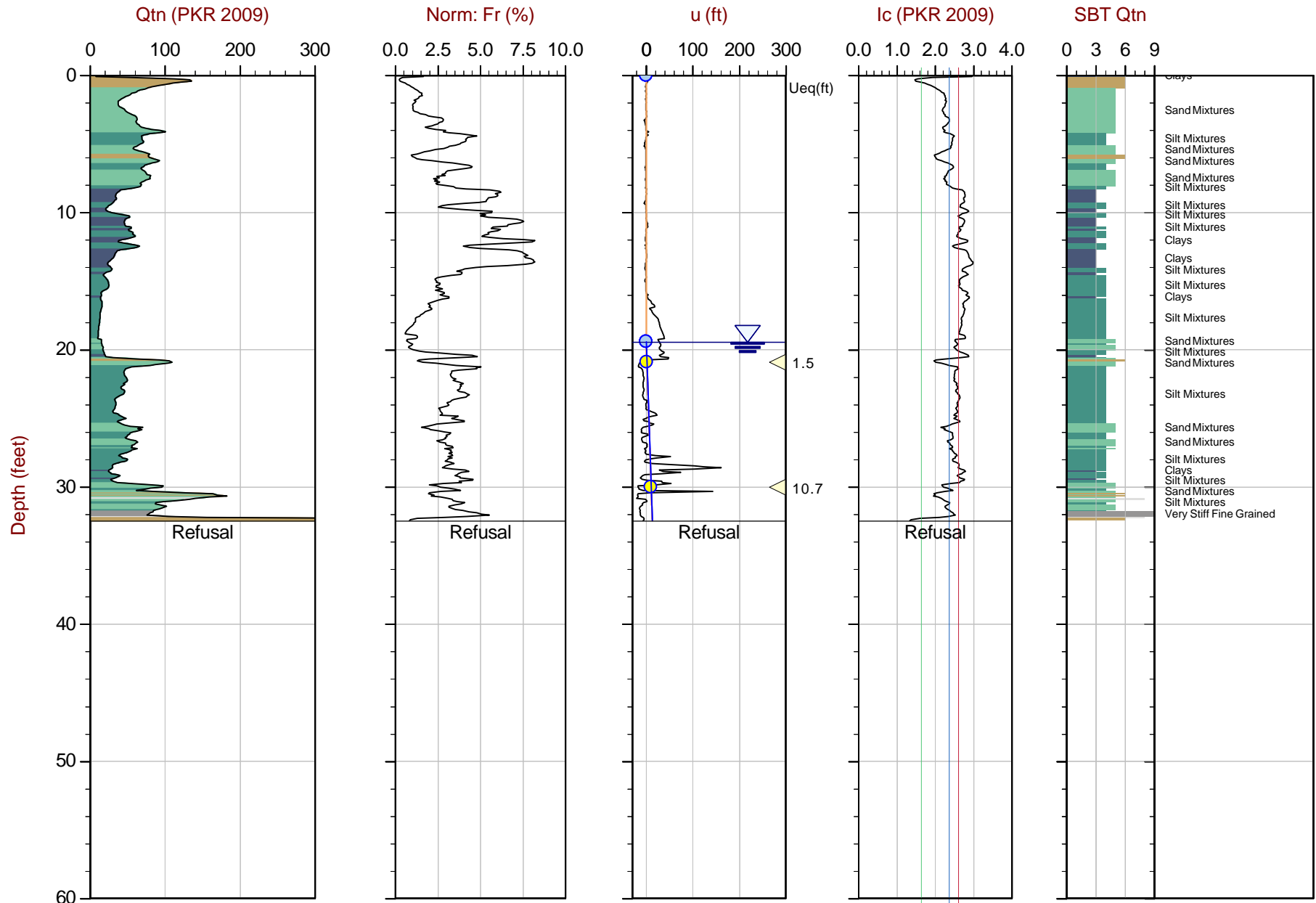
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 12:02
Site: Cholla Power Plant

Sounding: CPT-09
Cone: 552:T1500F15U500



Max Depth: 9.900 m / 32.48 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP09.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.930224 Long: -110.269621

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

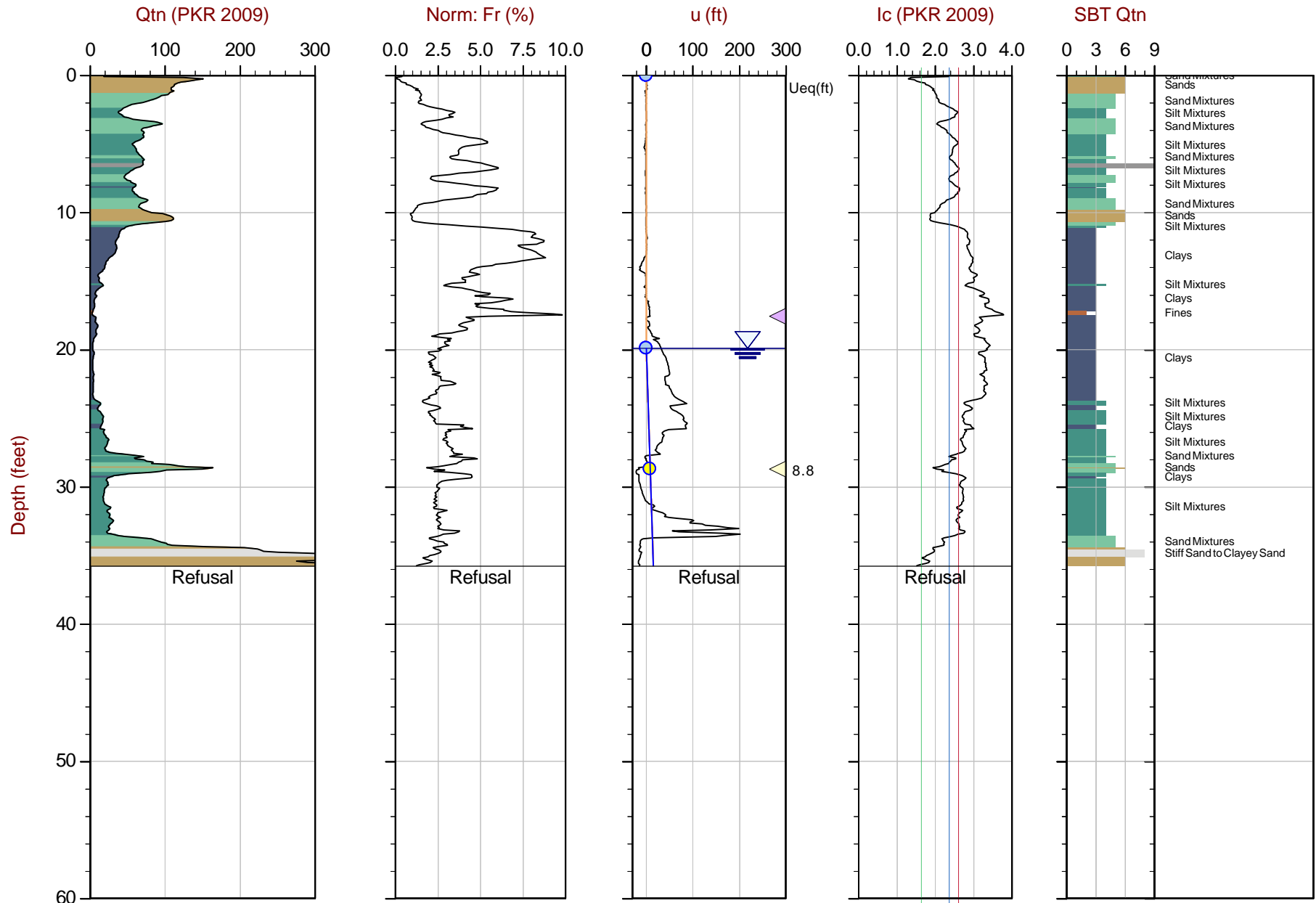
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 13:15
Site: Cholla Power Plant

Sounding: CPT-10
Cone: 552:T1500F15U500



Max Depth: 10.900 m / 35.76 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP10.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.930091 Long: -110.269468

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

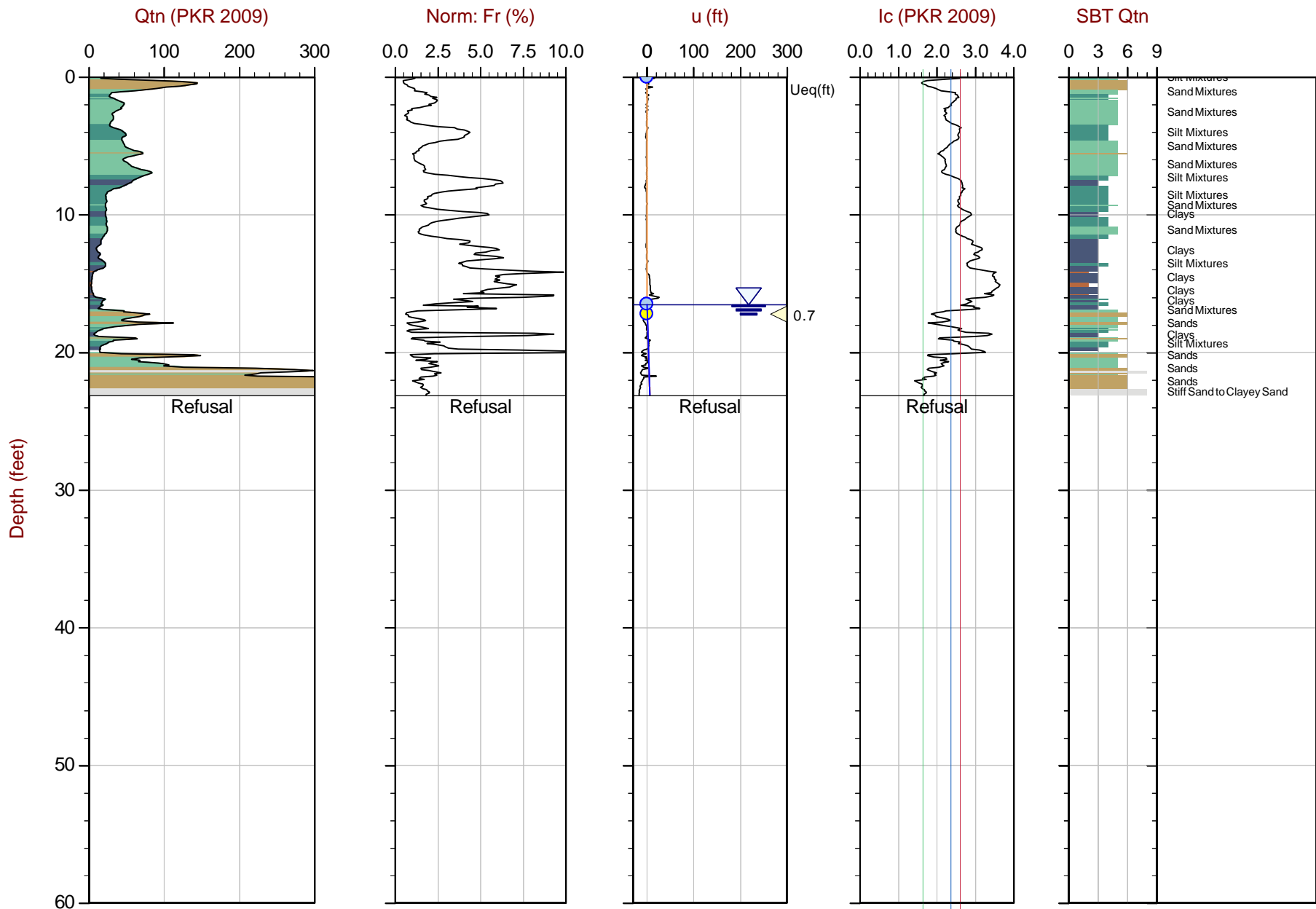
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 15:02
Site: Cholla Power Plant

Sounding: CPT-11
Cone: 552:T1500F15U500



Max Depth: 7.050 m / 23.13 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP11.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929756 Long: -110.269168

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

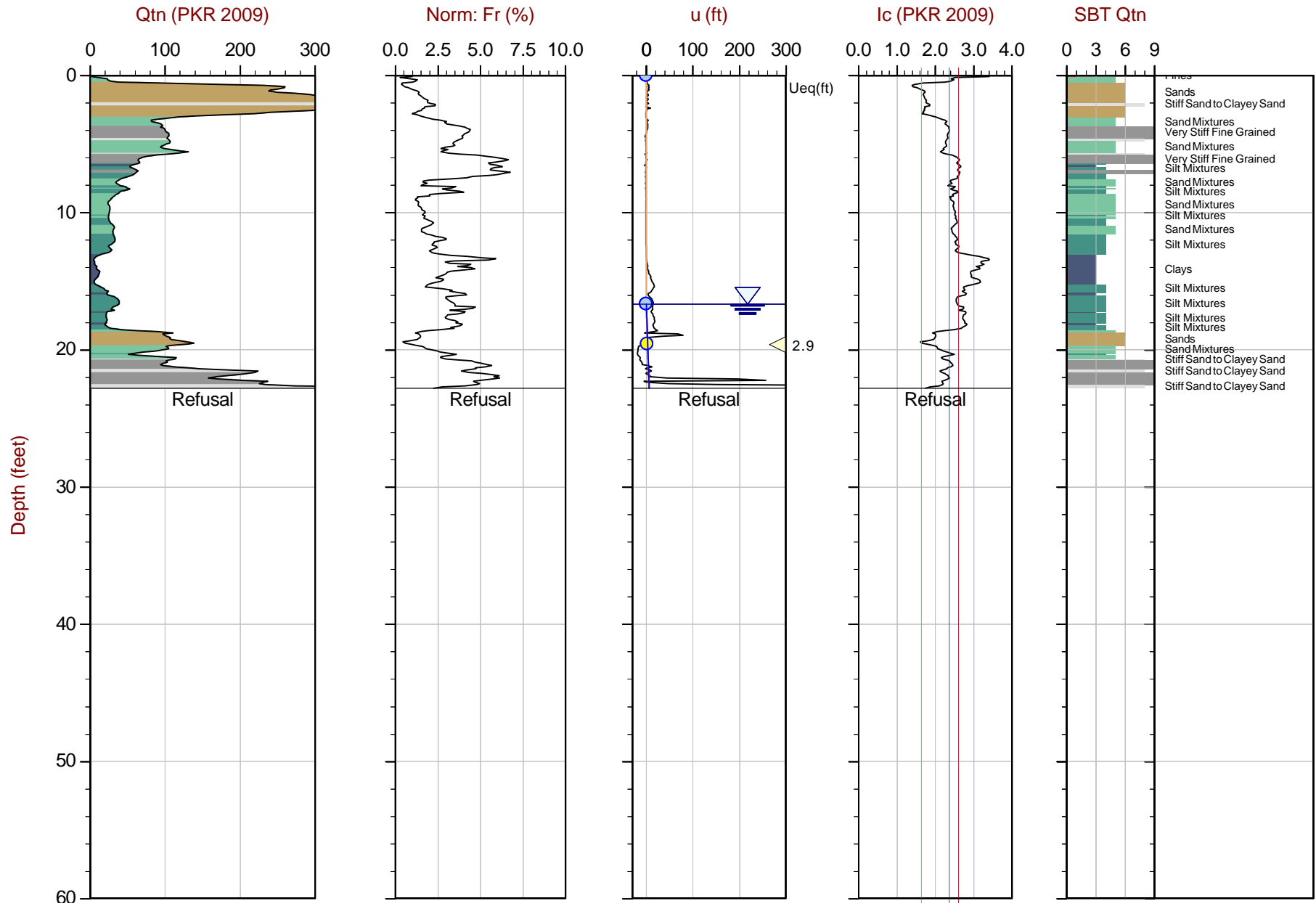
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-16 08:09
Site: Cholla Power Plant

Sounding: CPT-12
Cone: 552:T1500F15U500



Max Depth: 6.950 m / 22.80 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP12.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929575 Long: -110.268996

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

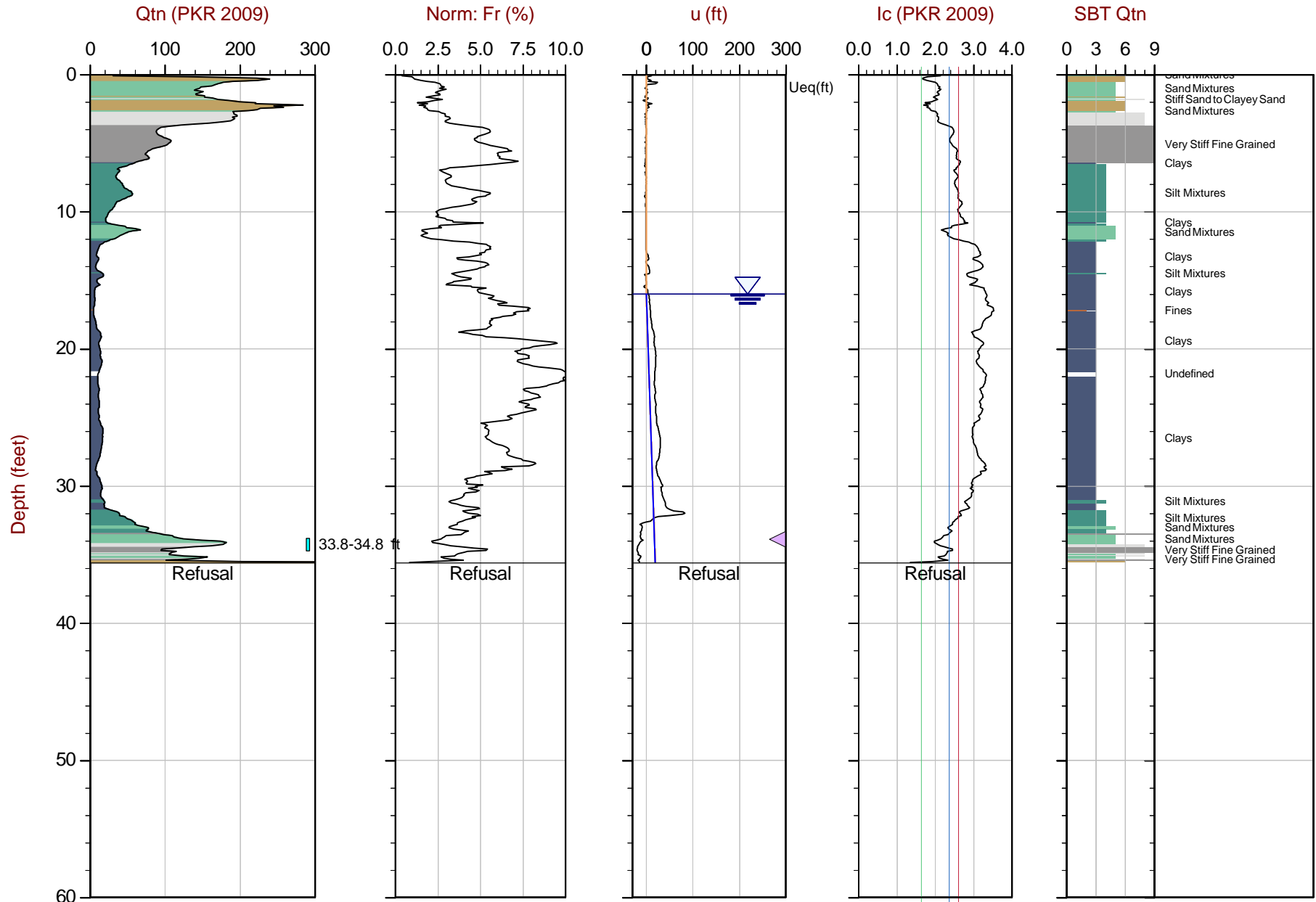
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-16 09:23
Site: Cholla Power Plant

Sounding: CPT-13
Cone: 552:T1500F15U500



Max Depth: 10.850 m / 35.60 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP13.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929371 Long: -110.268696

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

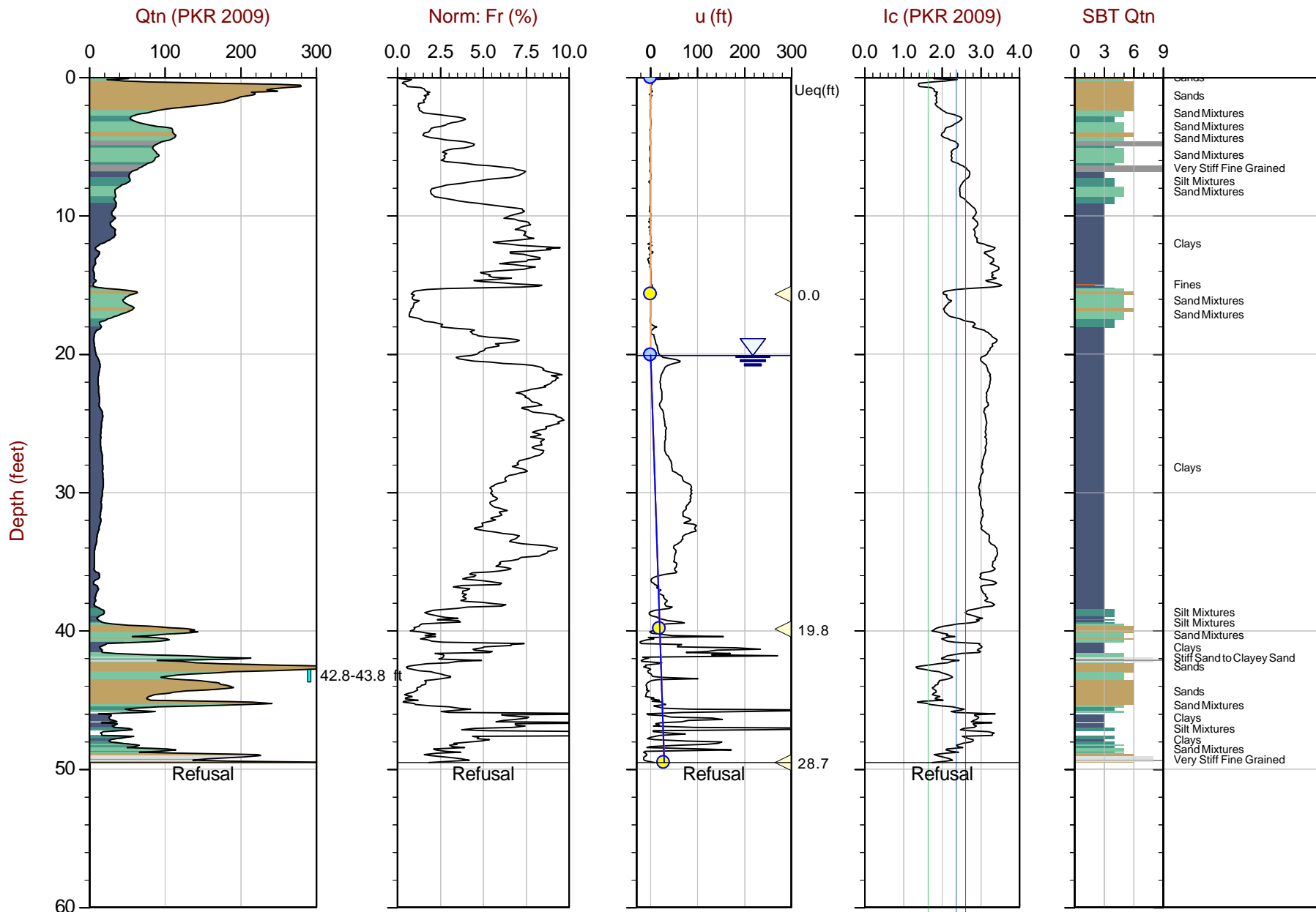
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-16 10:34
Site: Cholla Power Plant

Sounding: CPT-14
Cone: 552:T1500F15U500



Max Depth: 15.100 m / 49.54 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP14.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929196 Long: -110.268458

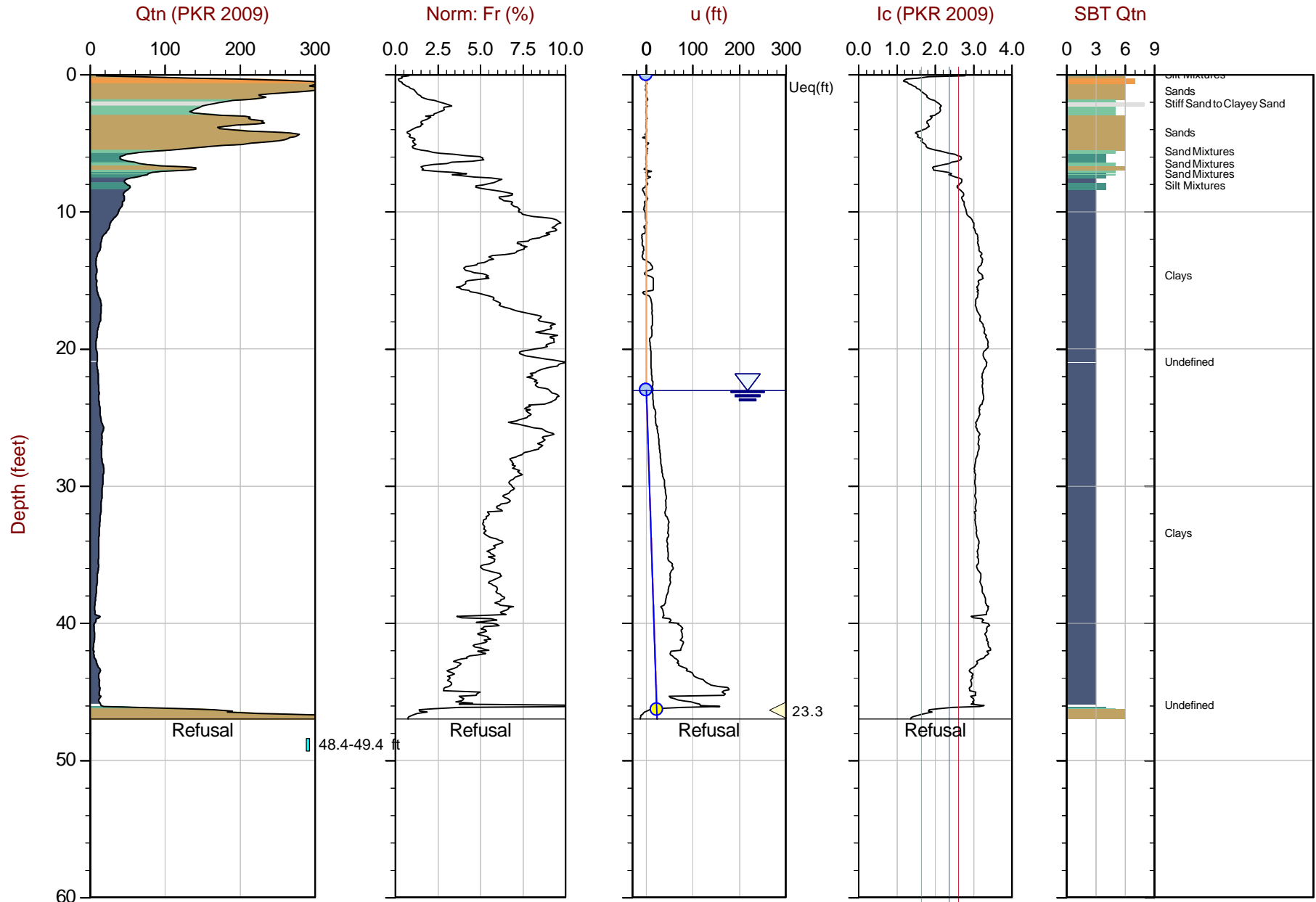
Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-16 12:28
Site: Cholla Power Plant

Sounding: CPT-15
Cone: 552:T1500F15U500



Max Depth: 14.325 m / 47.00 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP15.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929053 Long: -110.268442

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

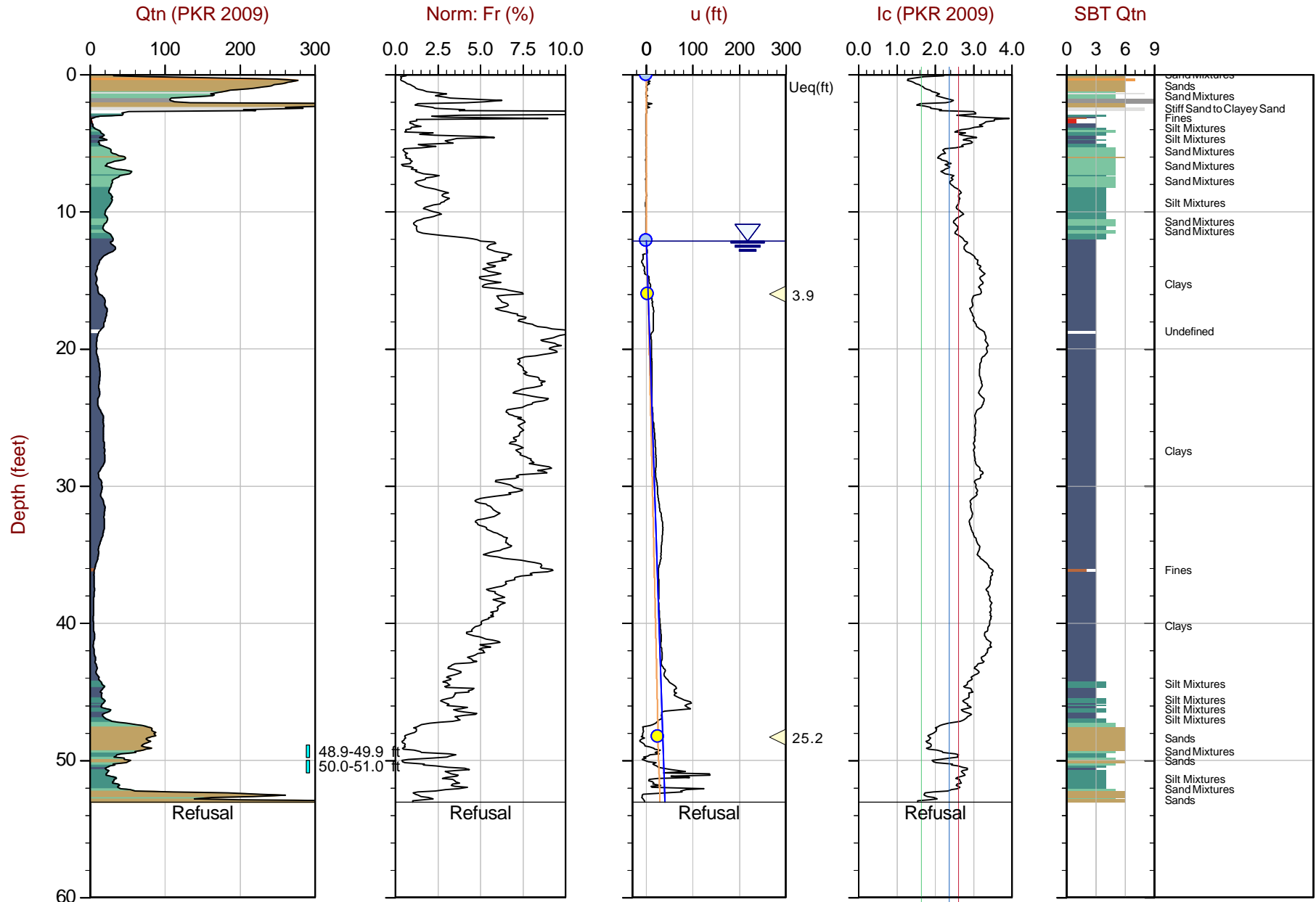
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-14 14:26
Site: Cholla Power Plant

Sounding: CPT-16
Cone: 552:T1500F15U500



Max Depth: 16.175 m / 53.07 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP16.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929038 Long: -110.268309

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

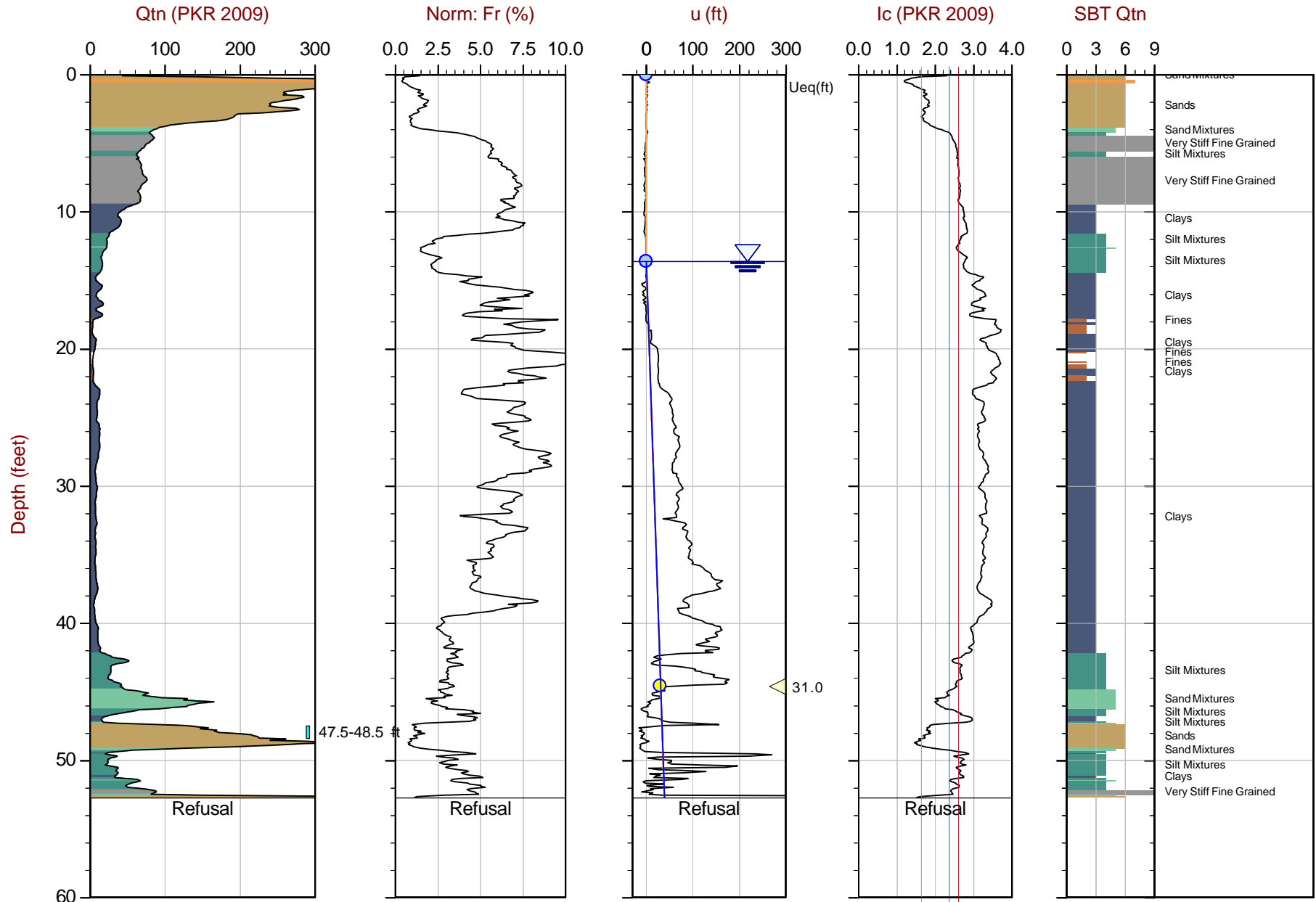
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-14 12:46
Site: Cholla Power Plant

Sounding: CPT-17
Cone: 552:T1500F15U500



Max Depth: 16.075 m / 52.74 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP17.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928893 Long: -110.268168

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

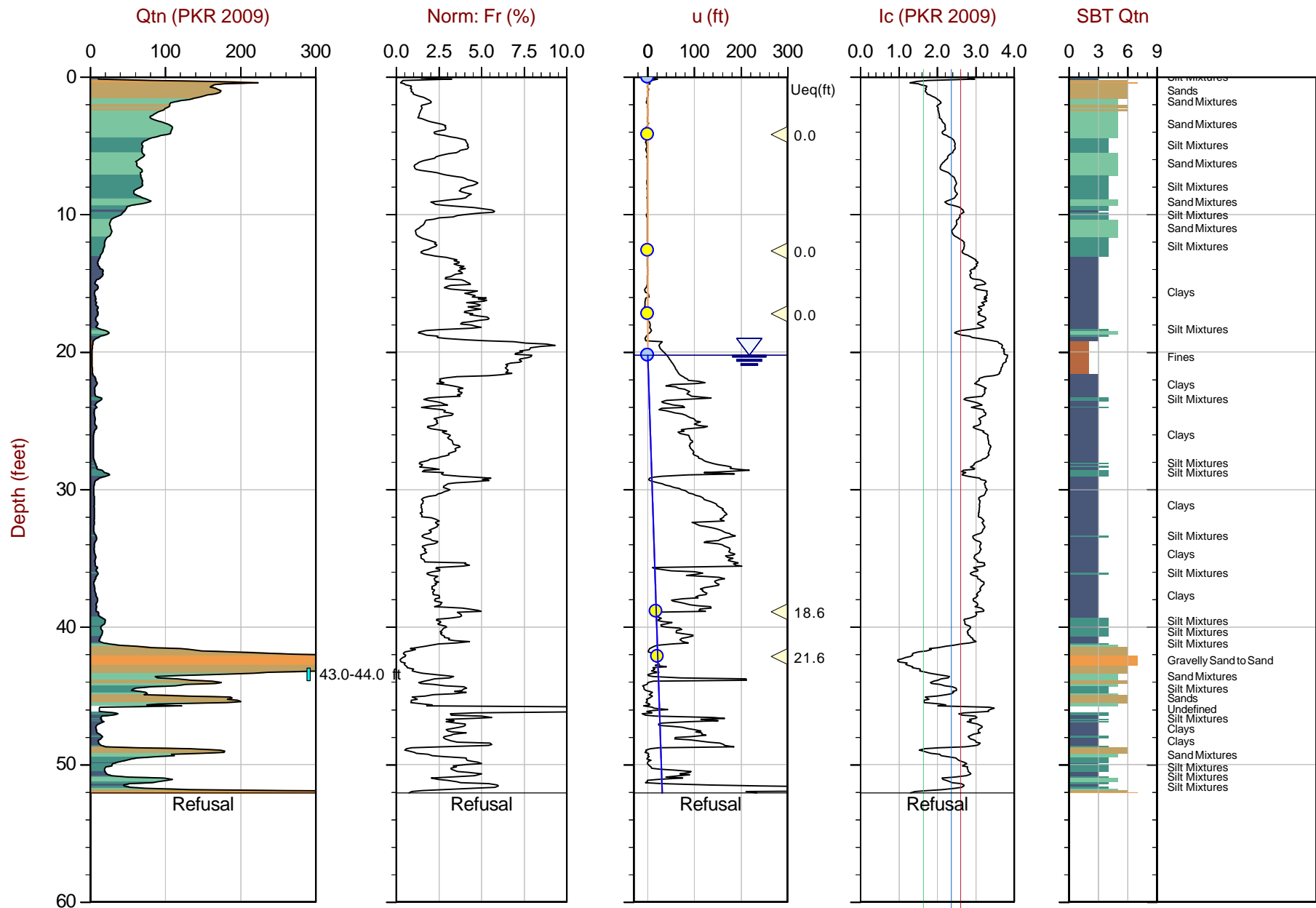
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-14 10:41
Site: Cholla Power Plant

Sounding: CPT-18
Cone: 552:T1500F15U500



Max Depth: 15.875 m / 52.08 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP18.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928743 Long: -110.267951

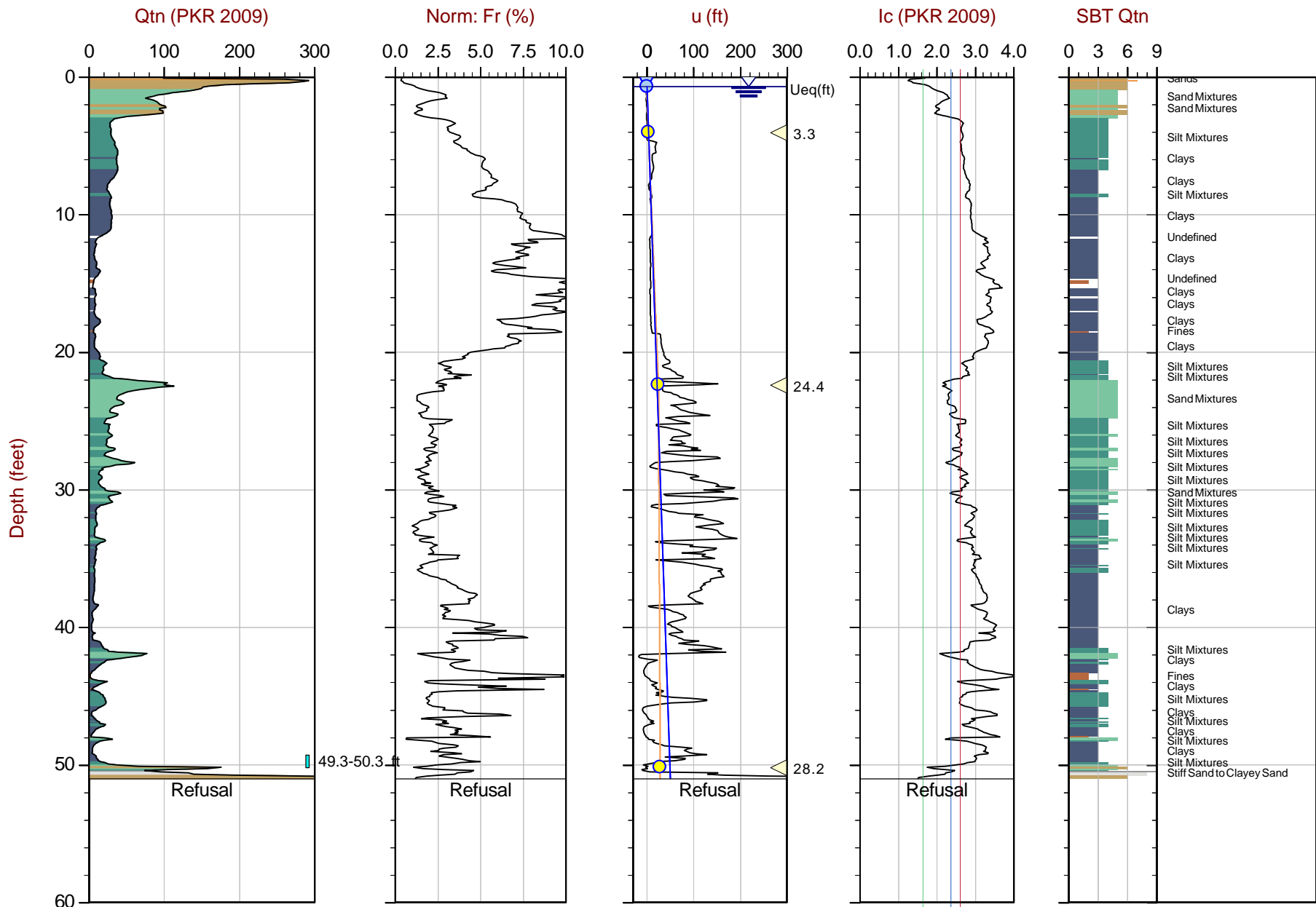
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-14 08:23
Site: Cholla Power Plant

Sounding: CPT-19
Cone: 552:T1500F15U500



Max Depth: 15.550 m / 51.02 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP19.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928568 Long: -110.267736

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

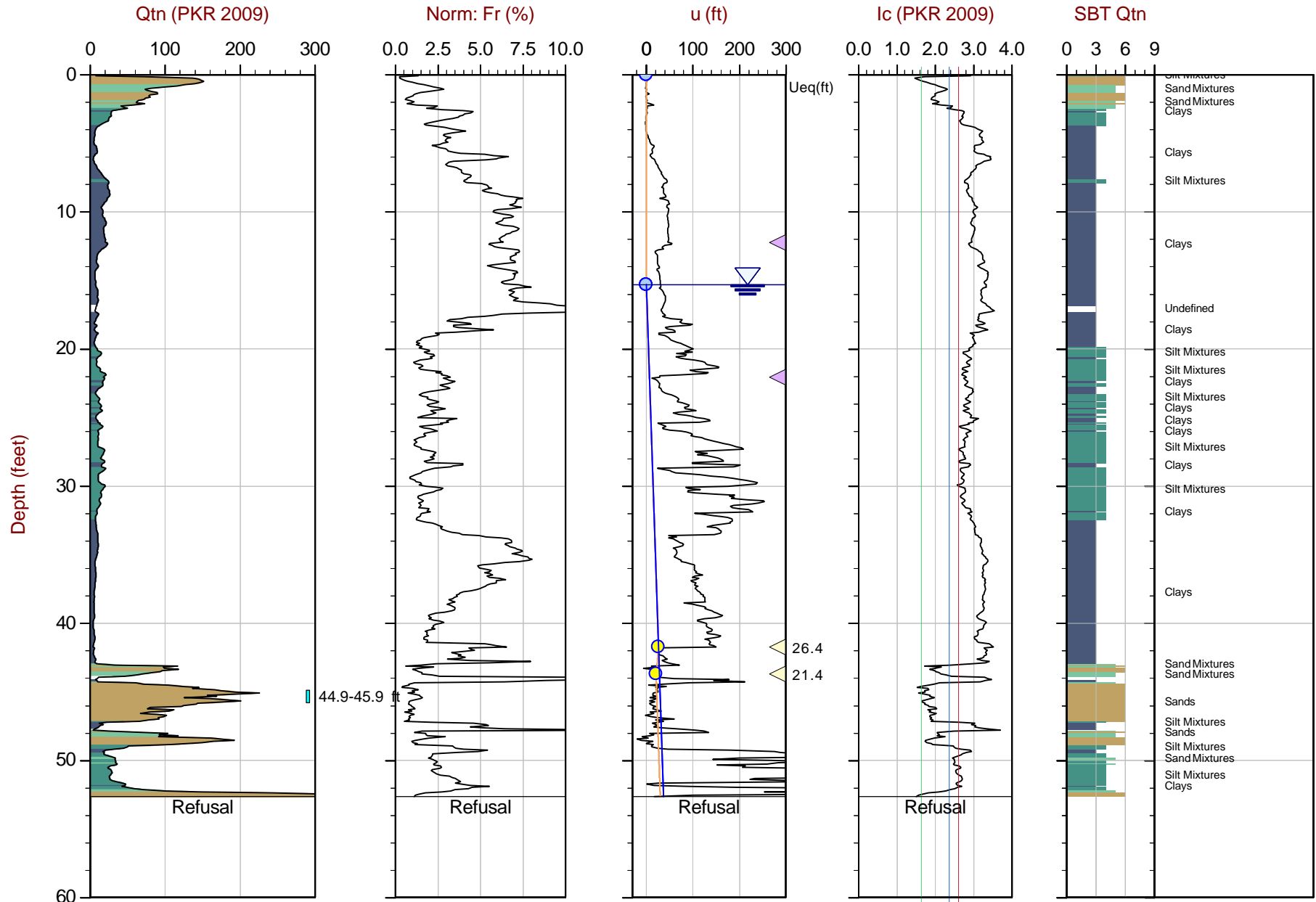
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-13 11:34
Site: Cholla Power Plant

Sounding: CPT-20
Cone: 552:T1500F15U500



Max Depth: 16.050 m / 52.66 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP20.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928437 Long: -110.267551

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

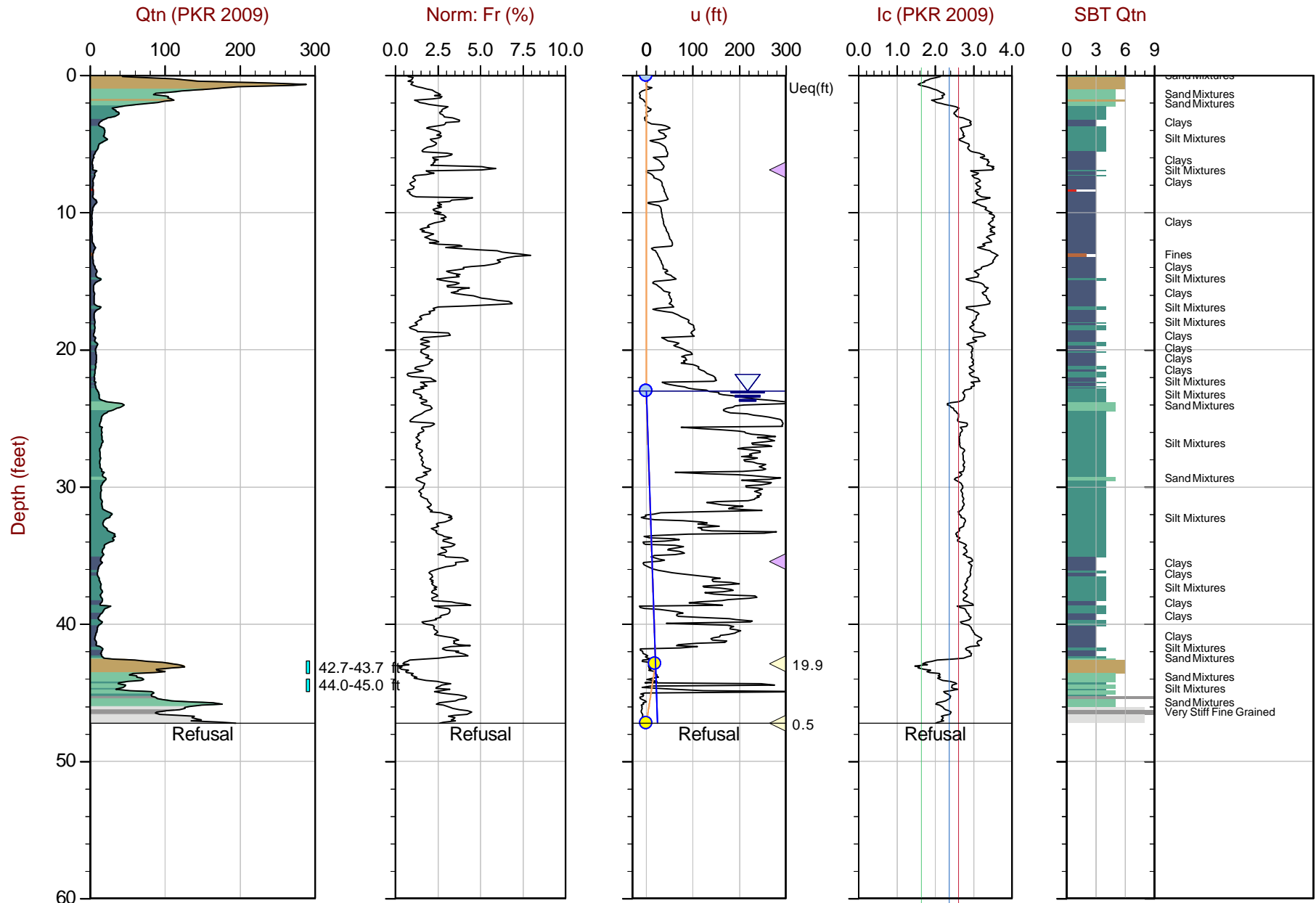
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-13 14:09
Site: Cholla Power Plant

Sounding: CPT-21
Cone: 552:T1500F15U500



Max Depth: 14.400 m / 47.24 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP21.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928272 Long: -110.267246

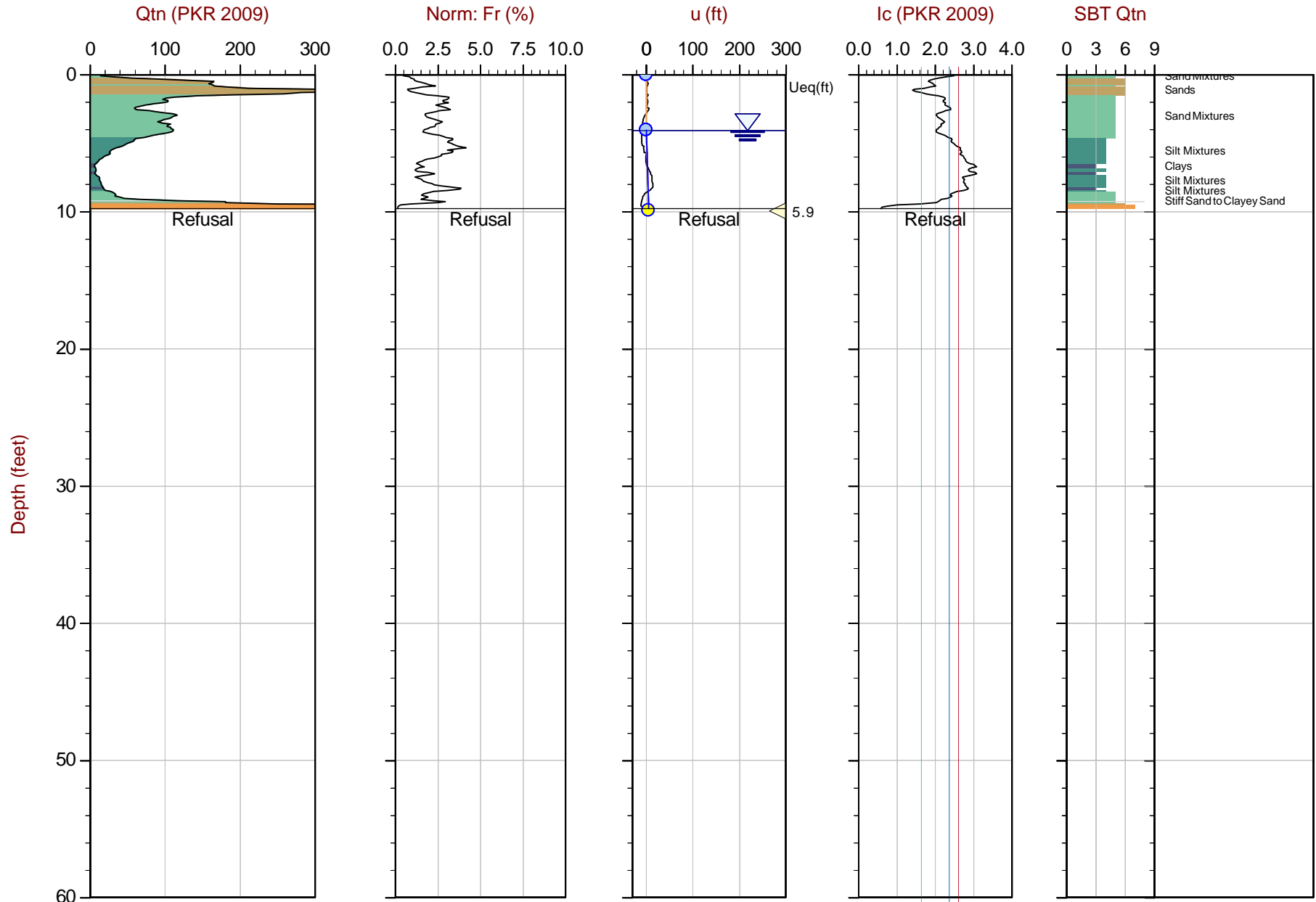
Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▲ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-13 11:25
Site: Cholla Power Plant

Sounding: CPT-22
Cone: 552:T1500F15U500



Max Depth: 2.975 m / 9.76 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP22.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928016 Long: -110.266925

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

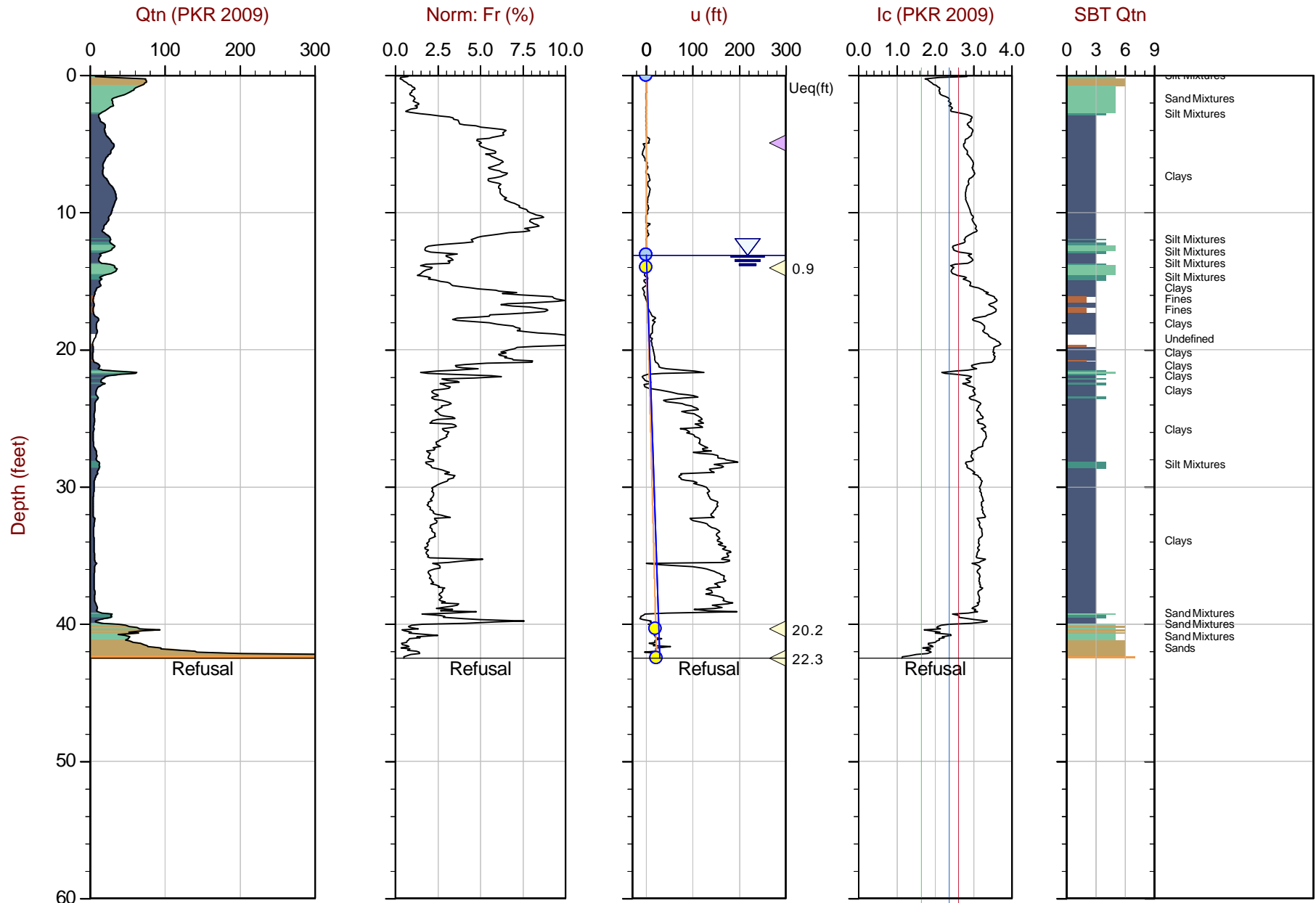
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-16 14:09
Site: Cholla Power Plant

Sounding: CPT-23
Cone: 552:T1500F15U500



Max Depth: 12.950 m / 42.49 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP23.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928670 Long: -110.267932

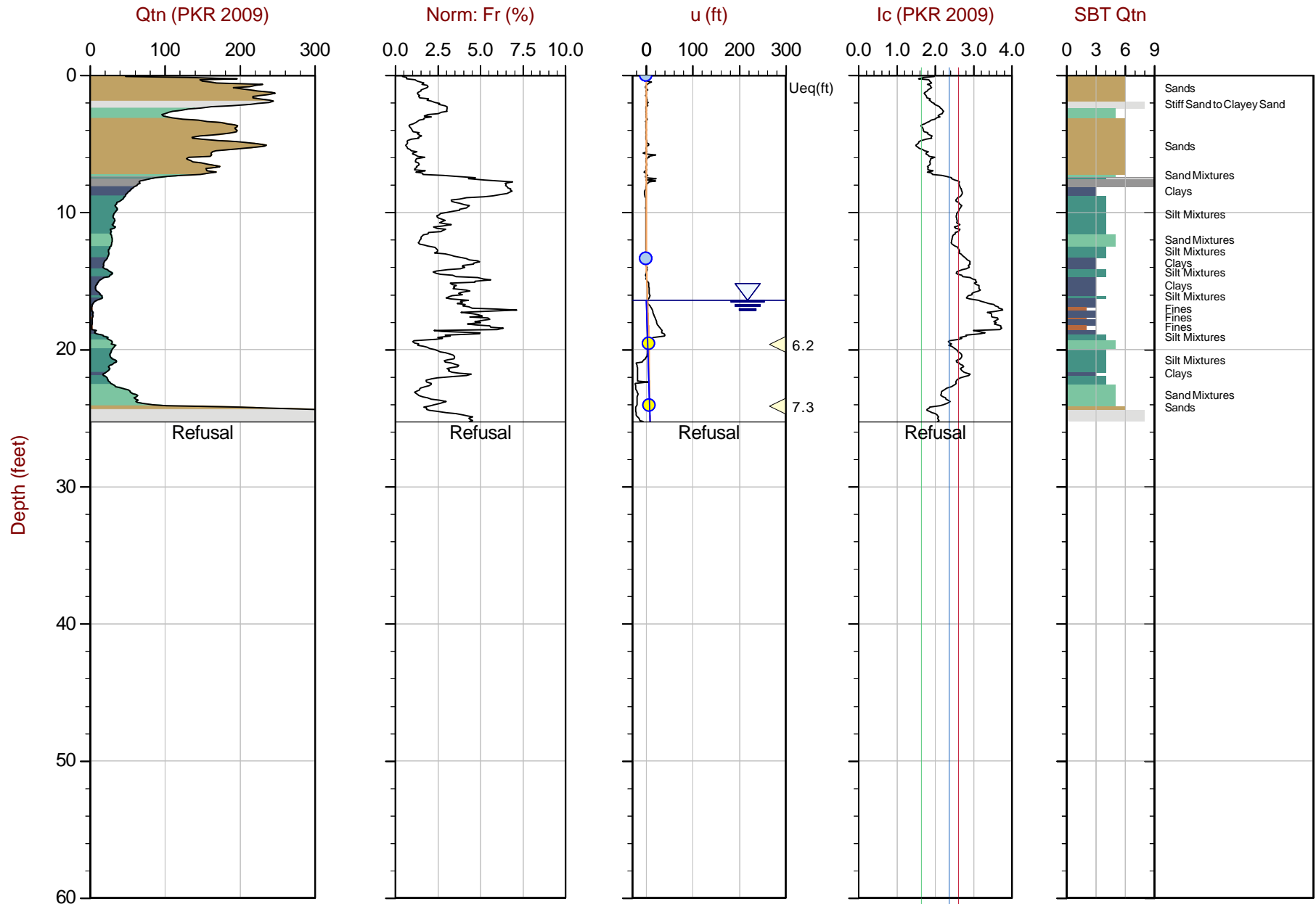
Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-19 15:11
Site: Cholla Power Plant

Sounding: CPT-24
Cone: 552:T1500F15U500



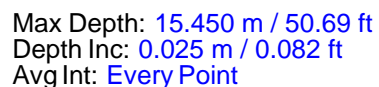
Max Depth: 7.700 m / 25.26 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP24.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929637 Long: -110.269138

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



File: 20-52-21054_SP25.COR
Unit Wt: SBTQtn (PKR2009)

SBT: [Robertson, 2009 and 2010](#)
 Coords: [Lat: 34.928437](#) [Long: -110.267658](#)

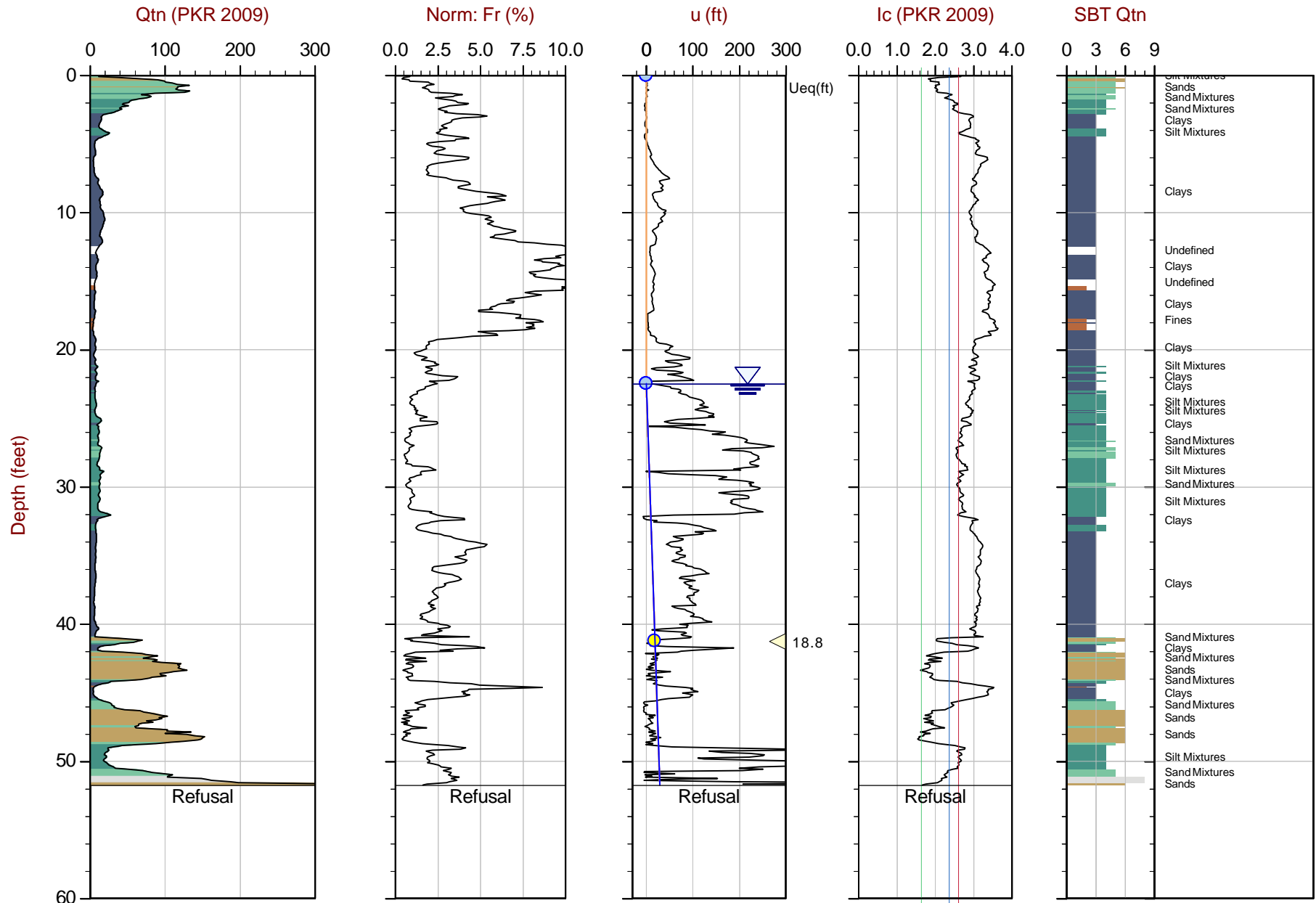
Overplot Item: ● Ueq ○ Assumed Ueq ◀ Dissipation, Ueq achieved ◁ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample



Wood plc

Job No: 20-52-21054
Date: 2020-07-20 11:28
Site: Cholla Power Plant

Sounding: CPT-26
Cone: 657:T1500F15U500



Max Depth: 15.775 m / 51.75 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP26.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928306 Long: -110.267504

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line | Water Sample

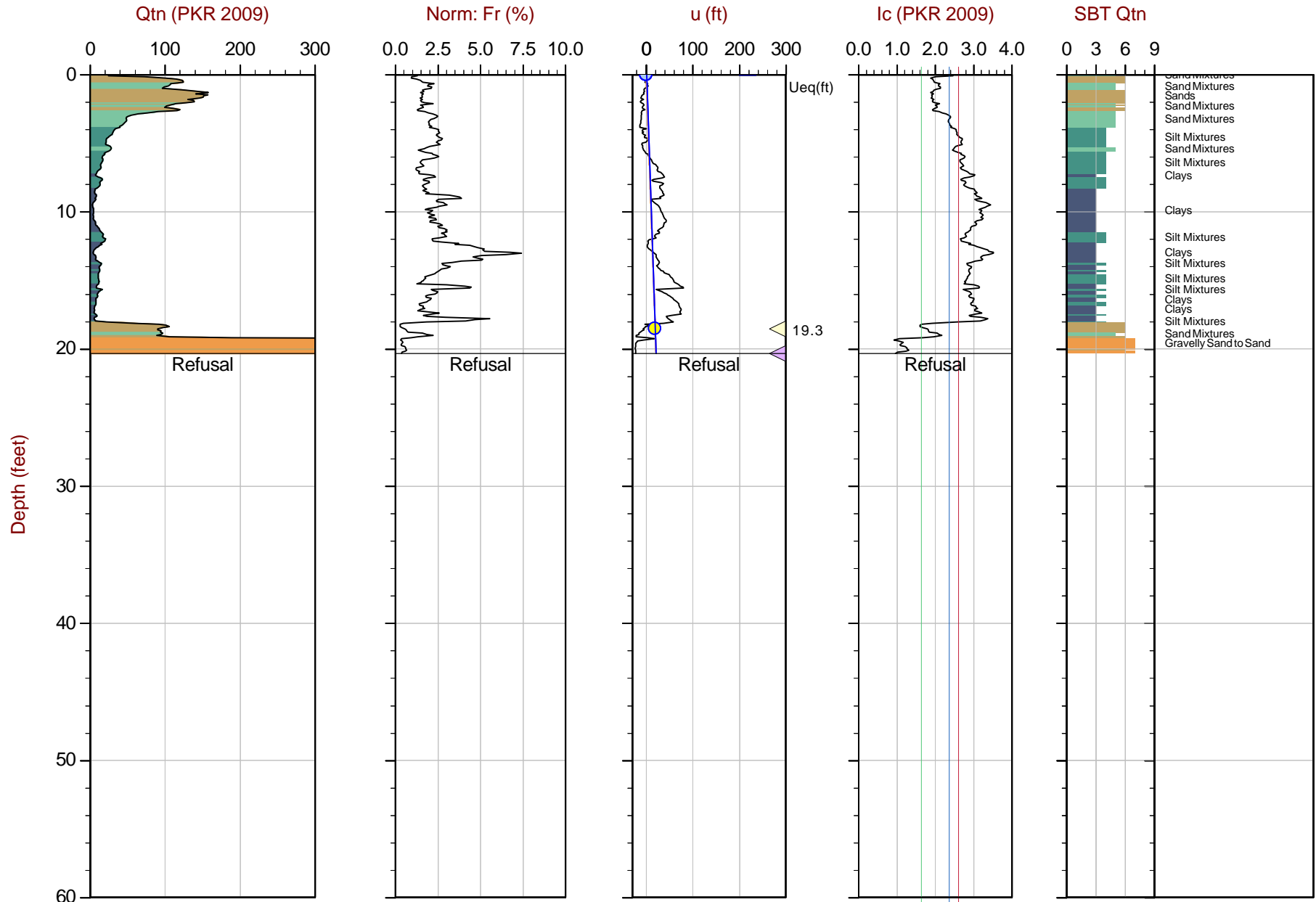
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-20 12:56
Site: Cholla Power Plant

Sounding: CPT-27
Cone: 657:T1500F15U500



Max Depth: 6.200 m / 20.34 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP27.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928146 Long: -110.267118

Overplot Item: ● Ueq ○ Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

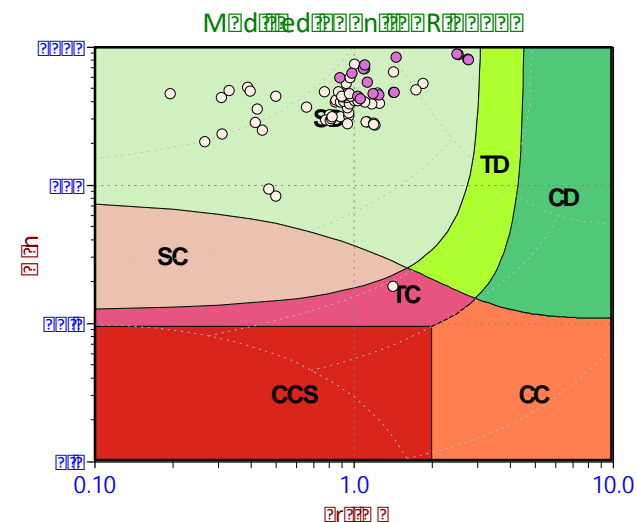
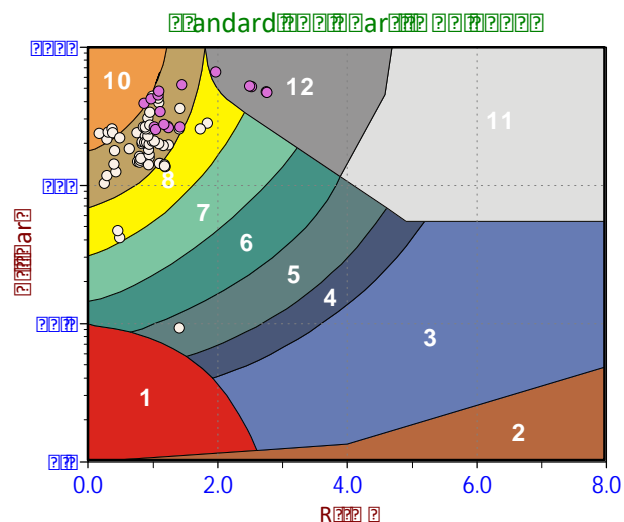
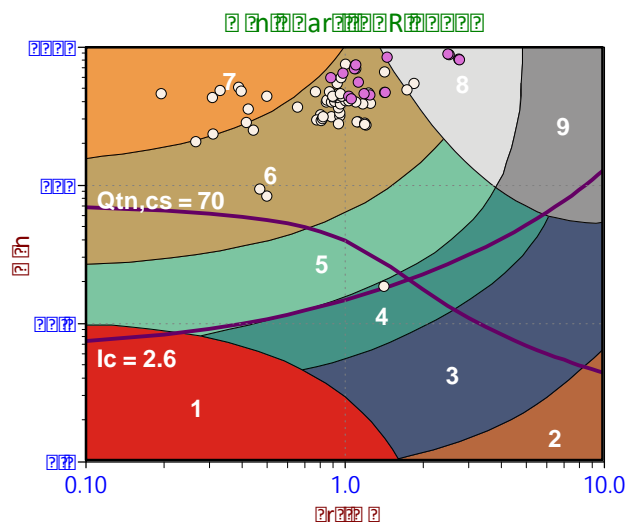
SBT Zone Scatter Plots



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 08:09
Site: Cholla Power Plant

Sounding: CPT-01
Cone: 552:T1500F15U500



Depth Ranges

- >0.0 to 5.0 ft
- >5.0 to 10.0 ft
- >10.0 to 15.0 ft
- >15.0 to 20.0 ft
- >20.0 to 25.0 ft
- >25.0 to 30.0 ft
- >30.0 to 35.0 ft
- >35.0 to 40.0 ft
- >40.0 to 45.0 ft
- >45.0 to 50.0 ft
- >50.0 ft

Legend

- Fines
- Fines
- Clays
- Silt Mixtures
- Sand Mixtures
- Sands
- Gravelly Sand to Sand
- Stiff Sand to Clayey Sand
- Very Stiff Fine Grained

Legend

- Fines
- Fines
- Clay
- Silty Clay
- Clayey Silt
- Silt
- Sandy Silt
- Silty Sand/Sand
- Sand
- Gravelly Sand
- Stiff Fine Grained
- Cemented Sand

Legend

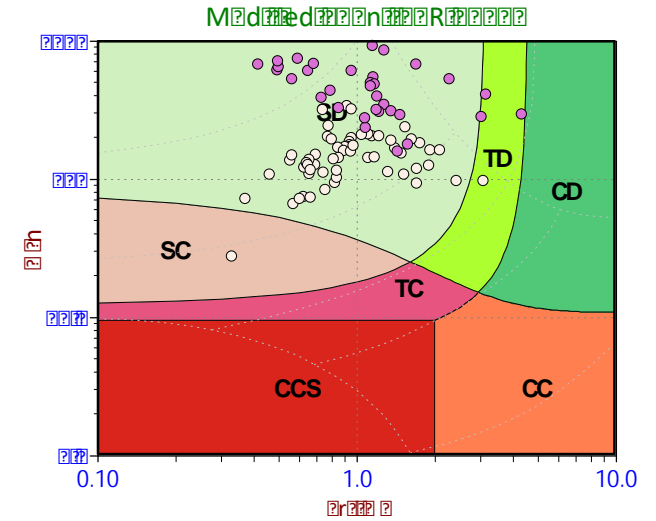
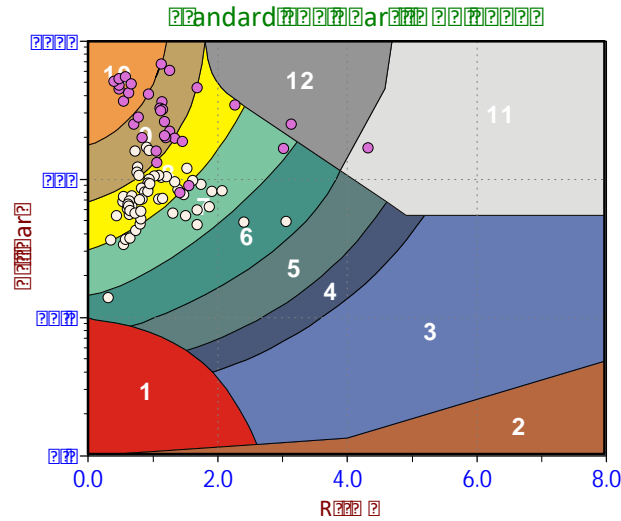
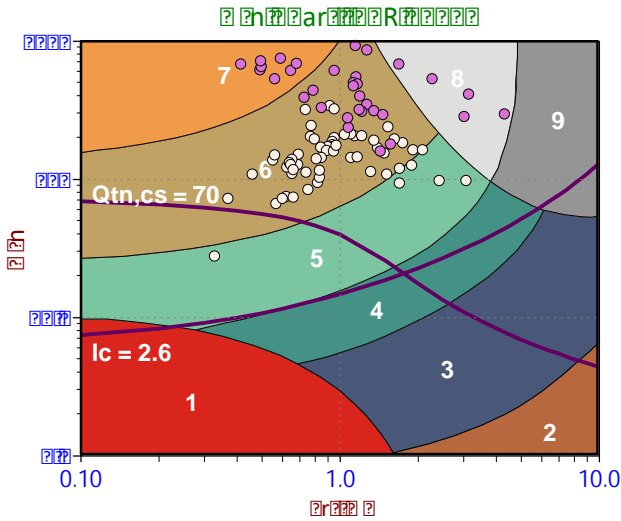
- CCS (Cont. sensitive clay like)
- CC (Cont. clay like)
- TC (Cont. transitional)
- SC (Cont. sand like)
- CD (Dil. clay like)
- TD (Dil. transitional)
- SD (Dil. sand like)



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 08:46
Site: Cholla Power Plant

Sounding: CPT-03
Cone: 552:T1500F15U500



Depth Ranges

- >0.0 to 5.0 ft
- >5.0 to 10.0 ft
- >10.0 to 15.0 ft
- >15.0 to 20.0 ft
- >20.0 to 25.0 ft
- >25.0 to 30.0 ft
- >30.0 to 35.0 ft
- >35.0 to 40.0 ft
- >40.0 to 45.0 ft
- >45.0 to 50.0 ft
- >50.0 ft

Legend

- Fines
- Fines
- Clays
- Silt Mixtures
- Sand Mixtures
- Sands
- Gravelly Sand to Sand
- Stiff Sand to Clayey Sand
- Very Stiff Fine Grained

Legend

- Fines
- Fines
- Clay
- Silty Clay
- Clayey Silt
- Silt
- Sandy Silt
- Silty Sand/Sand
- Sand
- Gravelly Sand
- Stiff Fine Grained
- Cemented Sand

Legend

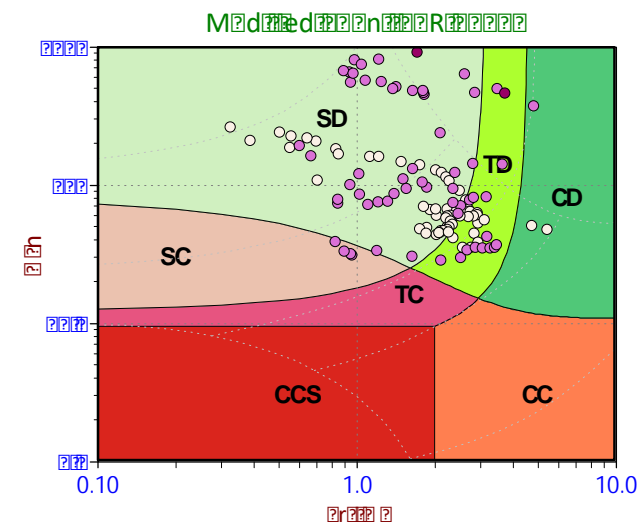
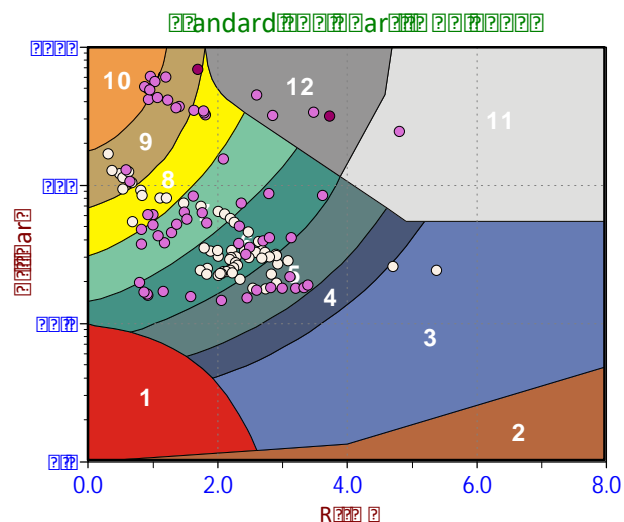
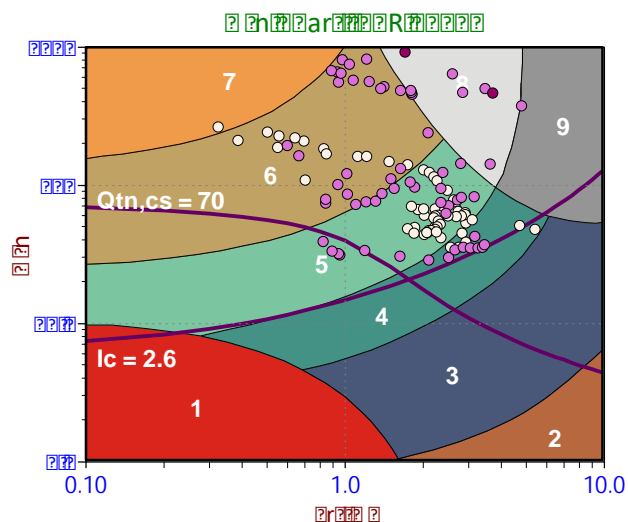
- CCS (Cont. sensitive clay like)
- CC (Cont. clay like)
- TC (Cont. transitional)
- SC (Cont. sand like)
- CD (Dil. clay like)
- TD (Dil. transitional)
- SD (Dil. sand like)



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 09:23
Site: Cholla Power Plant

Sounding: CPT-05
Cone: 552:T1500F15U500



Depth Ranges

- >0.0 to 5.0 ft
- >5.0 to 10.0 ft
- >10.0 to 15.0 ft
- >15.0 to 20.0 ft
- >20.0 to 25.0 ft
- >25.0 to 30.0 ft
- >30.0 to 35.0 ft
- >35.0 to 40.0 ft
- >40.0 to 45.0 ft
- >45.0 to 50.0 ft
- >50.0 ft

Legend

- Fines
- Fines
- Clays
- Silt Mixtures
- Sand Mixtures
- Sands
- Gravelly Sand to Sand
- Stiff Sand to Clayey Sand
- Very Stiff Fine Grained

Legend

- Fines
- Fines
- Clay
- Silty Clay
- Clayey Silt
- Silt
- Sandy Silt
- Silty Sand/Sand
- Sand
- Gravelly Sand
- Stiff Fine Grained
- Cemented Sand

Legend

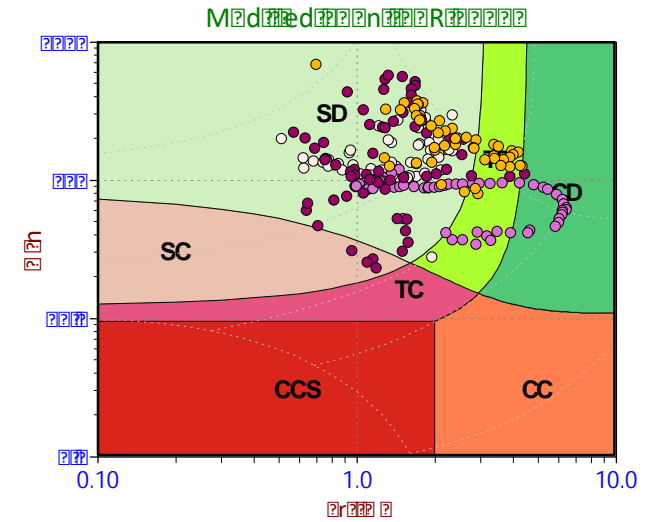
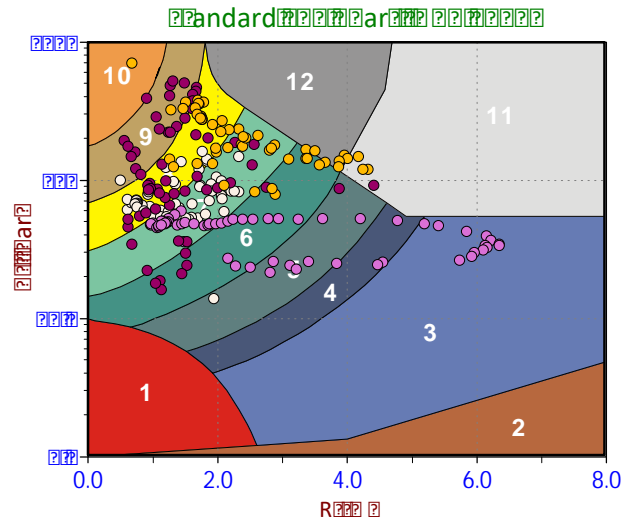
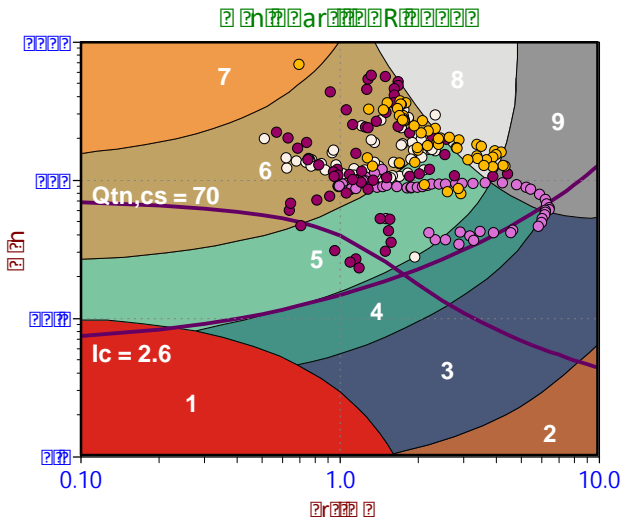
- CCS (Cont. sensitive clay like)
- CC (Cont. clay like)
- TC (Cont. transitional)
- SC (Cont. sand like)
- CD (Dil. clay like)
- TD (Dil. transitional)
- SD (Dil. sand like)



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 10:16
Site: Cholla Power Plant

Sounding: CPT-07
Cone: 552:T1500F15U500



Depth Ranges

- >0.0 to 5.0 ft
- >5.0 to 10.0 ft
- >10.0 to 15.0 ft
- >15.0 to 20.0 ft
- >20.0 to 25.0 ft
- >25.0 to 30.0 ft
- >30.0 to 35.0 ft
- >35.0 to 40.0 ft
- >40.0 to 45.0 ft
- >45.0 to 50.0 ft
- >50.0 ft

Legend

- Fines
- Fines
- Clays
- Silt Mixtures
- Sand Mixtures
- Sands
- Gravelly Sand to Sand
- Stiff Sand to Clayey Sand
- Very Stiff Fine Grained

Legend

- Fines
- Fines
- Clay
- Silty Clay
- Clayey Silt
- Silt
- Sandy Silt
- Silty Sand/Sand
- Sand
- Gravelly Sand
- Stiff Fine Grained
- Cemented Sand

Legend

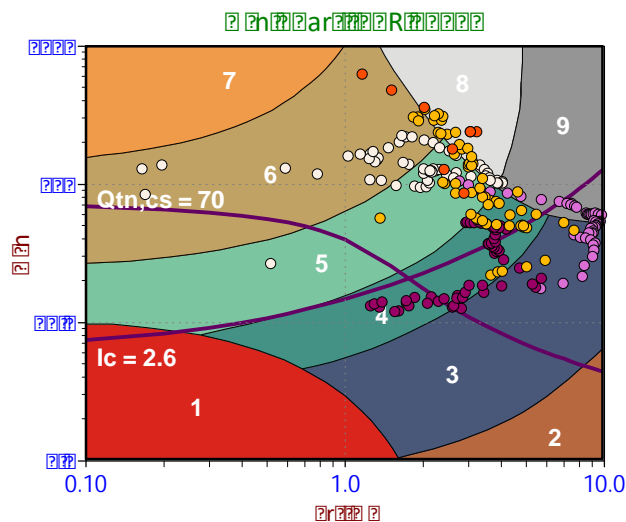
- CCS (Cont. sensitive clay like)
- CC (Cont. clay like)
- TC (Cont. transitional)
- SC (Cont. sand like)
- CD (Dil. clay like)
- TD (Dil. transitional)
- SD (Dil. sand like)



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 11:09
Site: Cholla Power Plant

Sounding: CPT-08
Cone: 552:T1500F15U500

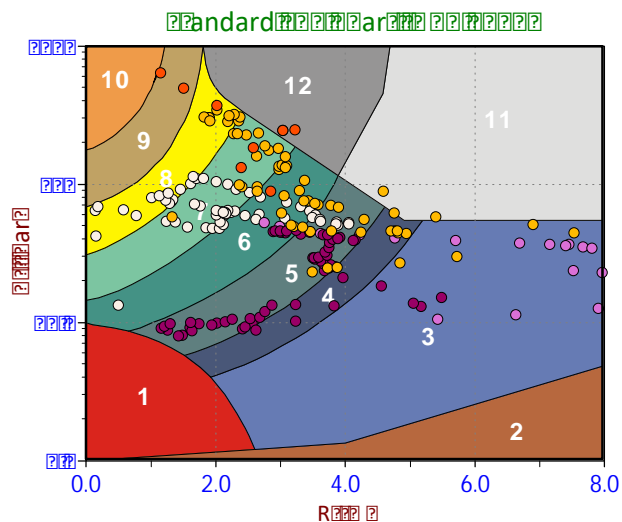


Depth Ranges

- >0.0 to 5.0 ft
- >5.0 to 10.0 ft
- >10.0 to 15.0 ft
- >15.0 to 20.0 ft
- >20.0 to 25.0 ft
- >25.0 to 30.0 ft
- >30.0 to 35.0 ft
- >35.0 to 40.0 ft
- >40.0 to 45.0 ft
- >45.0 to 50.0 ft
- >50.0 ft

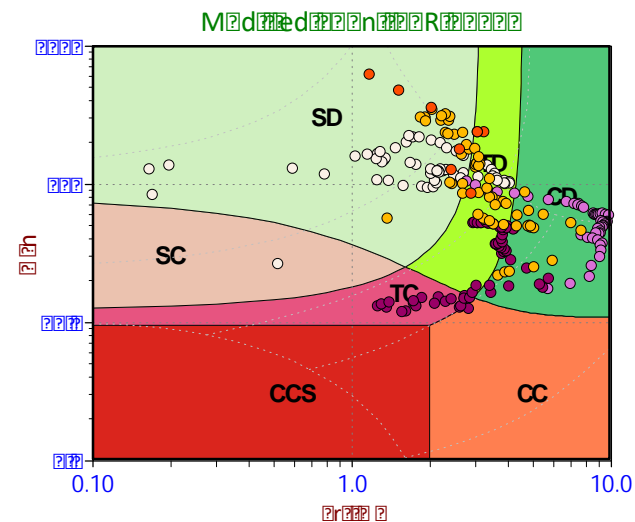
Legend

- Fines
- Fines
- Clays
- Silt Mixtures
- Sand Mixtures
- Sands
- Gravelly Sand to Sand
- Stiff Sand to Clayey Sand
- Very Stiff Fine Grained



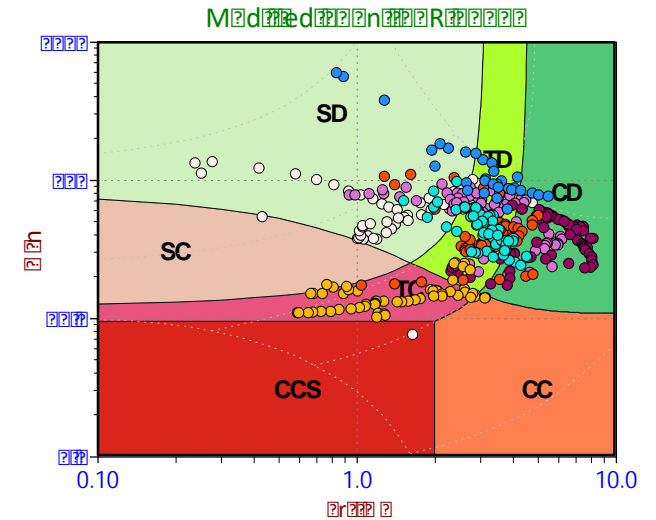
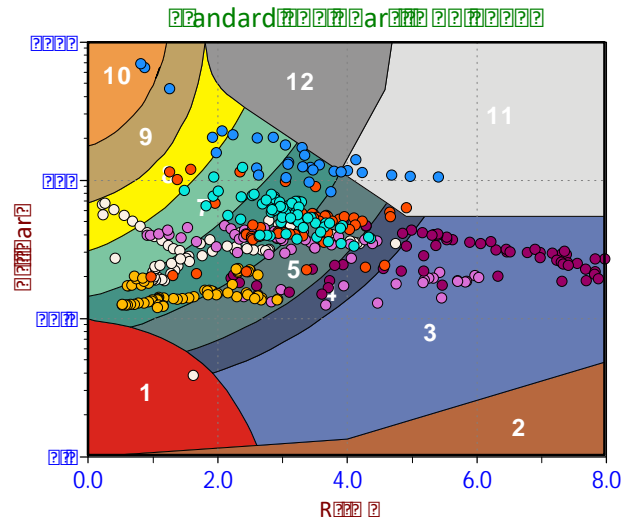
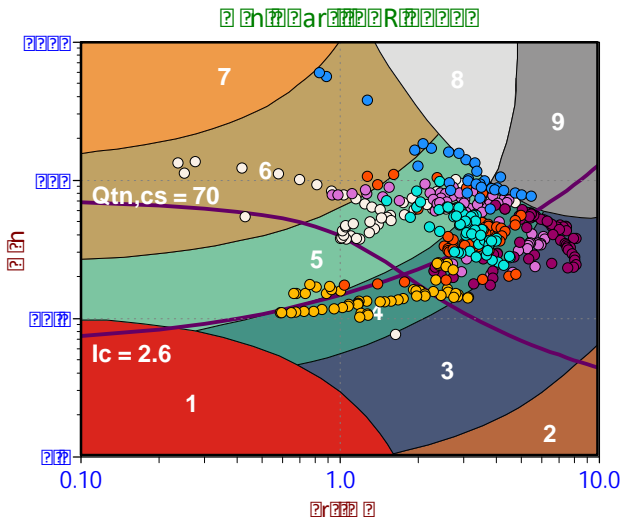
Legend

- Fines
- Fines
- Clay
- Silty Clay
- Clayey Silt
- Silt
- Sandy Silt
- Silty Sand/Sand
- Sand
- Gravelly Sand
- Stiff Fine Grained
- Cemented Sand



Legend

- CCS (Cont. sensitive clay like)
- CC (Cont. clay like)
- TC (Cont. transitional)
- SC (Cont. sand like)
- CD (Dil. clay like)
- TD (Dil. transitional)
- SD (Dil. sand like)



Depth Ranges

- >0.0 to 5.0 ft
- >5.0 to 10.0 ft
- >10.0 to 15.0 ft
- >15.0 to 20.0 ft
- >20.0 to 25.0 ft
- >25.0 to 30.0 ft
- >30.0 to 35.0 ft
- >35.0 to 40.0 ft
- >40.0 to 45.0 ft
- >45.0 to 50.0 ft
- >50.0 ft

Legend

- Fines
- Fines
- Clays
- Silt Mixtures
- Sand Mixtures
- Sands
- Gravelly Sand to Sand
- Stiff Sand to Clayey Sand
- Very Stiff Fine Grained

Legend

- Fines
- Fines
- Clay
- Silty Clay
- Clayey Silt
- Silt
- Sandy Silt
- Silty Sand/Sand
- Sand
- Gravelly Sand
- Stiff Fine Grained
- Cemented Sand

Legend

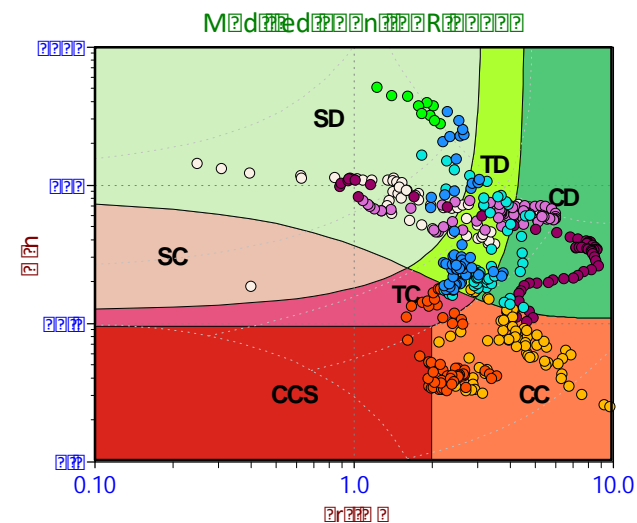
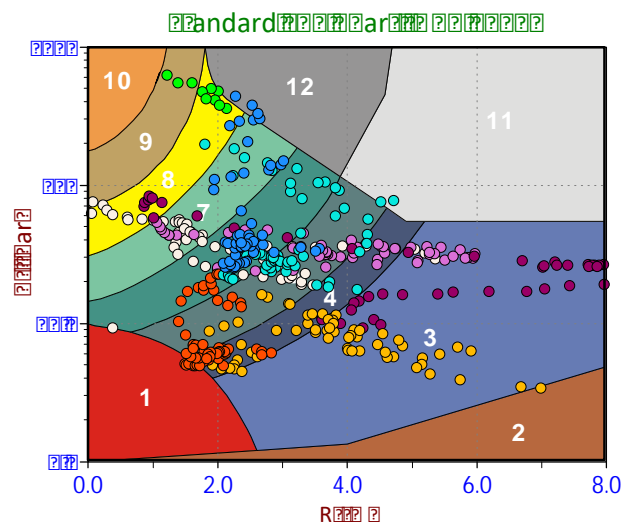
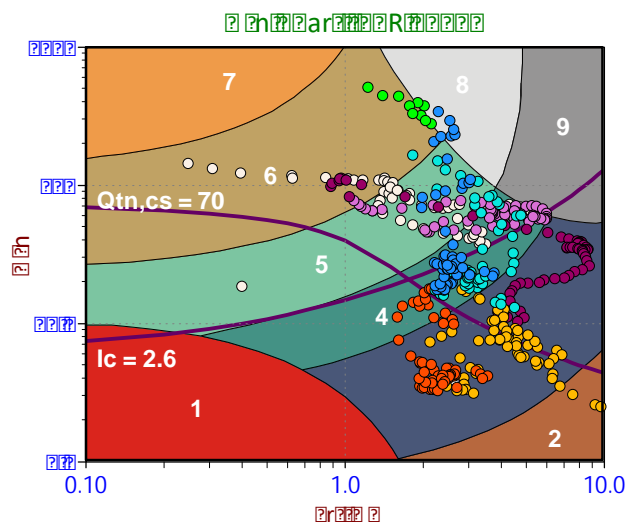
- CCS (Cont. sensitive clay like)
- CC (Cont. clay like)
- TC (Cont. transitional)
- SC (Cont. sand like)
- CD (Dil. clay like)
- TD (Dil. transitional)
- SD (Dil. sand like)



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 13:15
Site: Cholla Power Plant

Sounding: CPT-10
Cone: 552:T1500F15U500



Depth Ranges

- >0.0 to 5.0 ft
- >5.0 to 10.0 ft
- >10.0 to 15.0 ft
- >15.0 to 20.0 ft
- >20.0 to 25.0 ft
- >25.0 to 30.0 ft
- >30.0 to 35.0 ft
- >35.0 to 40.0 ft
- >40.0 to 45.0 ft
- >45.0 to 50.0 ft
- >50.0 ft

Legend

- Fines
- Fines
- Clays
- Silt Mixtures
- Sand Mixtures
- Sands
- Gravelly Sand to Sand
- Stiff Sand to Clayey Sand
- Very Stiff Fine Grained

Legend

- Fines
- Fines
- Clay
- Silty Clay
- Clayey Silt
- Silt
- Sandy Silt
- Silty Sand/Sand
- Sand
- Gravelly Sand
- Stiff Fine Grained
- Cemented Sand

Legend

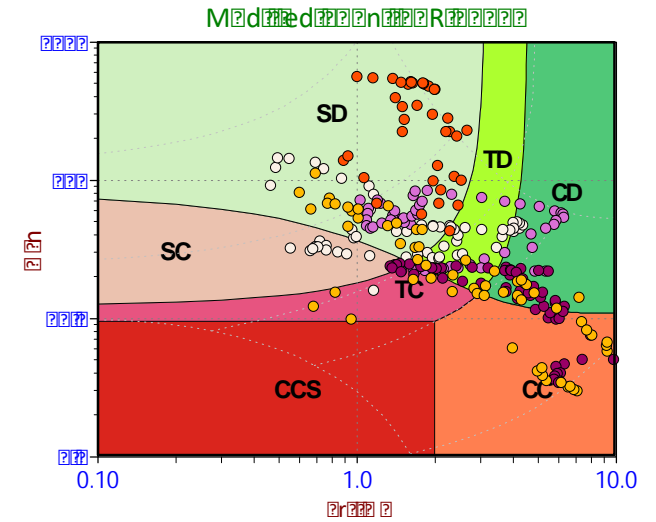
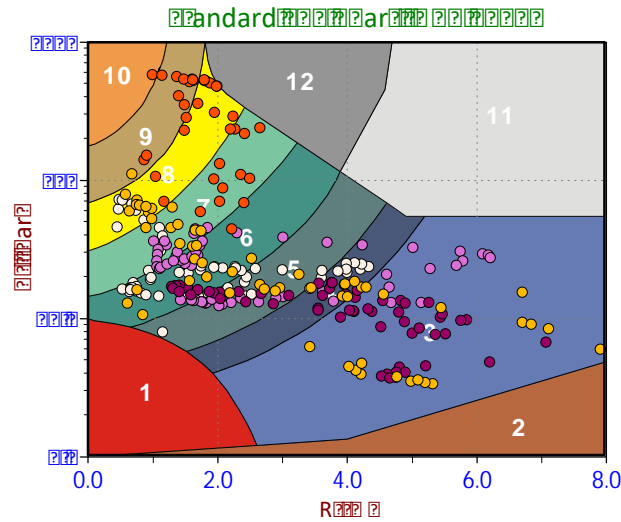
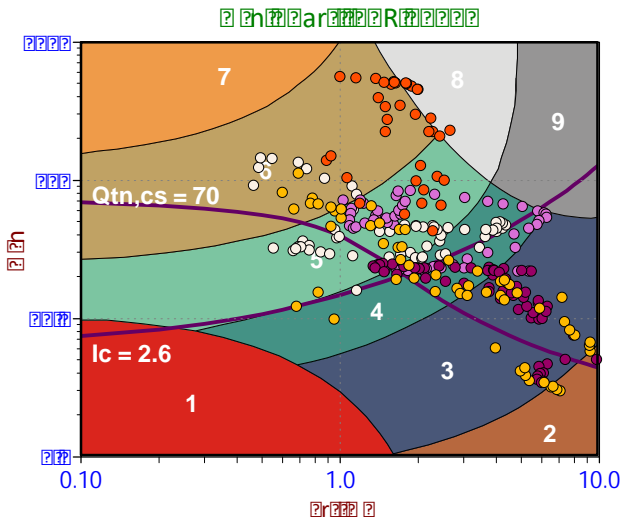
- CCS (Cont. sensitive clay like)
- CC (Cont. clay like)
- TC (Cont. transitional)
- SC (Cont. sand like)
- CD (Dil. clay like)
- TD (Dil. transitional)
- SD (Dil. sand like)



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 15:02
Site: Cholla Power Plant

Sounding: CPT-11
Cone: 552:T1500F15U500



Depth Ranges

- >0.0 to 5.0 ft
- >5.0 to 10.0 ft
- >10.0 to 15.0 ft
- >15.0 to 20.0 ft
- >20.0 to 25.0 ft
- >25.0 to 30.0 ft
- >30.0 to 35.0 ft
- >35.0 to 40.0 ft
- >40.0 to 45.0 ft
- >45.0 to 50.0 ft
- >50.0 ft

Legend

- Fines
- Fines
- Clays
- Silt Mixtures
- Sand Mixtures
- Sands
- Gravelly Sand to Sand
- Stiff Sand to Clayey Sand
- Very Stiff Fine Grained

Legend

- Fines
- Fines
- Clay
- Silty Clay
- Clayey Silt
- Silt
- Sandy Silt
- Silty Sand/Sand
- Sand
- Gravelly Sand
- Stiff Fine Grained
- Cemented Sand

Legend

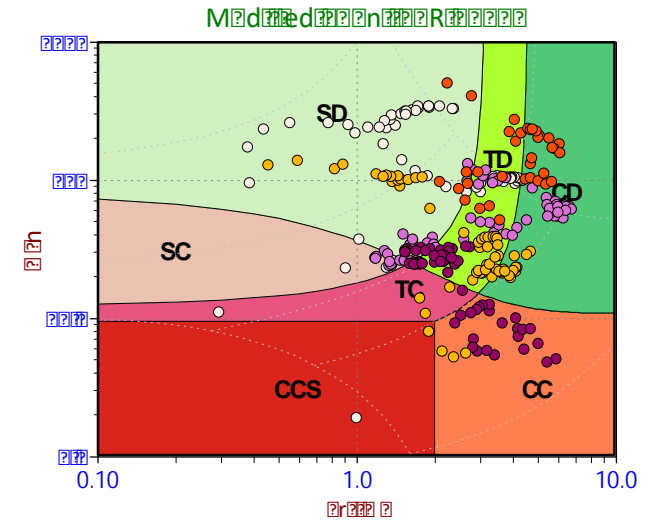
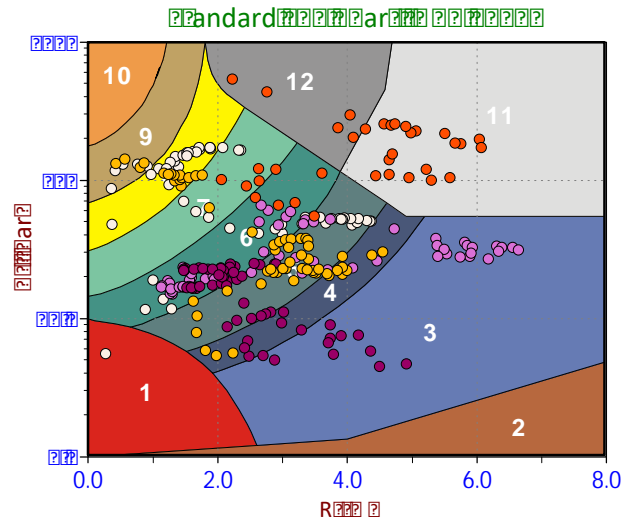
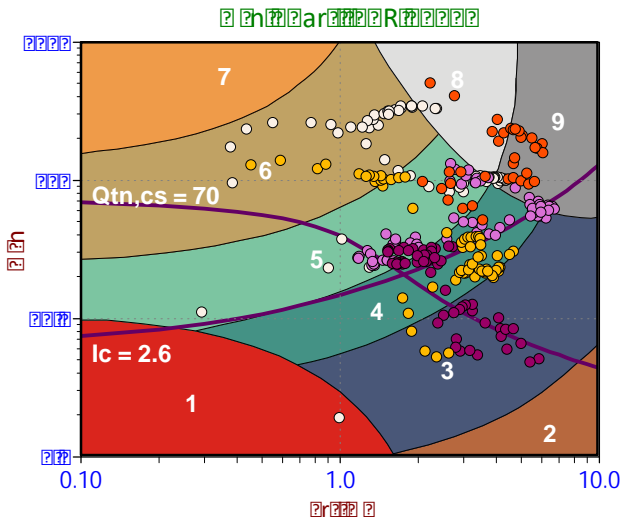
- CCS (Cont. sensitive clay like)
- CC (Cont. clay like)
- TC (Cont. transitional)
- SC (Cont. sand like)
- CD (Dil. clay like)
- TD (Dil. transitional)
- SD (Dil. sand like)



Wood plc

Job No: 20-52-21054
Date: 2020-07-16 08:09
Site: Cholla Power Plant

Sounding: CPT-12
Cone: 552:T1500F15U500



Depth Ranges

- >0.0 to 5.0 ft
- >5.0 to 10.0 ft
- >10.0 to 15.0 ft
- >15.0 to 20.0 ft
- >20.0 to 25.0 ft
- >25.0 to 30.0 ft
- >30.0 to 35.0 ft
- >35.0 to 40.0 ft
- >40.0 to 45.0 ft
- >45.0 to 50.0 ft
- >50.0 ft

Legend

- Fines
- Fines
- Clays
- Silt Mixtures
- Sand Mixtures
- Sands
- Gravelly Sand to Sand
- Stiff Sand to Clayey Sand
- Very Stiff Fine Grained

Legend

- Fines
- Fines
- Clay
- Silty Clay
- Clayey Silt
- Silt
- Sandy Silt
- Silty Sand/Sand
- Sand
- Gravelly Sand
- Stiff Fine Grained
- Cemented Sand

Legend

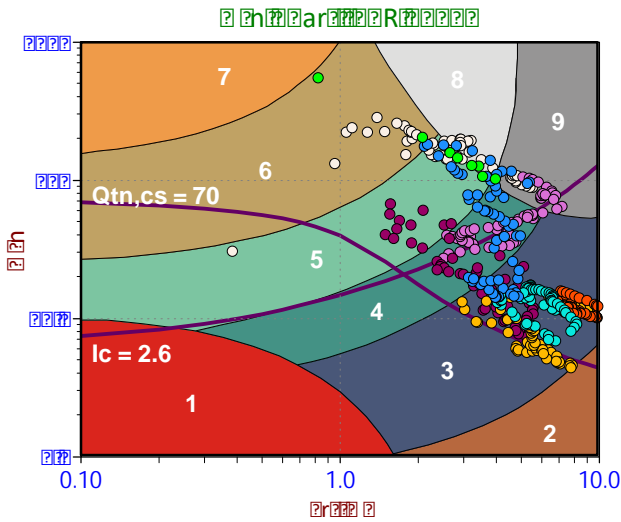
- CCS (Cont. sensitive clay like)
- CC (Cont. clay like)
- TC (Cont. transitional)
- SC (Cont. sand like)
- CD (Dil. clay like)
- TD (Dil. transitional)
- SD (Dil. sand like)



Wood plc

Job No: 20-52-21054
Date: 2020-07-16 09:23
Site: Cholla Power Plant

Sounding: CPT-13
Cone: 552:T1500F15U500

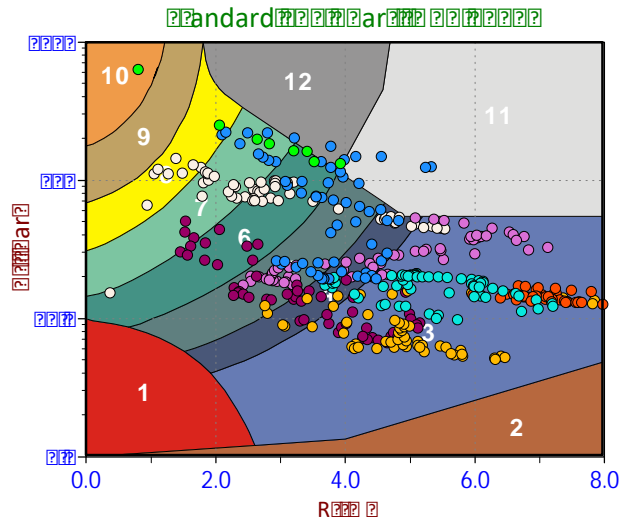


Depth Ranges

- >0.0 to 5.0 ft
- >5.0 to 10.0 ft
- >10.0 to 15.0 ft
- >15.0 to 20.0 ft
- >20.0 to 25.0 ft
- >25.0 to 30.0 ft
- >30.0 to 35.0 ft
- >35.0 to 40.0 ft
- >40.0 to 45.0 ft
- >45.0 to 50.0 ft
- >50.0 ft

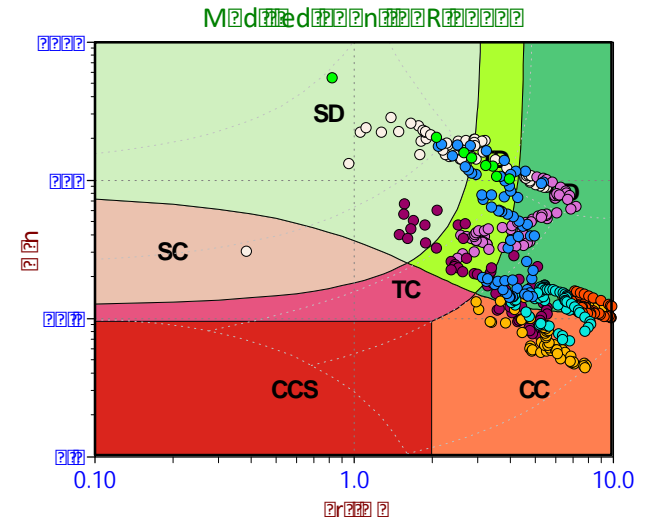
Legend

- Fines
- Fines
- Clays
- Silt Mixtures
- Sand Mixtures
- Sands
- Gravelly Sand to Sand
- Stiff Sand to Clayey Sand
- Very Stiff Fine Grained



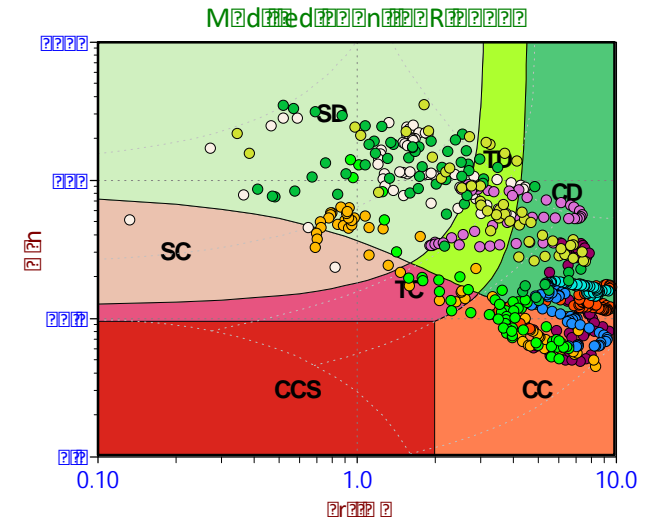
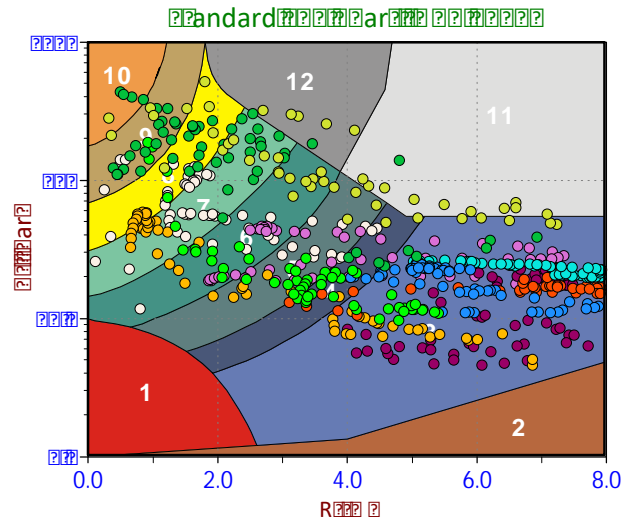
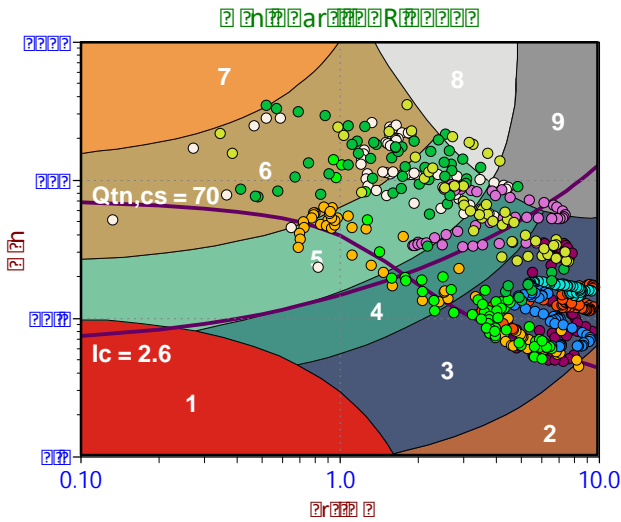
Legend

- Fines
- Fines
- Clay
- Silty Clay
- Clayey Silt
- Silt
- Sandy Silt
- Silty Sand/Sand
- Sand
- Gravelly Sand
- Stiff Fine Grained
- Cemented Sand



Legend

- CCS (Cont. sensitive clay like)
- CC (Cont. clay like)
- TC (Cont. transitional)
- SC (Cont. sand like)
- CD (Dil. clay like)
- TD (Dil. transitional)
- SD (Dil. sand like)



Depth Ranges

- >0.0 to 5.0 ft
- >5.0 to 10.0 ft
- >10.0 to 15.0 ft
- >15.0 to 20.0 ft
- >20.0 to 25.0 ft
- >25.0 to 30.0 ft
- >30.0 to 35.0 ft
- >35.0 to 40.0 ft
- >40.0 to 45.0 ft
- >45.0 to 50.0 ft
- >50.0 ft

Legend

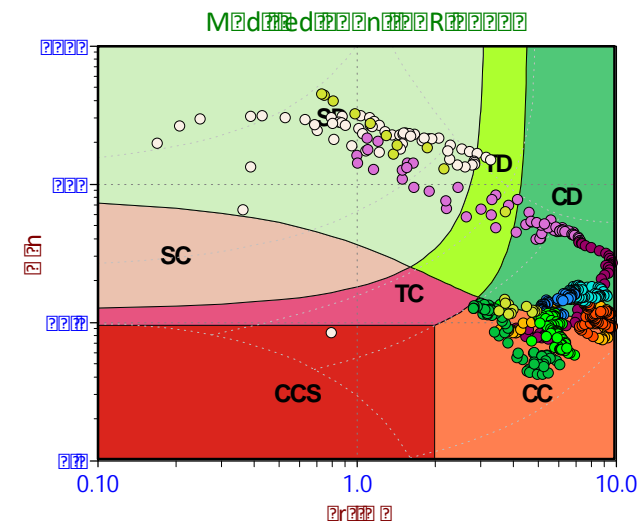
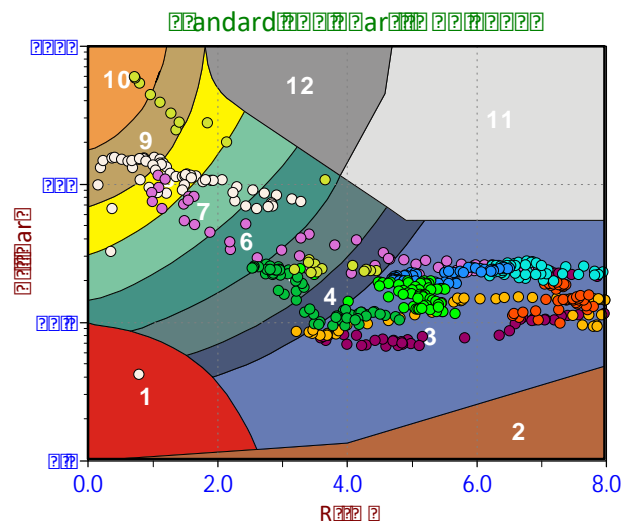
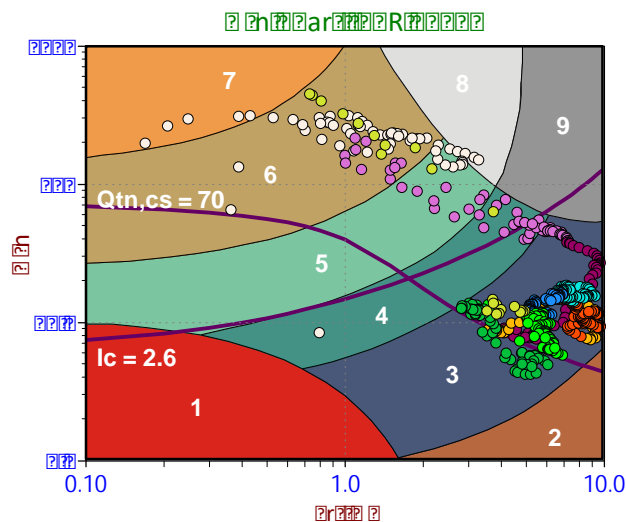
- Fines
- Fines
- Clays
- Silt Mixtures
- Sand Mixtures
- Sands
- Gravelly Sand to Sand
- Stiff Sand to Clayey Sand
- Very Stiff Fine Grained

Legend

- Fines
- Fines
- Clay
- Silty Clay
- Clayey Silt
- Silt
- Sandy Silt
- Silty Sand/Sand
- Sand
- Gravelly Sand
- Stiff Fine Grained
- Cemented Sand

Legend

- CCS (Cont. sensitive clay like)
- CC (Cont. clay like)
- TC (Cont. transitional)
- SC (Cont. sand like)
- CD (Dil. clay like)
- TD (Dil. transitional)
- SD (Dil. sand like)



Depth Ranges

- >0.0 to 5.0 ft
- >5.0 to 10.0 ft
- >10.0 to 15.0 ft
- >15.0 to 20.0 ft
- >20.0 to 25.0 ft
- >25.0 to 30.0 ft
- >30.0 to 35.0 ft
- >35.0 to 40.0 ft
- >40.0 to 45.0 ft
- >45.0 to 50.0 ft
- >50.0 ft

Legend

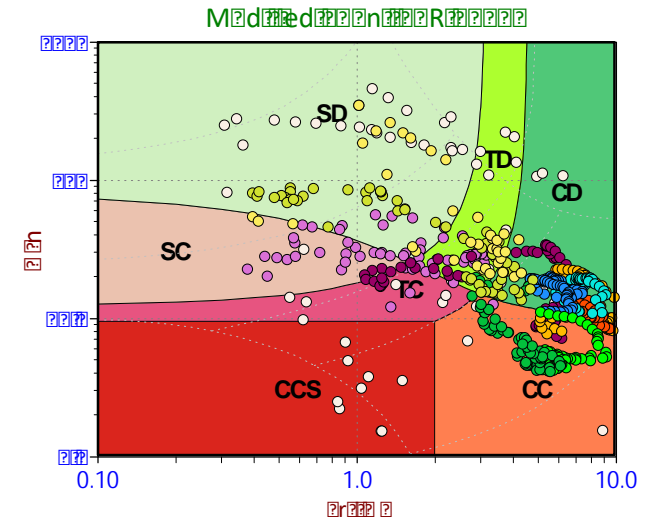
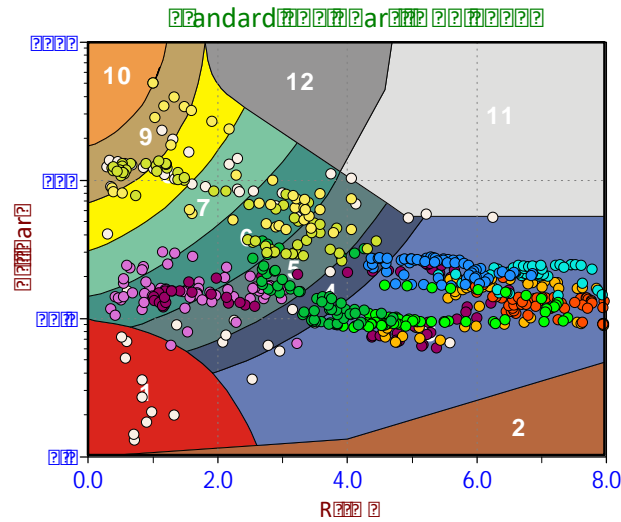
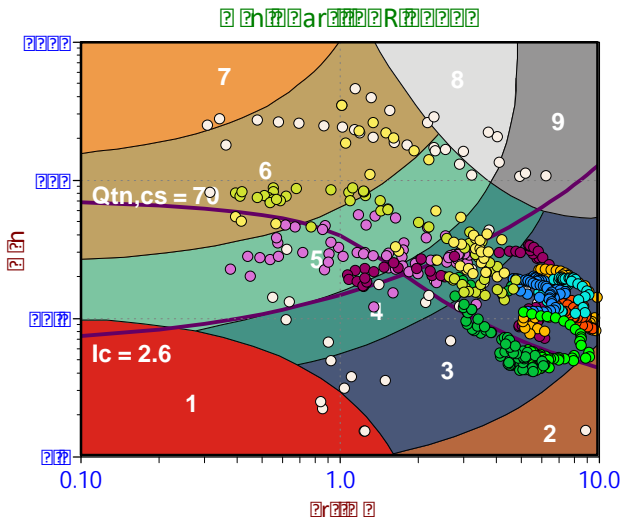
- Fines
- Fines
- Clays
- Silt Mixtures
- Sand Mixtures
- Sands
- Gravelly Sand to Sand
- Stiff Sand to Clayey Sand
- Very Stiff Fine Grained

Legend

- Fines
- Fines
- Clay
- Silty Clay
- Clayey Silt
- Silt
- Sandy Silt
- Silty Sand/Sand
- Sand
- Gravelly Sand
- Stiff Fine Grained
- Cemented Sand

Legend

- CCS (Cont. sensitive clay like)
- CC (Cont. clay like)
- TC (Cont. transitional)
- SC (Cont. sand like)
- CD (Dil. clay like)
- TD (Dil. transitional)
- SD (Dil. sand like)



Depth Ranges

- >0.0 to 5.0 ft
- >5.0 to 10.0 ft
- >10.0 to 15.0 ft
- >15.0 to 20.0 ft
- >20.0 to 25.0 ft
- >25.0 to 30.0 ft
- >30.0 to 35.0 ft
- >35.0 to 40.0 ft
- >40.0 to 45.0 ft
- >45.0 to 50.0 ft
- >50.0 ft

Legend

- Fines
- Fines
- Clays
- Silt Mixtures
- Sand Mixtures
- Sands
- Gravelly Sand to Sand
- Stiff Sand to Clayey Sand
- Very Stiff Fine Grained

Legend

- Fines
- Fines
- Clay
- Silty Clay
- Clayey Silt
- Silt
- Sandy Silt
- Silty Sand/Sand
- Sand
- Gravelly Sand
- Stiff Fine Grained
- Cemented Sand

Legend

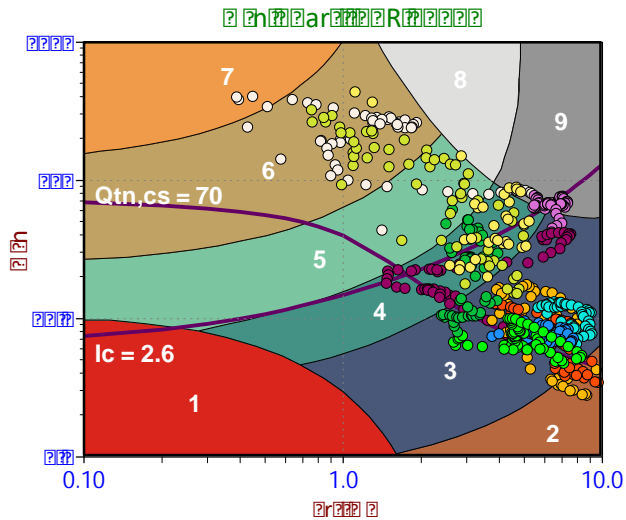
- CCS (Cont. sensitive clay like)
- CC (Cont. clay like)
- TC (Cont. transitional)
- SC (Cont. sand like)
- CD (Dil. clay like)
- TD (Dil. transitional)
- SD (Dil. sand like)



Wood plc

Job No: 20-52-21054
Date: 2020-07-14 12:46
Site: Cholla Power Plant

Sounding: CPT-17
Cone: 552:T1500F15U500

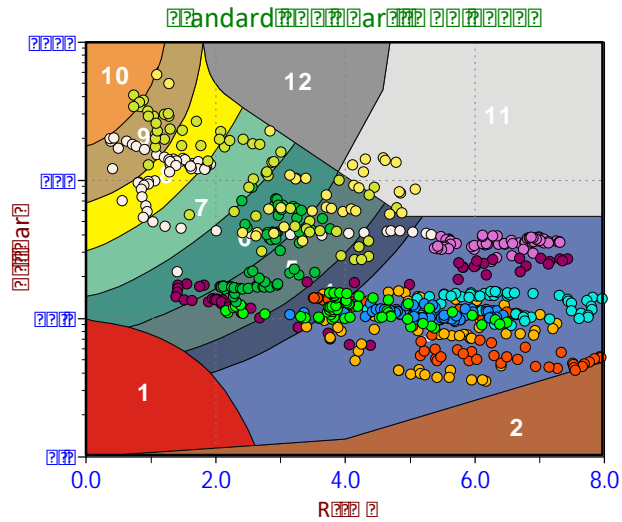


Depth Ranges

- >0.0 to 5.0 ft
- >5.0 to 10.0 ft
- >10.0 to 15.0 ft
- >15.0 to 20.0 ft
- >20.0 to 25.0 ft
- >25.0 to 30.0 ft
- >30.0 to 35.0 ft
- >35.0 to 40.0 ft
- >40.0 to 45.0 ft
- >45.0 to 50.0 ft
- >50.0 ft

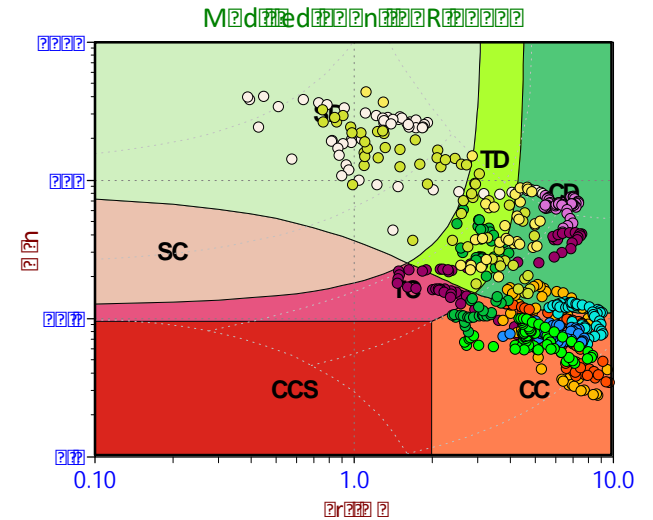
Legend

- Fines
- Fines
- Clays
- Silt Mixtures
- Sand Mixtures
- Sands
- Gravelly Sand to Sand
- Stiff Sand to Clayey Sand
- Very Stiff Fine Grained



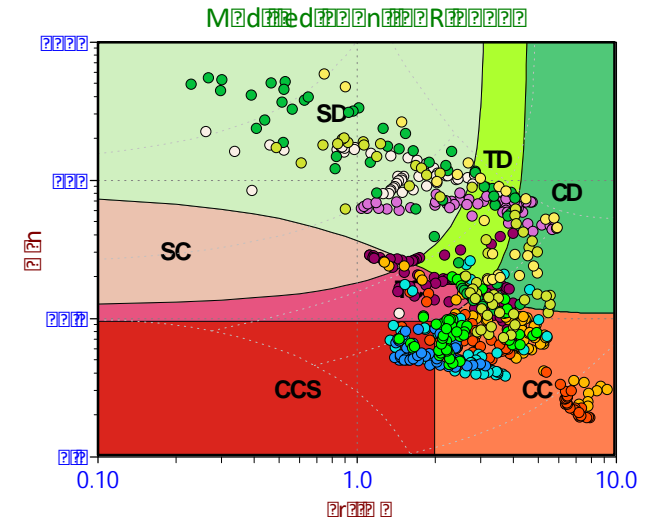
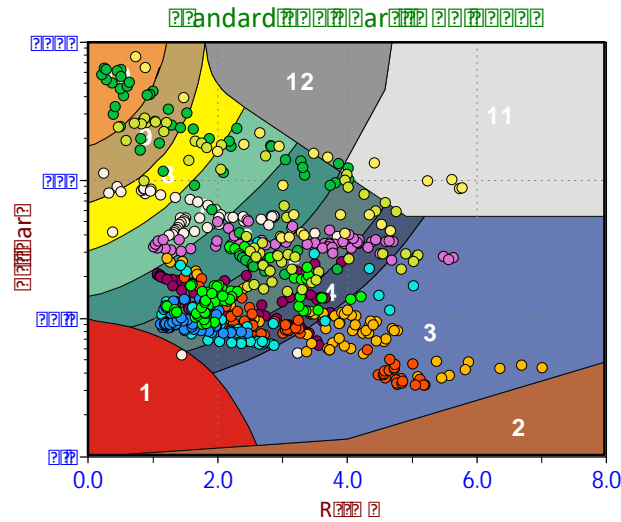
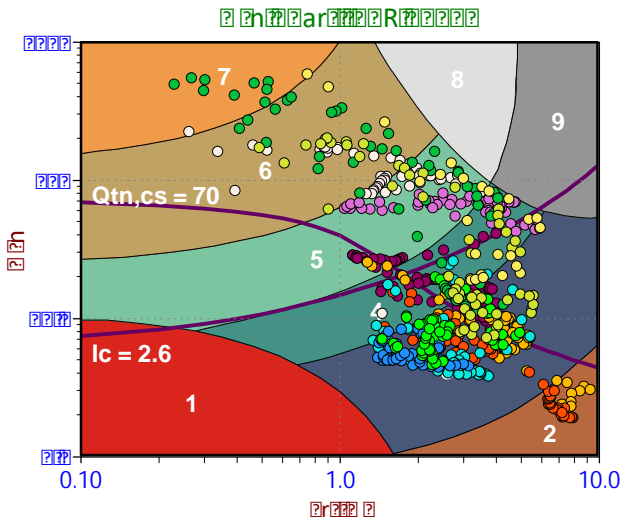
Legend

- Fines
- Fines
- Clay
- Silty Clay
- Clayey Silt
- Silt
- Sandy Silt
- Silty Sand/Sand
- Sand
- Gravelly Sand
- Stiff Fine Grained
- Cemented Sand



Legend

- CCS (Cont. sensitive clay like)
- CC (Cont. clay like)
- TC (Cont. transitional)
- SC (Cont. sand like)
- CD (Dil. clay like)
- TD (Dil. transitional)
- SD (Dil. sand like)



Depth Ranges

- >0.0 to 5.0 ft
- >5.0 to 10.0 ft
- >10.0 to 15.0 ft
- >15.0 to 20.0 ft
- >20.0 to 25.0 ft
- >25.0 to 30.0 ft
- >30.0 to 35.0 ft
- >35.0 to 40.0 ft
- >40.0 to 45.0 ft
- >45.0 to 50.0 ft
- >50.0 ft

Legend

- Fines
- Fines
- Clays
- Silt Mixtures
- Sand Mixtures
- Sands
- Gravelly Sand to Sand
- Stiff Sand to Clayey Sand
- Very Stiff Fine Grained

Legend

- Fines
- Fines
- Clay
- Silty Clay
- Clayey Silt
- Silt
- Sandy Silt
- Silty Sand/Sand
- Sand
- Gravelly Sand
- Stiff Fine Grained
- Cemented Sand

Legend

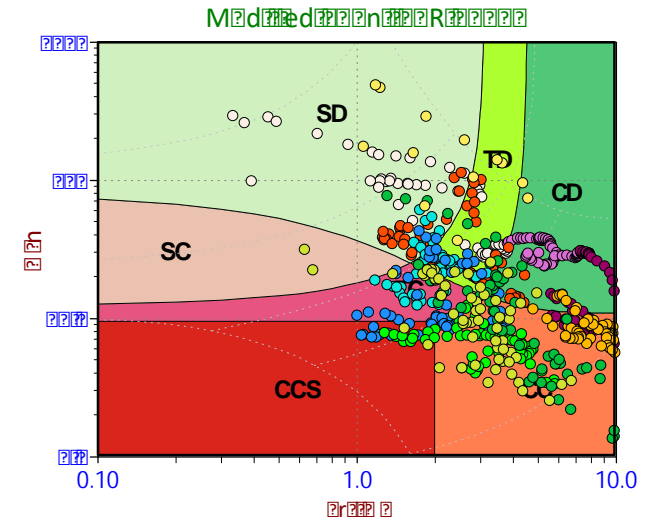
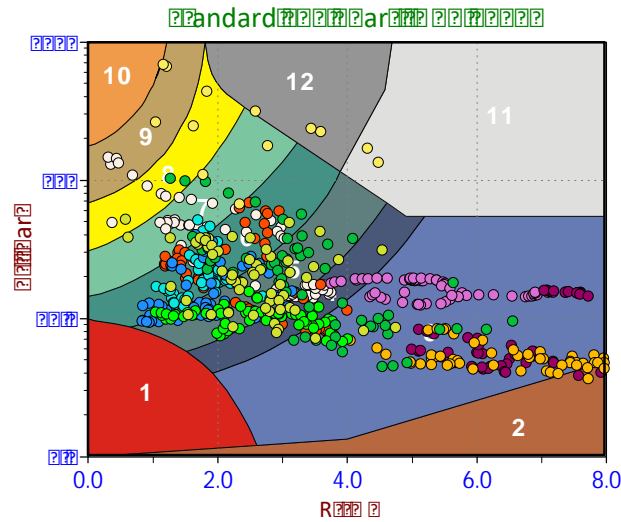
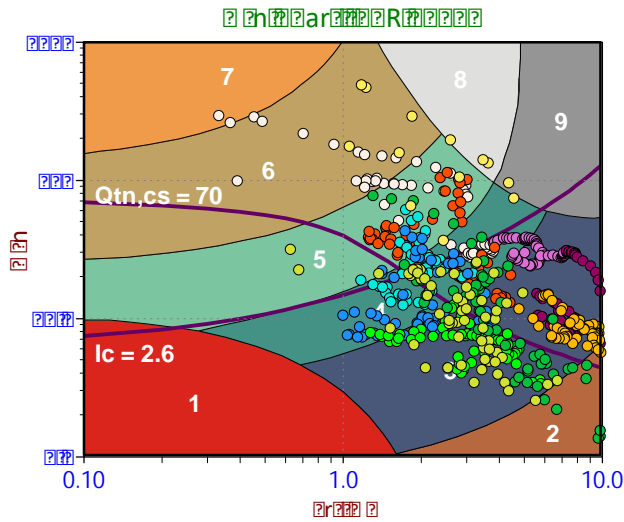
- CCS (Cont. sensitive clay like)
- CC (Cont. clay like)
- TC (Cont. transitional)
- SC (Cont. sand like)
- CD (Dil. clay like)
- TD (Dil. transitional)
- SD (Dil. sand like)



Wood plc

Job No: 20-52-21054
Date: 2020-07-14 08:23
Site: Cholla Power Plant

Sounding: CPT-19
Cone: 552:T1500F15U500



Depth Ranges

- >0.0 to 5.0 ft
- >5.0 to 10.0 ft
- >10.0 to 15.0 ft
- >15.0 to 20.0 ft
- >20.0 to 25.0 ft
- >25.0 to 30.0 ft
- >30.0 to 35.0 ft
- >35.0 to 40.0 ft
- >40.0 to 45.0 ft
- >45.0 to 50.0 ft
- >50.0 ft

Legend

- Fines
- Fines
- Clays
- Silt Mixtures
- Sand Mixtures
- Sands
- Gravelly Sand to Sand
- Stiff Sand to Clayey Sand
- Very Stiff Fine Grained

Legend

- Fines
- Fines
- Clay
- Silty Clay
- Clayey Silt
- Silt
- Sandy Silt
- Silty Sand/Sand
- Sand
- Gravelly Sand
- Stiff Fine Grained
- Cemented Sand

Legend

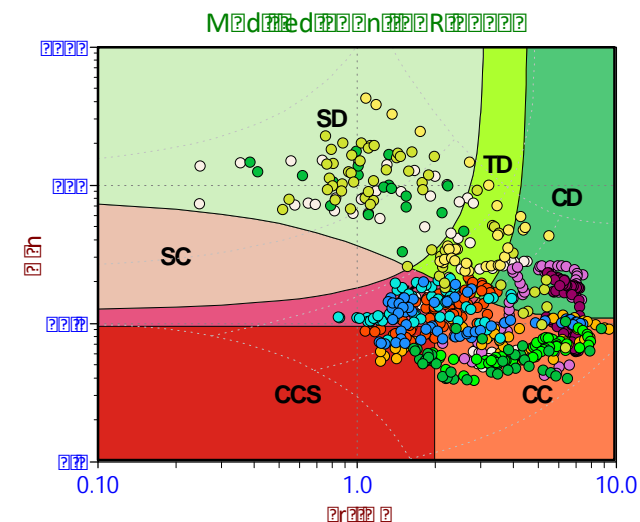
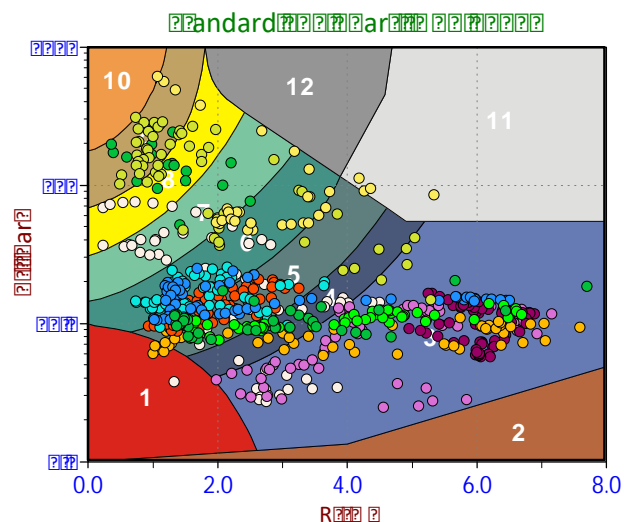
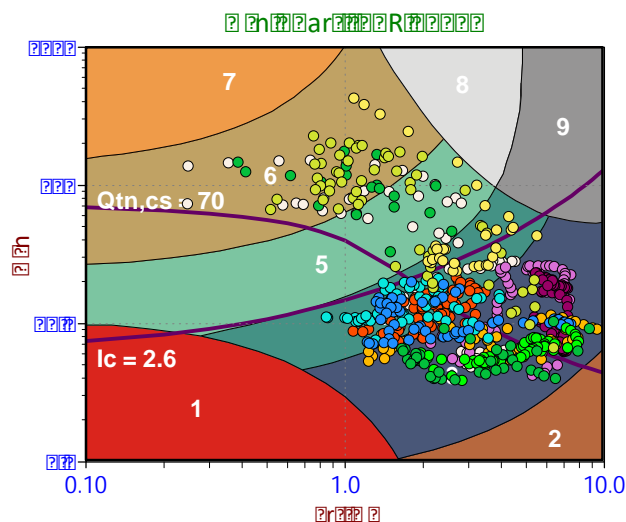
- CCS (Cont. sensitive clay like)
- CC (Cont. clay like)
- TC (Cont. transitional)
- SC (Cont. sand like)
- CD (Dil. clay like)
- TD (Dil. transitional)
- SD (Dil. sand like)



Wood plc

Job No: 20-52-21054
Date: 2020-07-13 11:34
Site: Cholla Power Plant

Sounding: CPT-20
Cone: 552:T1500F15U500



Depth Ranges

- >0.0 to 5.0 ft
- >5.0 to 10.0 ft
- >10.0 to 15.0 ft
- >15.0 to 20.0 ft
- >20.0 to 25.0 ft
- >25.0 to 30.0 ft
- >30.0 to 35.0 ft
- >35.0 to 40.0 ft
- >40.0 to 45.0 ft
- >45.0 to 50.0 ft
- >50.0 ft

Legend

- Fines
- Fines
- Clays
- Silt Mixtures
- Sand Mixtures
- Sands
- Gravelly Sand to Sand
- Stiff Sand to Clayey Sand
- Very Stiff Fine Grained

Legend

- Fines
- Fines
- Clay
- Silty Clay
- Clayey Silt
- Silt
- Sandy Silt
- Silty Sand/Sand
- Sand
- Gravelly Sand
- Stiff Fine Grained
- Cemented Sand

Legend

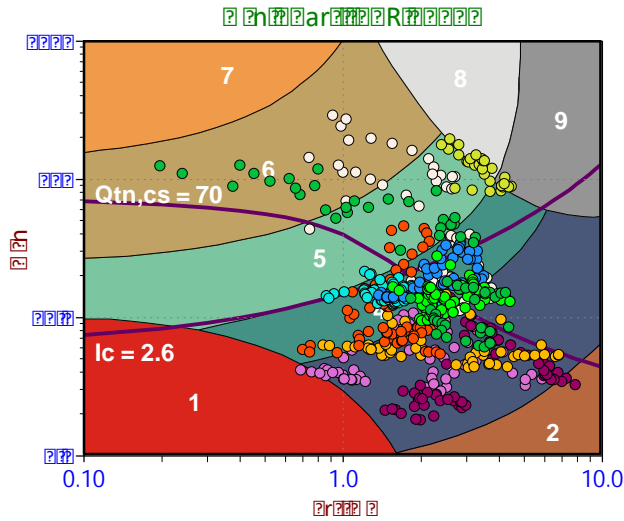
- CCS (Cont. sensitive clay like)
- CC (Cont. clay like)
- TC (Cont. transitional)
- SC (Cont. sand like)
- CD (Dil. clay like)
- TD (Dil. transitional)
- SD (Dil. sand like)



Wood plc

Job No: 20-52-21054
Date: 2020-07-13 14:09
Site: Cholla Power Plant

Sounding: CPT-21
Cone: 552:T1500F15U500

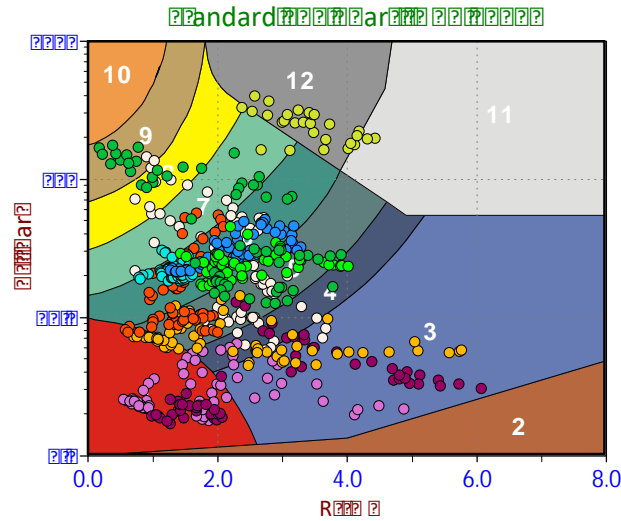


Depth Ranges

- >0.0 to 5.0 ft
- >5.0 to 10.0 ft
- >10.0 to 15.0 ft
- >15.0 to 20.0 ft
- >20.0 to 25.0 ft
- >25.0 to 30.0 ft
- >30.0 to 35.0 ft
- >35.0 to 40.0 ft
- >40.0 to 45.0 ft
- >45.0 to 50.0 ft
- >50.0 ft

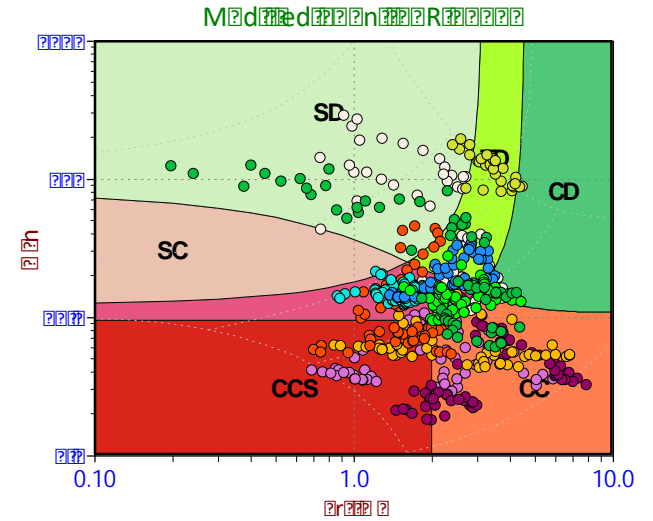
Legend

- Fines
- Fines
- Clays
- Silt Mixtures
- Sand Mixtures
- Sands
- Gravelly Sand to Sand
- Stiff Sand to Clayey Sand
- Very Stiff Fine Grained



Legend

- Fines
- Fines
- Clay
- Silty Clay
- Clayey Silt
- Silt
- Sandy Silt
- Silty Sand/Sand
- Sand
- Gravelly Sand
- Stiff Fine Grained
- Cemented Sand



Legend

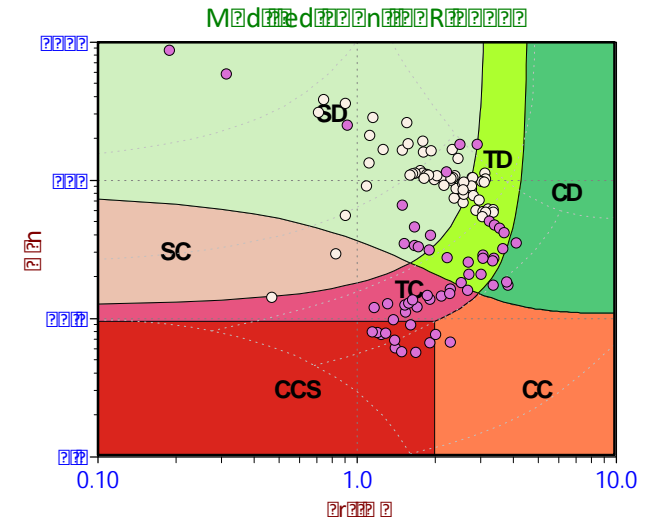
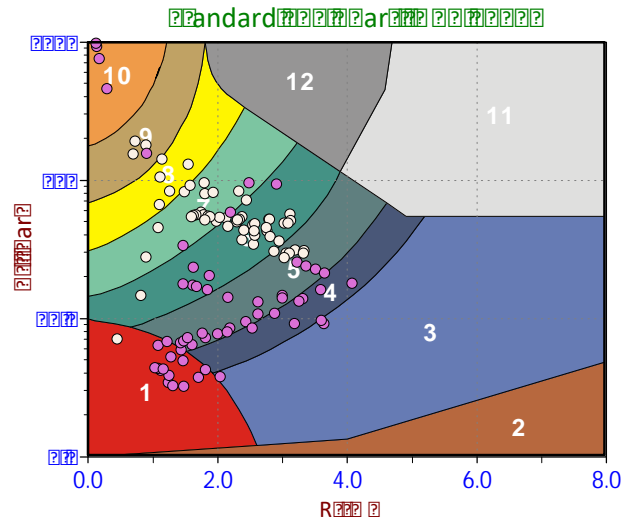
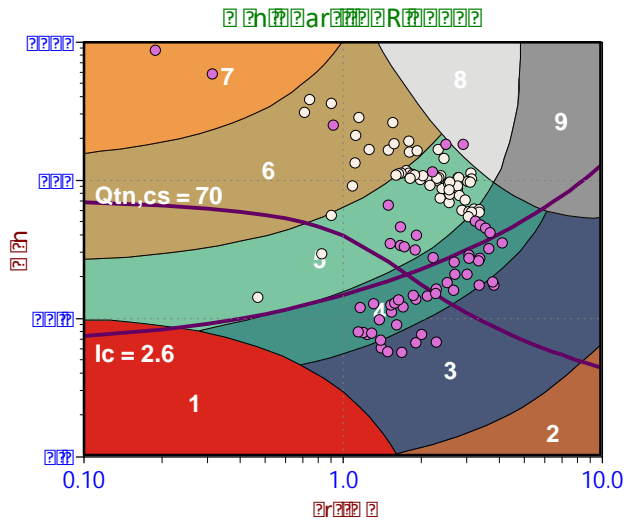
- CCS (Cont. sensitive clay like)
- CC (Cont. clay like)
- TC (Cont. transitional)
- SC (Cont. sand like)
- CD (Dil. clay like)
- TD (Dil. transitional)
- SD (Dil. sand like)



Wood plc

Job No: 20-52-21054
Date: 2020-07-13 11:25
Site: Cholla Power Plant

Sounding: CPT-22
Cone: 552:T1500F15U500



Depth Ranges

- >0.0 to 5.0 ft
- >5.0 to 10.0 ft
- >10.0 to 15.0 ft
- >15.0 to 20.0 ft
- >20.0 to 25.0 ft
- >25.0 to 30.0 ft
- >30.0 to 35.0 ft
- >35.0 to 40.0 ft
- >40.0 to 45.0 ft
- >45.0 to 50.0 ft
- >50.0 ft

Legend

- Fines
- Fines
- Clays
- Silt Mixtures
- Sand Mixtures
- Sands
- Gravelly Sand to Sand
- Stiff Sand to Clayey Sand
- Very Stiff Fine Grained

Legend

- Fines
- Fines
- Clay
- Silty Clay
- Clayey Silt
- Silt
- Sandy Silt
- Silty Sand/Sand
- Sand
- Gravelly Sand
- Stiff Fine Grained
- Cemented Sand

Legend

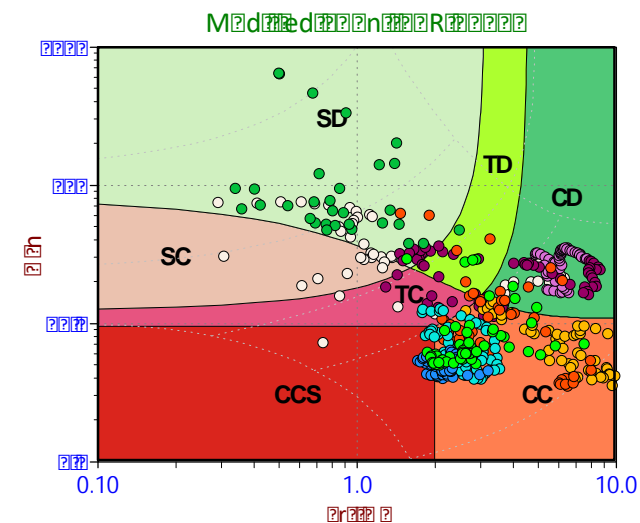
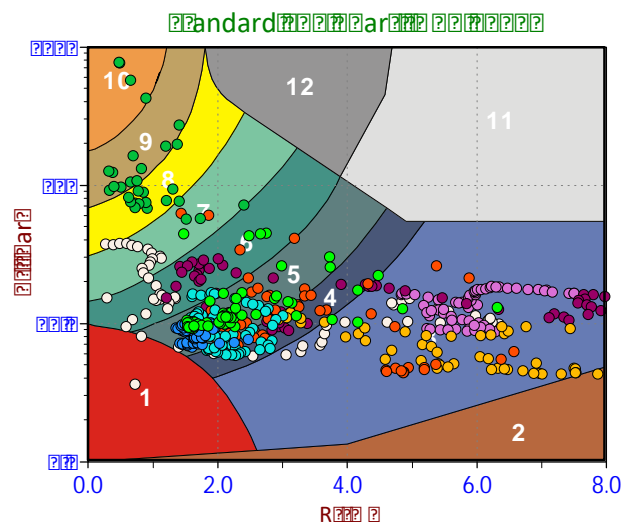
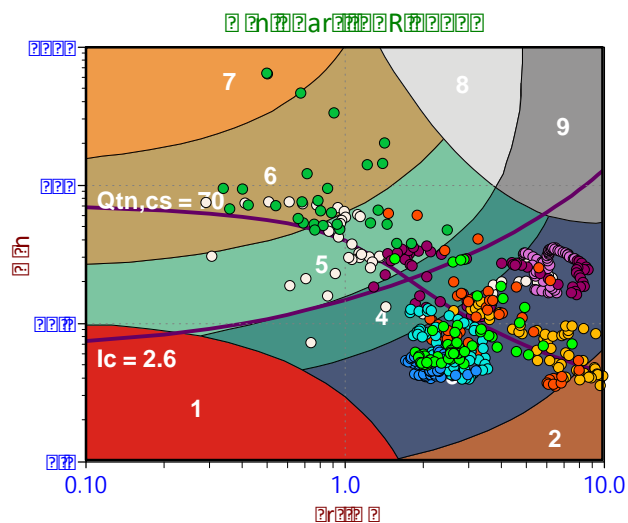
- CCS (Cont. sensitive clay like)
- CC (Cont. clay like)
- TC (Cont. transitional)
- SC (Cont. sand like)
- CD (Dil. clay like)
- TD (Dil. transitional)
- SD (Dil. sand like)



Wood plc

Job No: 20-52-21054
Date: 2020-07-16 14:09
Site: Cholla Power Plant

Sounding: CPT-23
Cone: 552:T1500F15U500



Depth Ranges

- >0.0 to 5.0 ft
- >5.0 to 10.0 ft
- >10.0 to 15.0 ft
- >15.0 to 20.0 ft
- >20.0 to 25.0 ft
- >25.0 to 30.0 ft
- >30.0 to 35.0 ft
- >35.0 to 40.0 ft
- >40.0 to 45.0 ft
- >45.0 to 50.0 ft
- >50.0 ft

Legend

- Fines
- Fines
- Clays
- Silt Mixtures
- Sand Mixtures
- Sands
- Gravelly Sand to Sand
- Stiff Sand to Clayey Sand
- Very Stiff Fine Grained

Legend

- Fines
- Fines
- Clay
- Silty Clay
- Clayey Silt
- Silt
- Sandy Silt
- Silty Sand/Sand
- Sand
- Gravelly Sand
- Stiff Fine Grained
- Cemented Sand

Legend

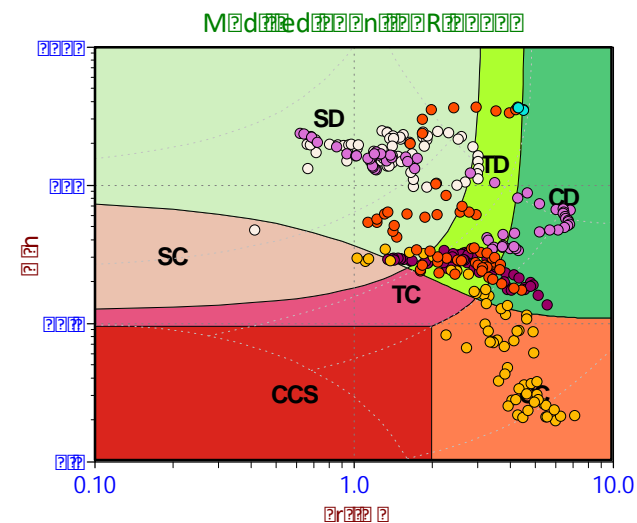
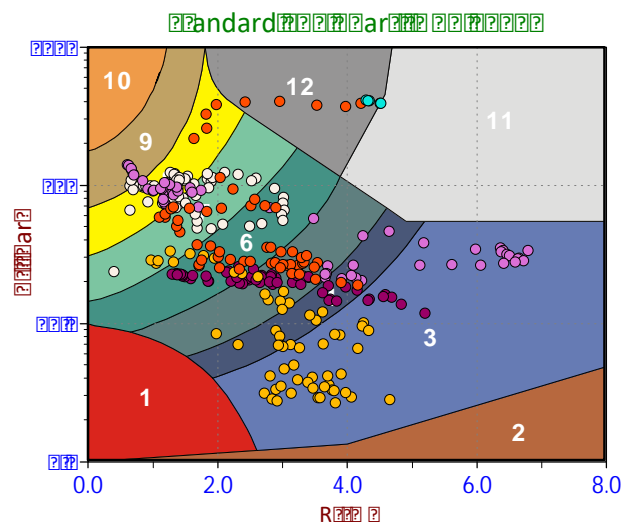
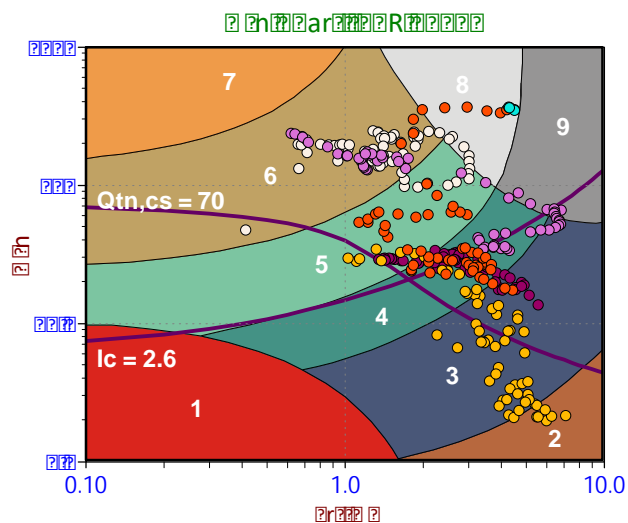
- CCS (Cont. sensitive clay like)
- CC (Cont. clay like)
- TC (Cont. transitional)
- SC (Cont. sand like)
- CD (Dil. clay like)
- TD (Dil. transitional)
- SD (Dil. sand like)



Wood plc

Job No: 20-52-21054
Date: 2020-07-19 15:11
Site: Cholla Power Plant

Sounding: CPT-24
Cone: 552:T1500F15U500



Depth Ranges

- >0.0 to 5.0 ft
- >5.0 to 10.0 ft
- >10.0 to 15.0 ft
- >15.0 to 20.0 ft
- >20.0 to 25.0 ft
- >25.0 to 30.0 ft
- >30.0 to 35.0 ft
- >35.0 to 40.0 ft
- >40.0 to 45.0 ft
- >45.0 to 50.0 ft
- >50.0 ft

Legend

- Fines
- Fines
- Clays
- Silt Mixtures
- Sand Mixtures
- Sands
- Gravelly Sand to Sand
- Stiff Sand to Clayey Sand
- Very Stiff Fine Grained

Legend

- Fines
- Fines
- Clay
- Silty Clay
- Clayey Silt
- Silt
- Sandy Silt
- Silty Sand/Sand
- Sand
- Gravelly Sand
- Stiff Fine Grained
- Cemented Sand

Legend

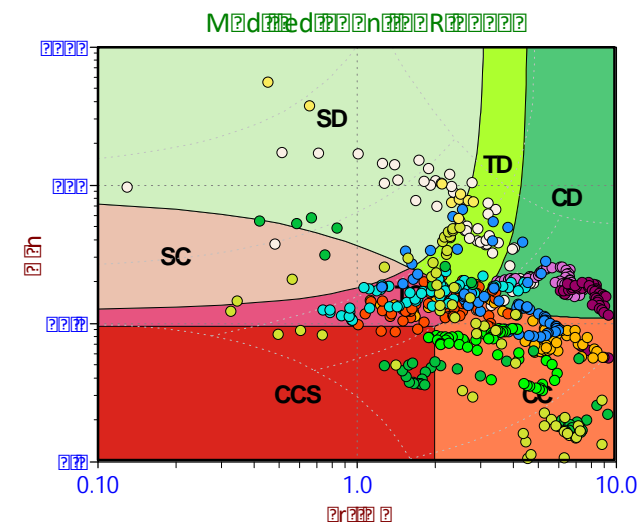
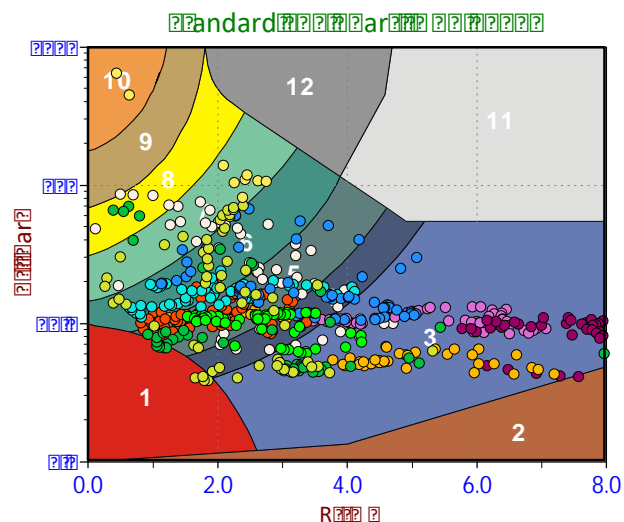
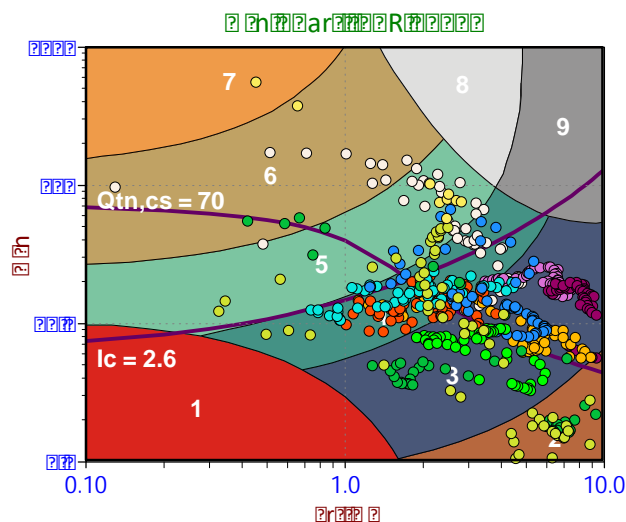
- CCS (Cont. sensitive clay like)
- CC (Cont. clay like)
- TC (Cont. transitional)
- SC (Cont. sand like)
- CD (Dil. clay like)
- TD (Dil. transitional)
- SD (Dil. sand like)



Wood plc

Job No: 20-52-21054
Date: 2020-07-20 09:53
Site: Cholla Power Plant

Sounding: CPT-25
Cone: 657:T1500F15U500



Depth Ranges

- >0.0 to 5.0 ft
- >5.0 to 10.0 ft
- >10.0 to 15.0 ft
- >15.0 to 20.0 ft
- >20.0 to 25.0 ft
- >25.0 to 30.0 ft
- >30.0 to 35.0 ft
- >35.0 to 40.0 ft
- >40.0 to 45.0 ft
- >45.0 to 50.0 ft
- >50.0 ft

Legend

- Fines
- Fines
- Clays
- Silt Mixtures
- Sand Mixtures
- Sands
- Gravelly Sand to Sand
- Stiff Sand to Clayey Sand
- Very Stiff Fine Grained

Legend

- Fines
- Fines
- Clay
- Silty Clay
- Clayey Silt
- Silt
- Sandy Silt
- Silty Sand/Sand
- Sand
- Gravelly Sand
- Stiff Fine Grained
- Cemented Sand

Legend

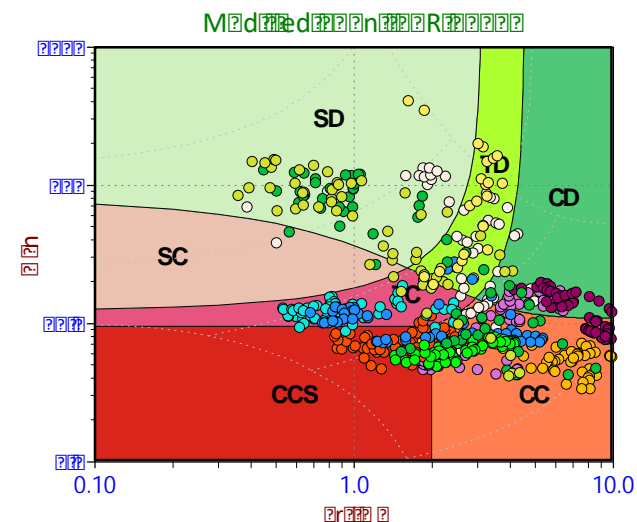
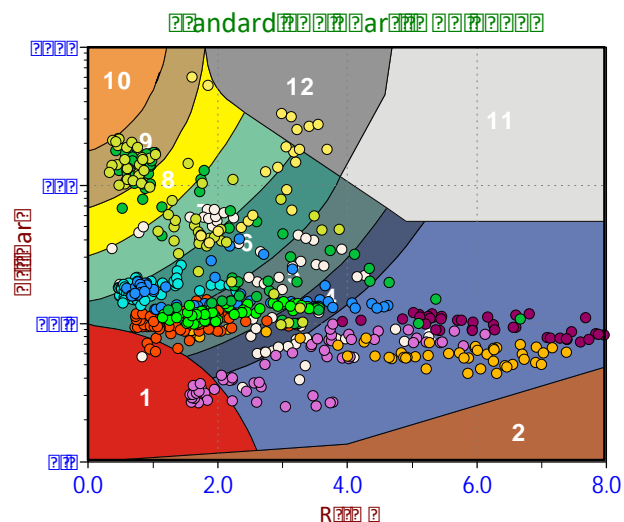
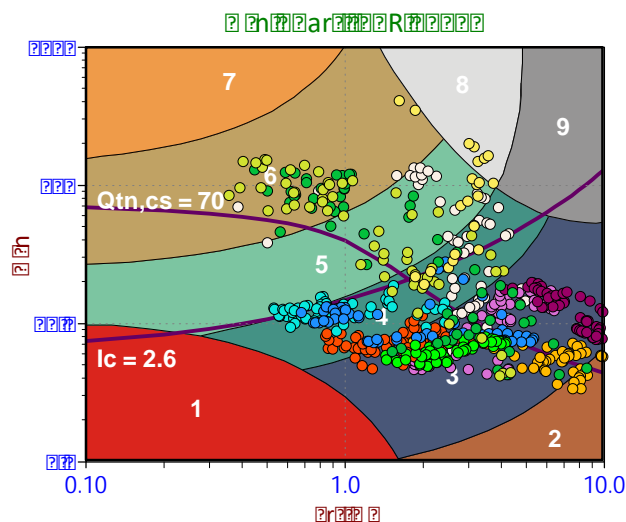
- CCS (Cont. sensitive clay like)
- CC (Cont. clay like)
- TC (Cont. transitional)
- SC (Cont. sand like)
- CD (Dil. clay like)
- TD (Dil. transitional)
- SD (Dil. sand like)



Wood plc

Job No: 20-52-21054
Date: 2020-07-20 11:28
Site: Cholla Power Plant

Sounding: CPT-26
Cone: 657:T1500F15U500

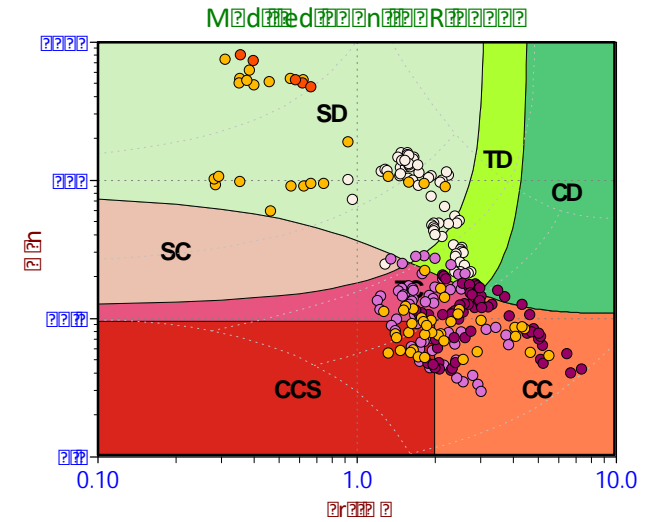
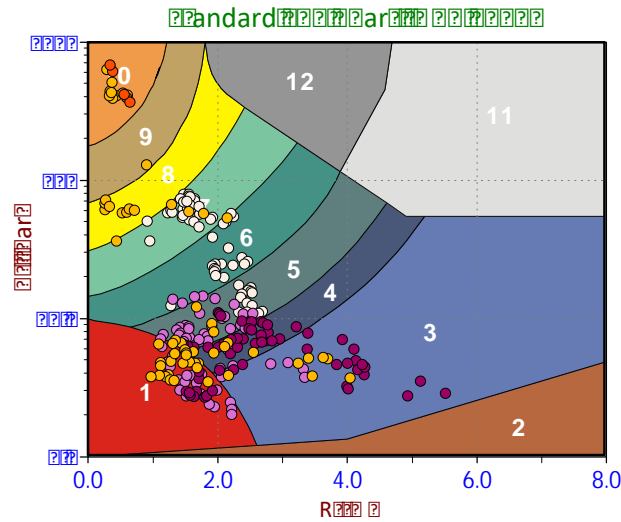
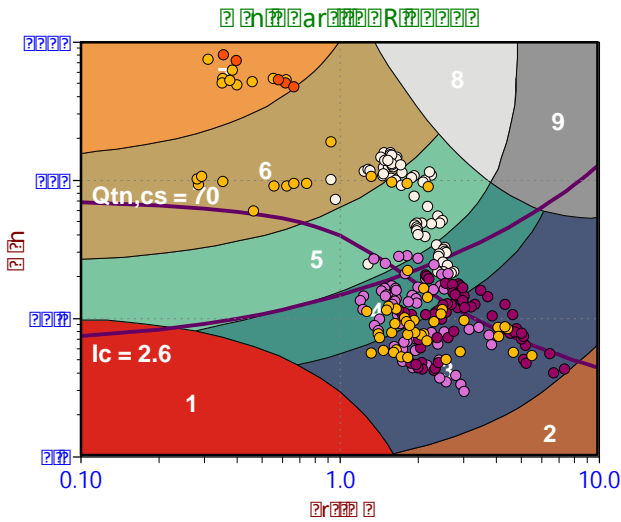




Wood plc

Job No: 20-52-21054
Date: 2020-07-20 12:56
Site: Cholla Power Plant

Sounding: CPT-27
Cone: 657:T1500F15U500



Depth Ranges

- >0.0 to 5.0 ft
- >5.0 to 10.0 ft
- >10.0 to 15.0 ft
- >15.0 to 20.0 ft
- >20.0 to 25.0 ft
- >25.0 to 30.0 ft
- >30.0 to 35.0 ft
- >35.0 to 40.0 ft
- >40.0 to 45.0 ft
- >45.0 to 50.0 ft
- >50.0 ft

Legend

- Fines
- Fines
- Clays
- Silt Mixtures
- Sand Mixtures
- Sands
- Gravelly Sand to Sand
- Stiff Sand to Clayey Sand
- Very Stiff Fine Grained

Legend

- Fines
- Fines
- Clay
- Silty Clay
- Clayey Silt
- Silt
- Sandy Silt
- Silty Sand/Sand
- Sand
- Gravelly Sand
- Stiff Fine Grained
- Cemented Sand

Legend

- CCS (Cont. sensitive clay like)
- CC (Cont. clay like)
- TC (Cont. transitional)
- SC (Cont. sand like)
- CD (Dil. clay like)
- TD (Dil. transitional)
- SD (Dil. sand like)

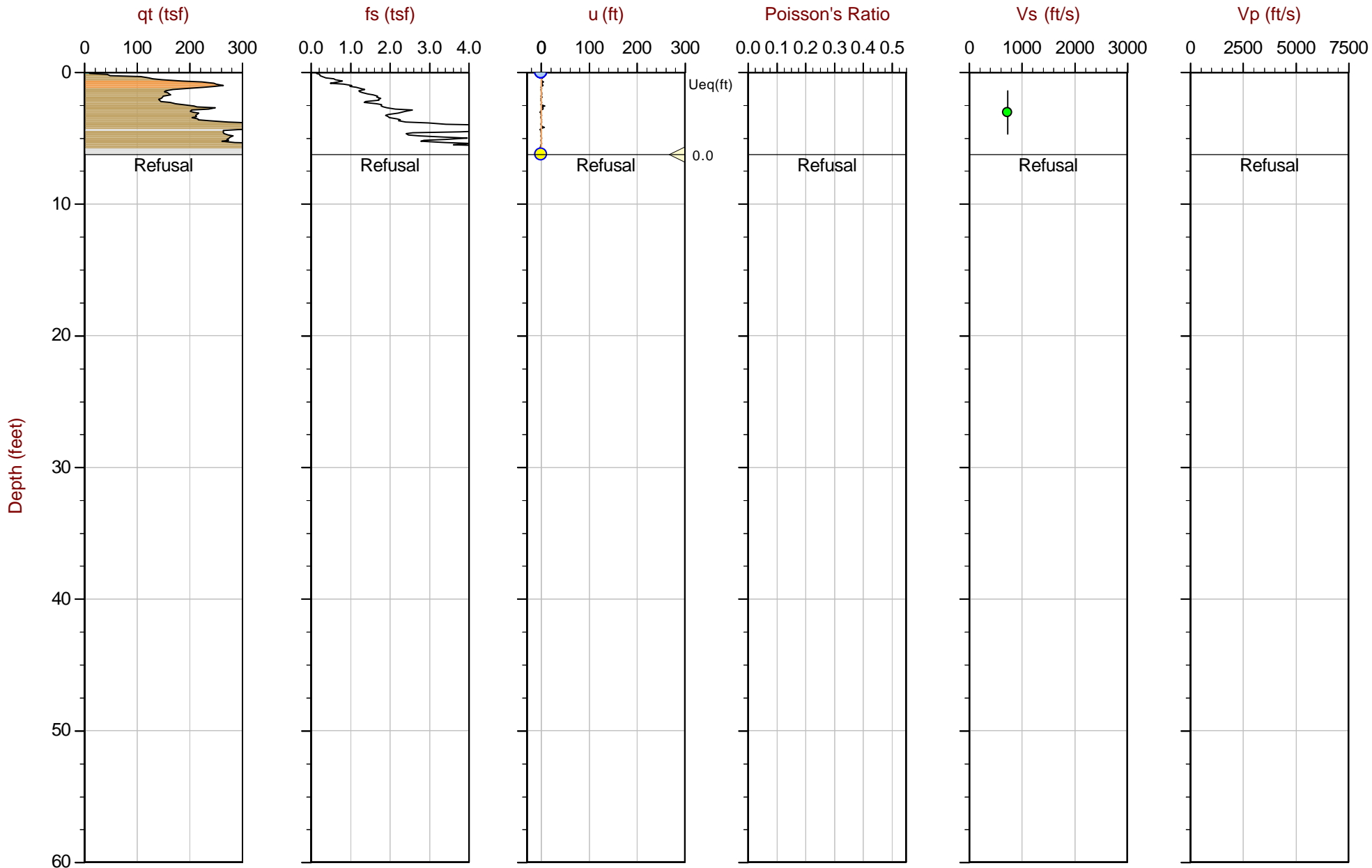
Seismic Cone Penetration Test Plots



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 08:09
Site: Cholla Power Plant

Sounding: CPT-01
Cone: 552:T1500F15U500



Max Depth: 1.900 m / 6.23 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP01.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.932162 Long: -110.271725

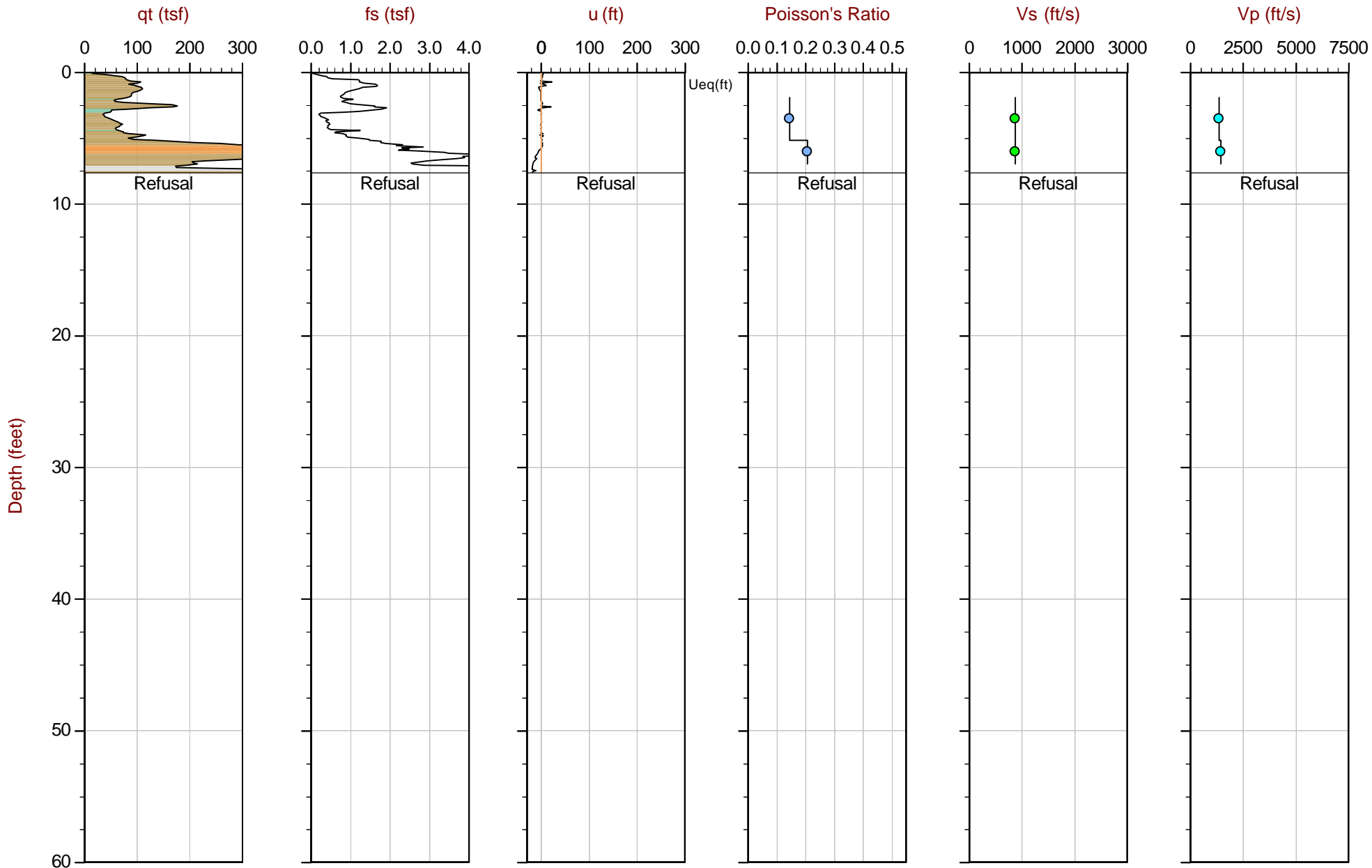
Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 08:46
Site: Cholla Power Plant

Sounding: CPT-03
Cone: 552:T1500F15U500



Max Depth: 2.325 m / 7.63 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP03.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.931641 Long: -110.271208

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

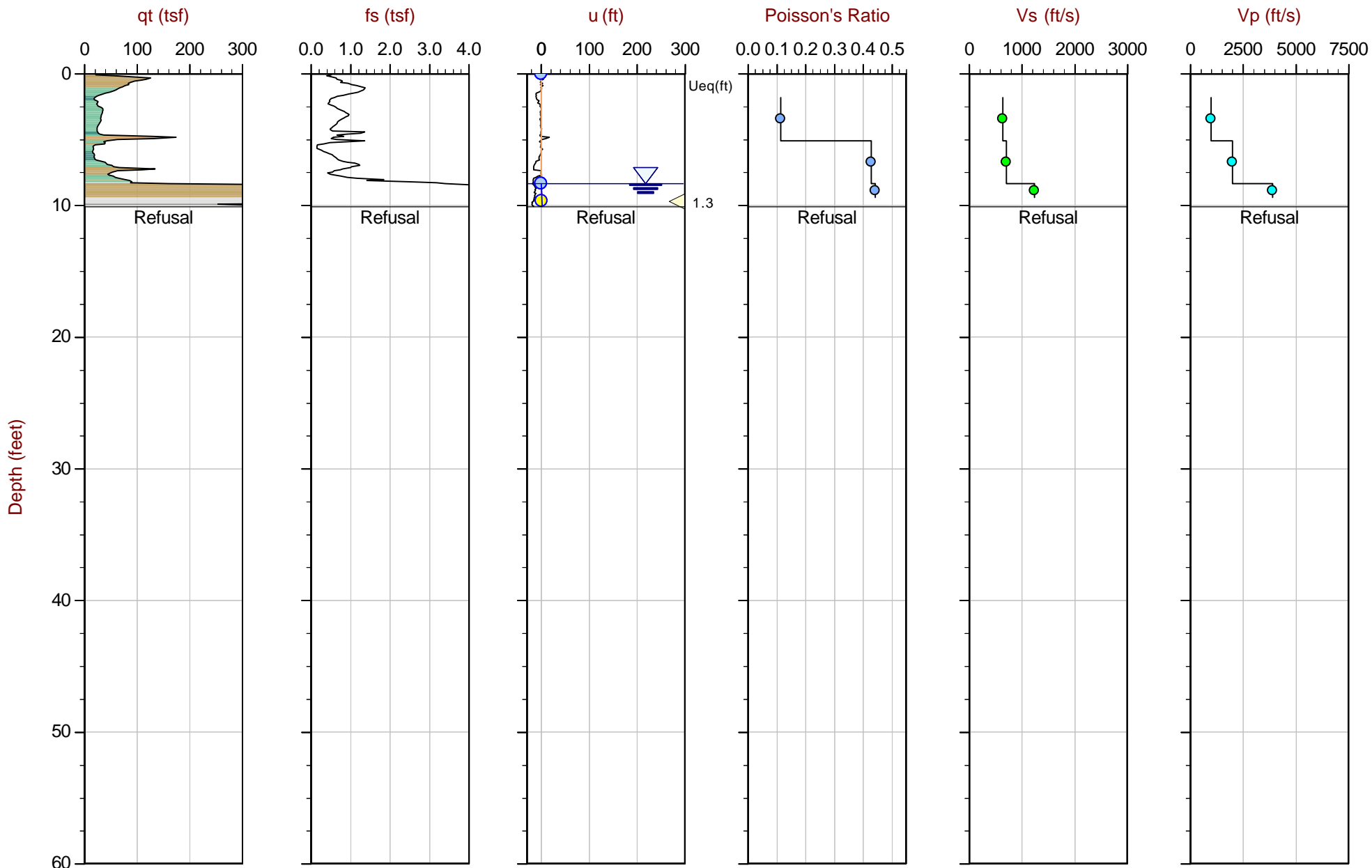
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 09:23
Site: Cholla Power Plant

Sounding: CPT-05
Cone: 552:T1500F15U500



Max Depth: 3.075 m / 10.09 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP05.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.931050 Long: -110.270578

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

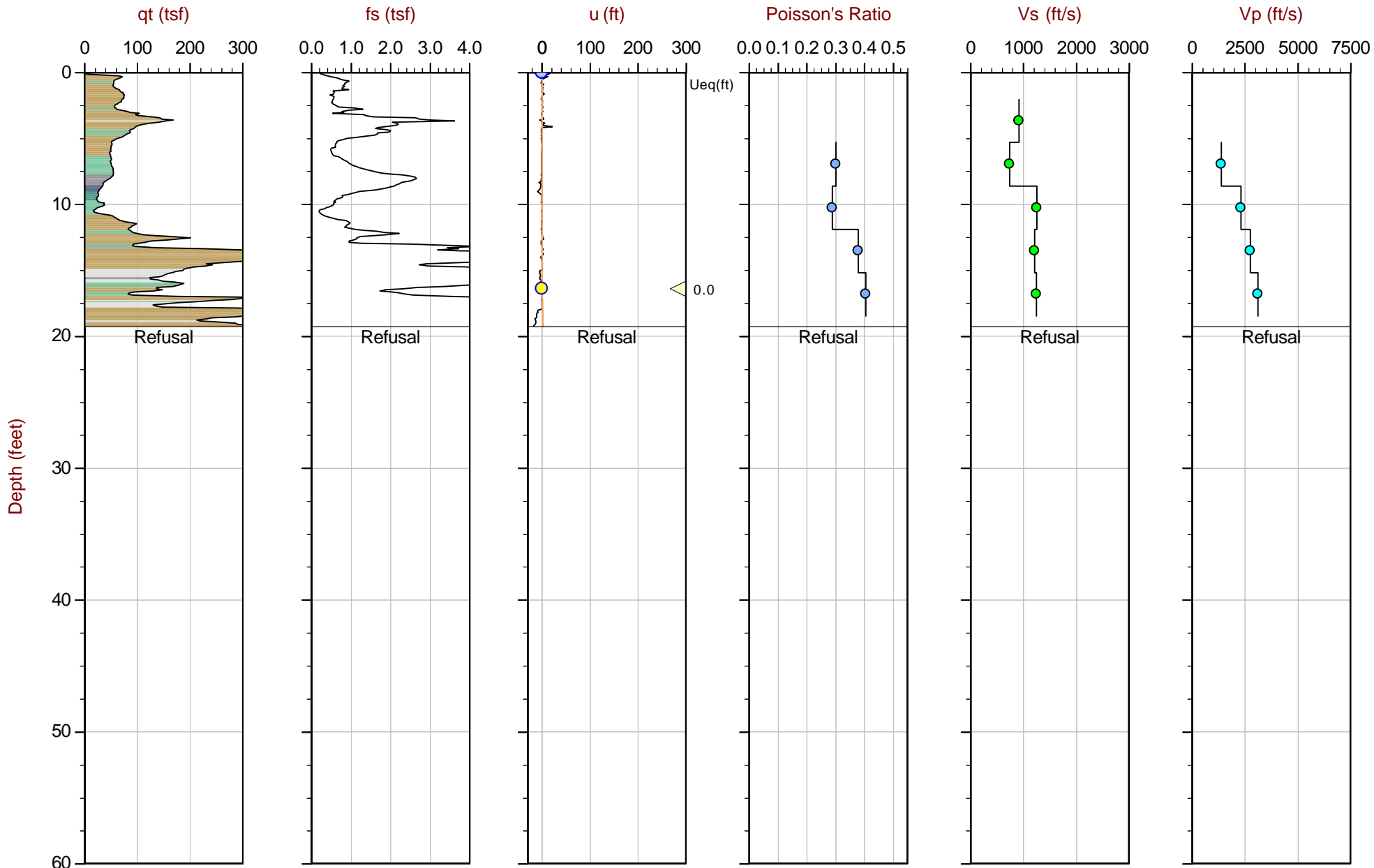
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 10:16
Site: Cholla Power Plant

Sounding: CPT-07
Cone: 552:T1500F15U500



Max Depth: 5.875 m / 19.27 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP07.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.930619 Long: -110.270080

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

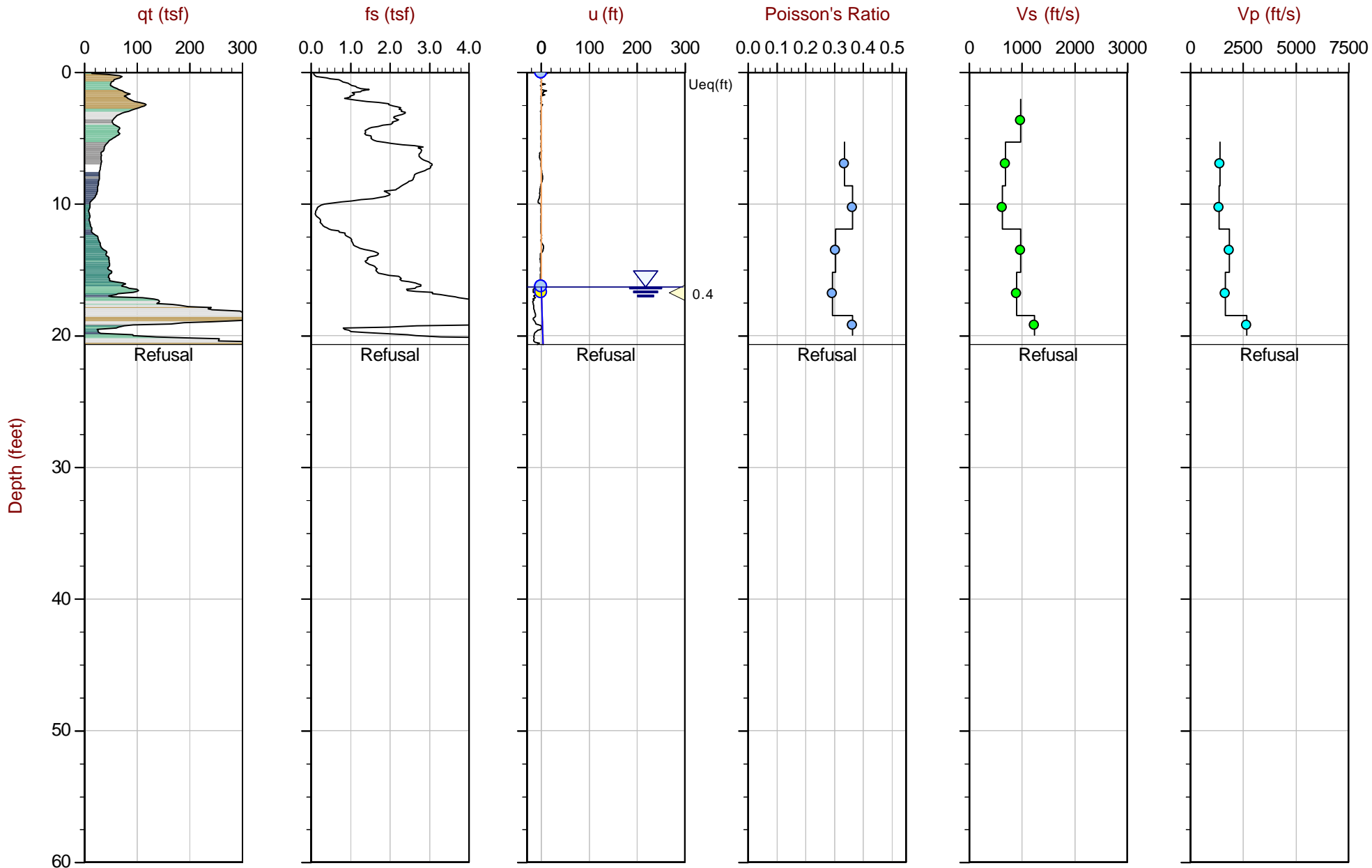
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 11:09
Site: Cholla Power Plant

Sounding: CPT-08
Cone: 552:T1500F15U500



Max Depth: 6.300 m / 20.67 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP08.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.930425 Long: -110.269834

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

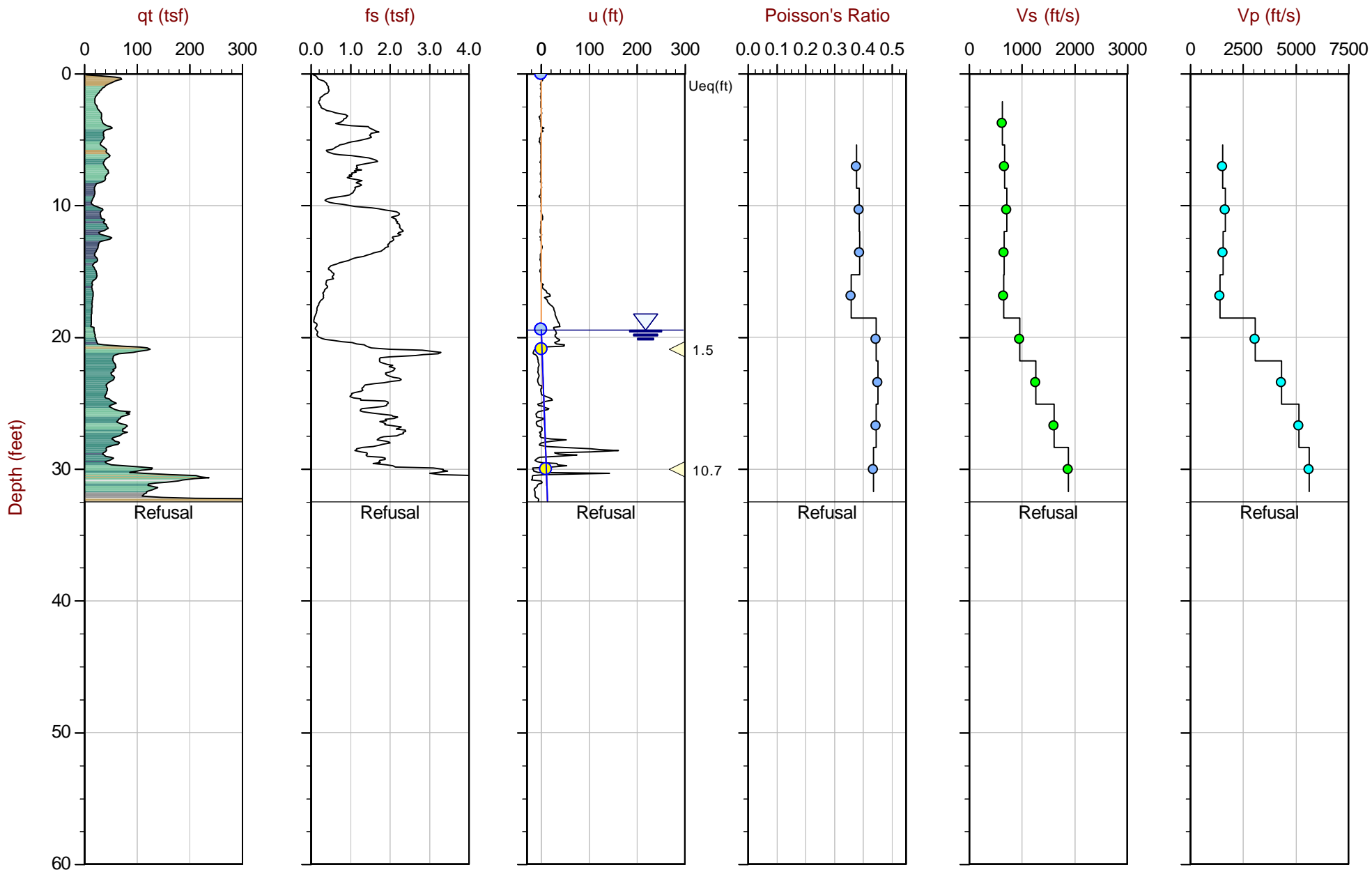
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 12:02
Site: Cholla Power Plant

Sounding: CPT-09
Cone: 552:T1500F15U500



Max Depth: 9.900 m / 32.48 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP09.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.930224 Long: -110.269621

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

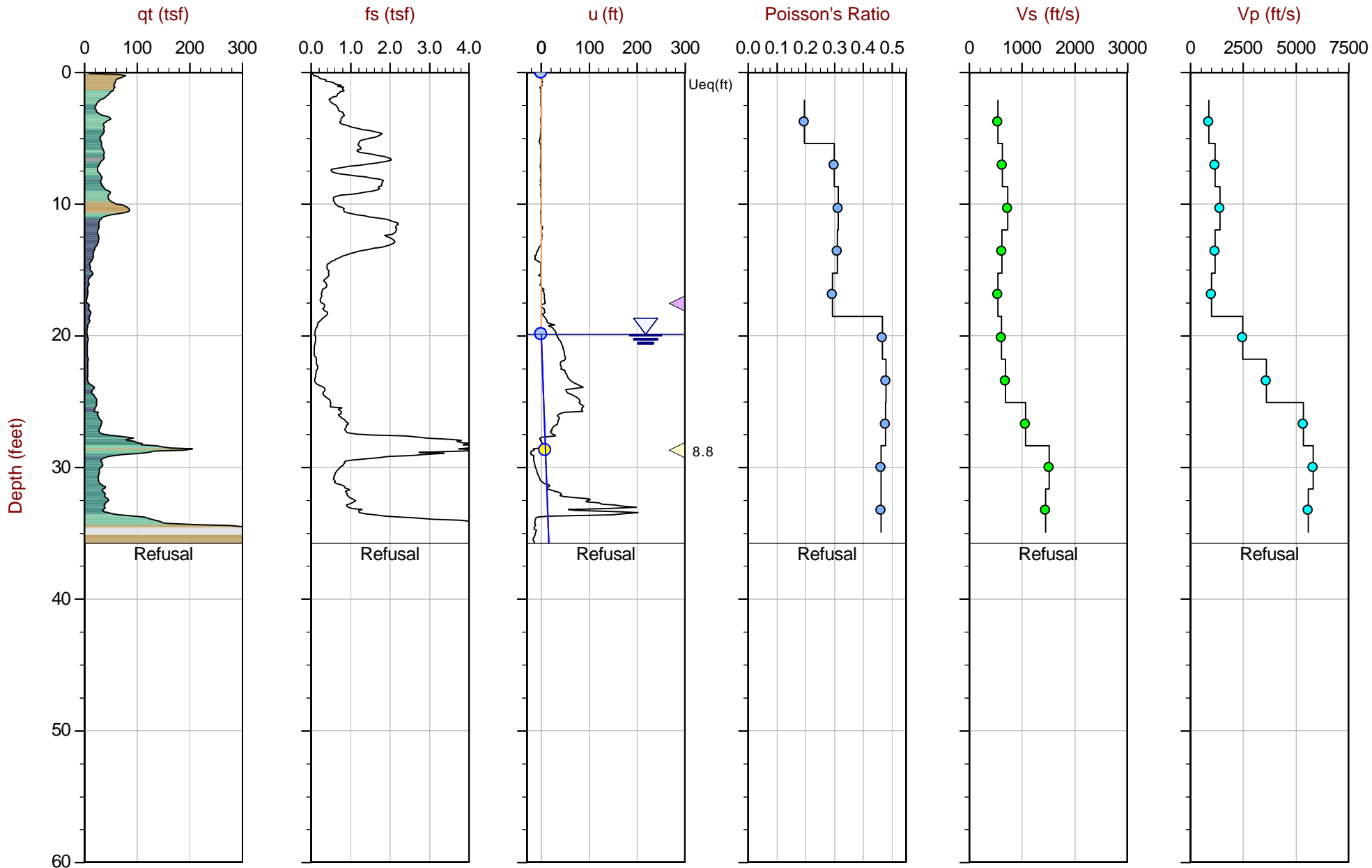
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 13:15
Site: Cholla Power Plant

Sounding: CPT-10
Cone: 552:T1500F15U500



Max Depth: 10.900 m / 35.76 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP10.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.930091 Long: -110.269468

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

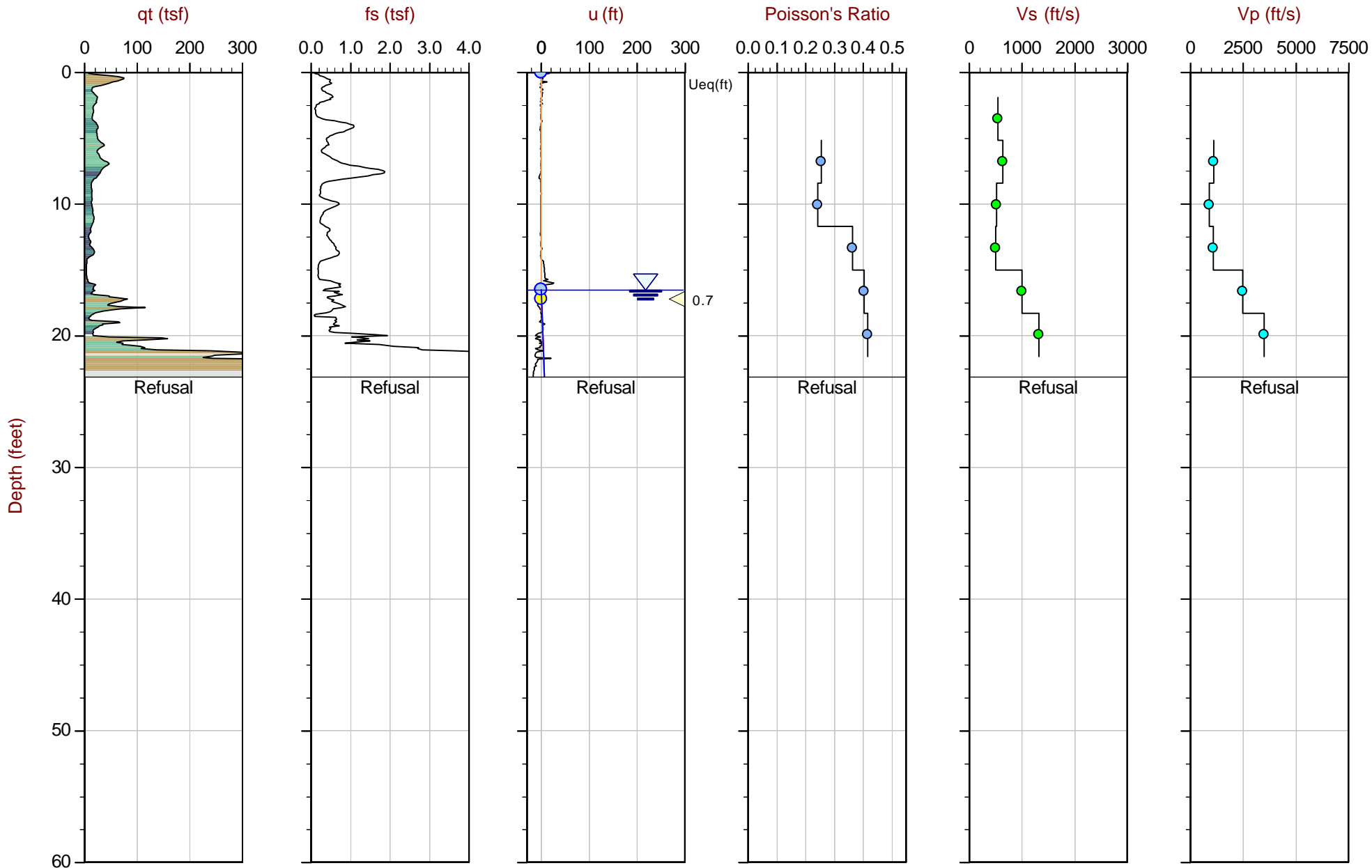
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-15 15:02
Site: Cholla Power Plant

Sounding: CPT-11
Cone: 552:T1500F15U500



Max Depth: 7.050 m / 23.13 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP11.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929756 Long: -110.269168

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

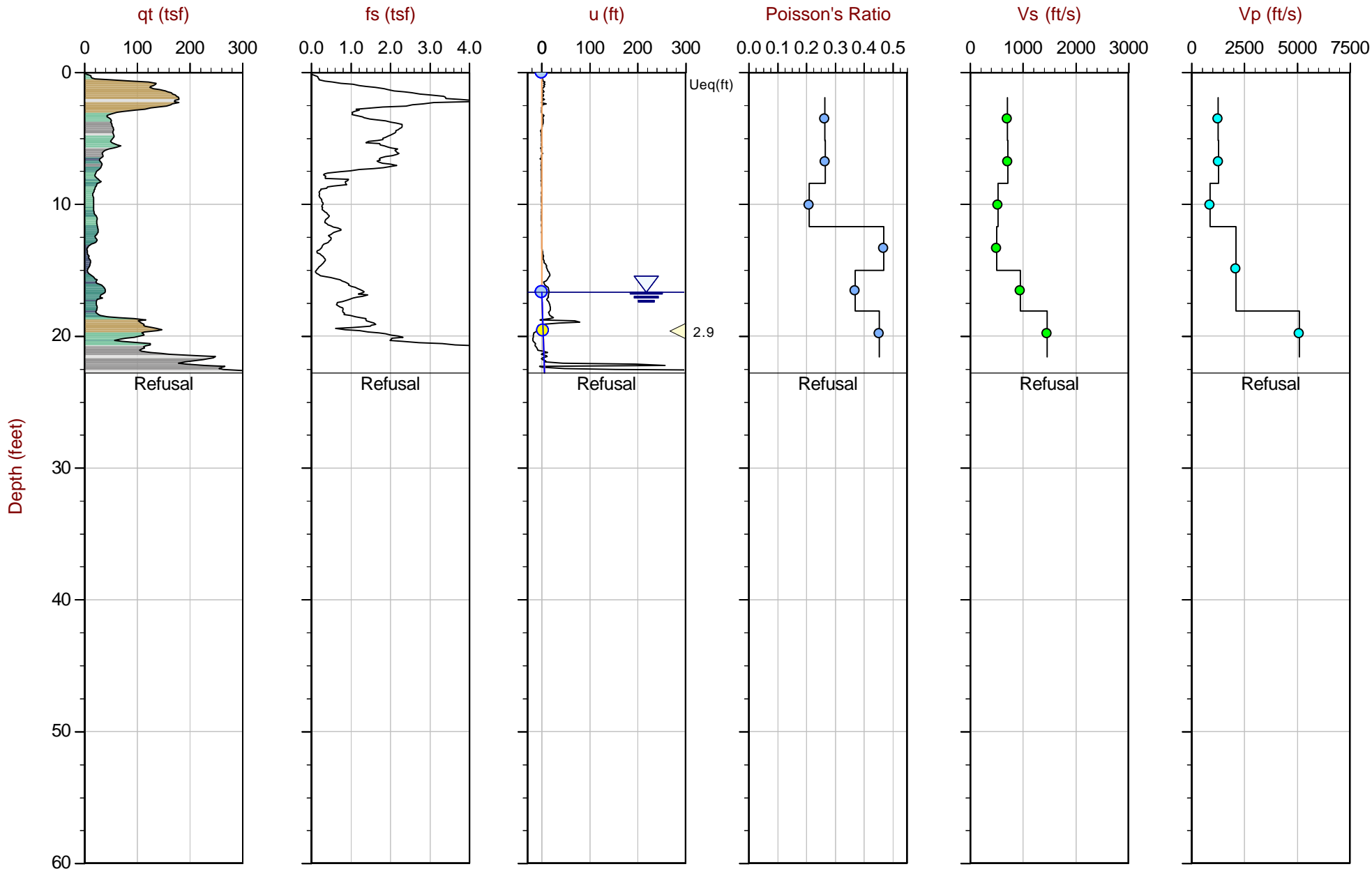
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-16 08:09
Site: Cholla Power Plant

Sounding: CPT-12
Cone: 552:T1500F15U500



Max Depth: 6.950 m / 22.80 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP12.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929575 Long: -110.268996

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

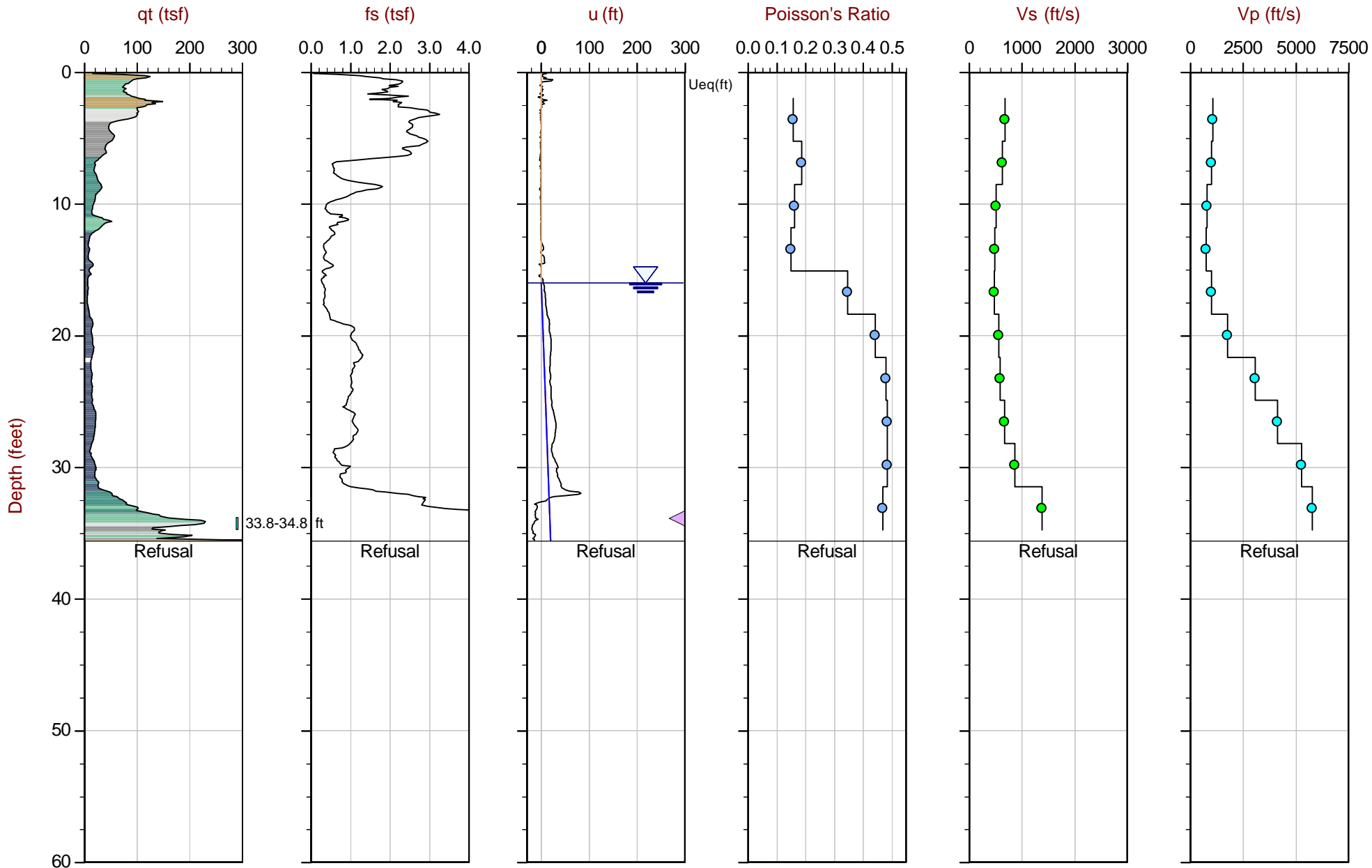
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-16 09:23
Site: Cholla Power Plant

Sounding: CPT-13
Cone: 552:T1500F15U500



Max Depth: 10.850 m / 35.60 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP13.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929371 Long: -110.268696

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

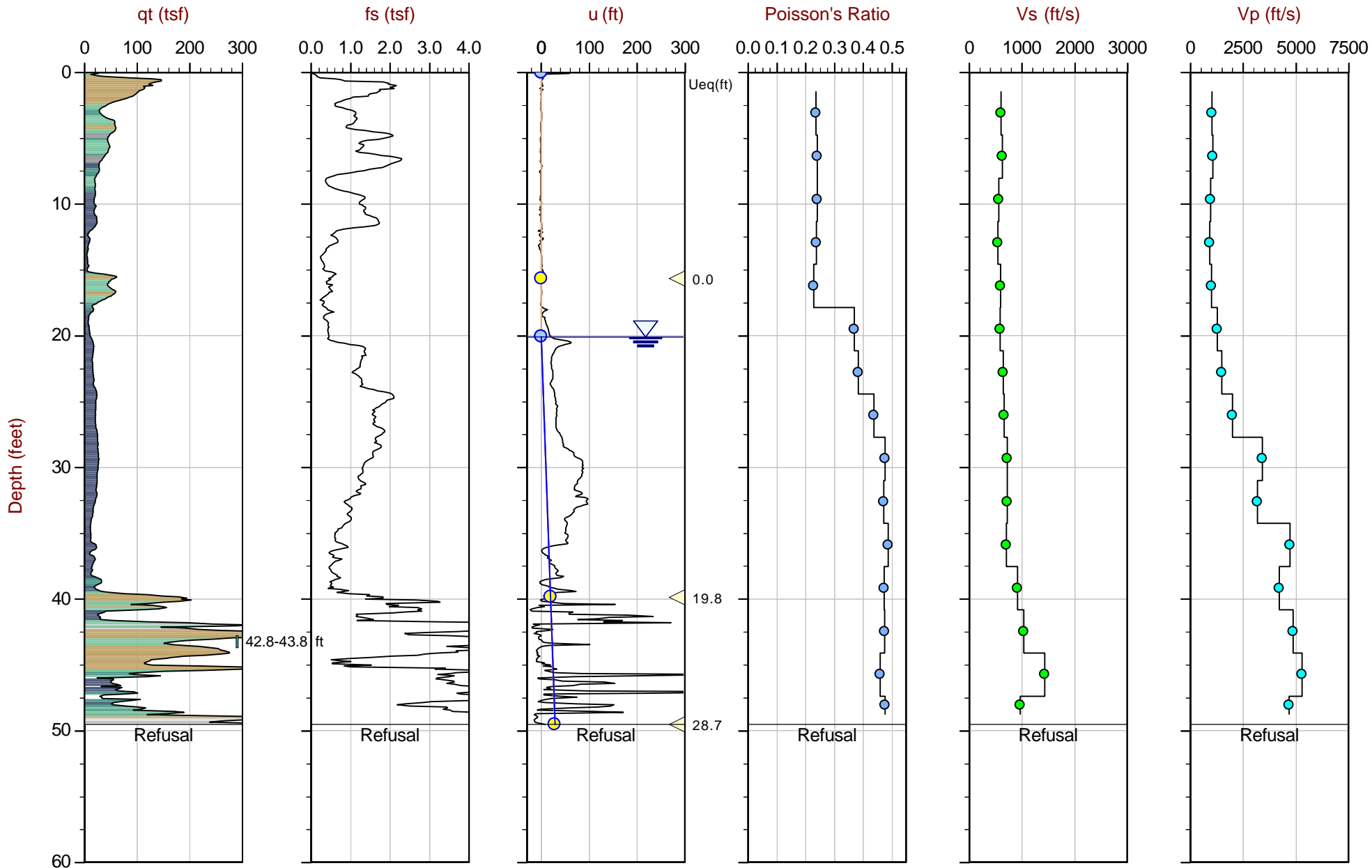
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-16 10:34
Site: Cholla Power Plant

Sounding: CPT-14
Cone: 552:T1500F15U500



Max Depth: 15.100 m / 49.54 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP14.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929196 Long: -110.268458

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line | Water Sample

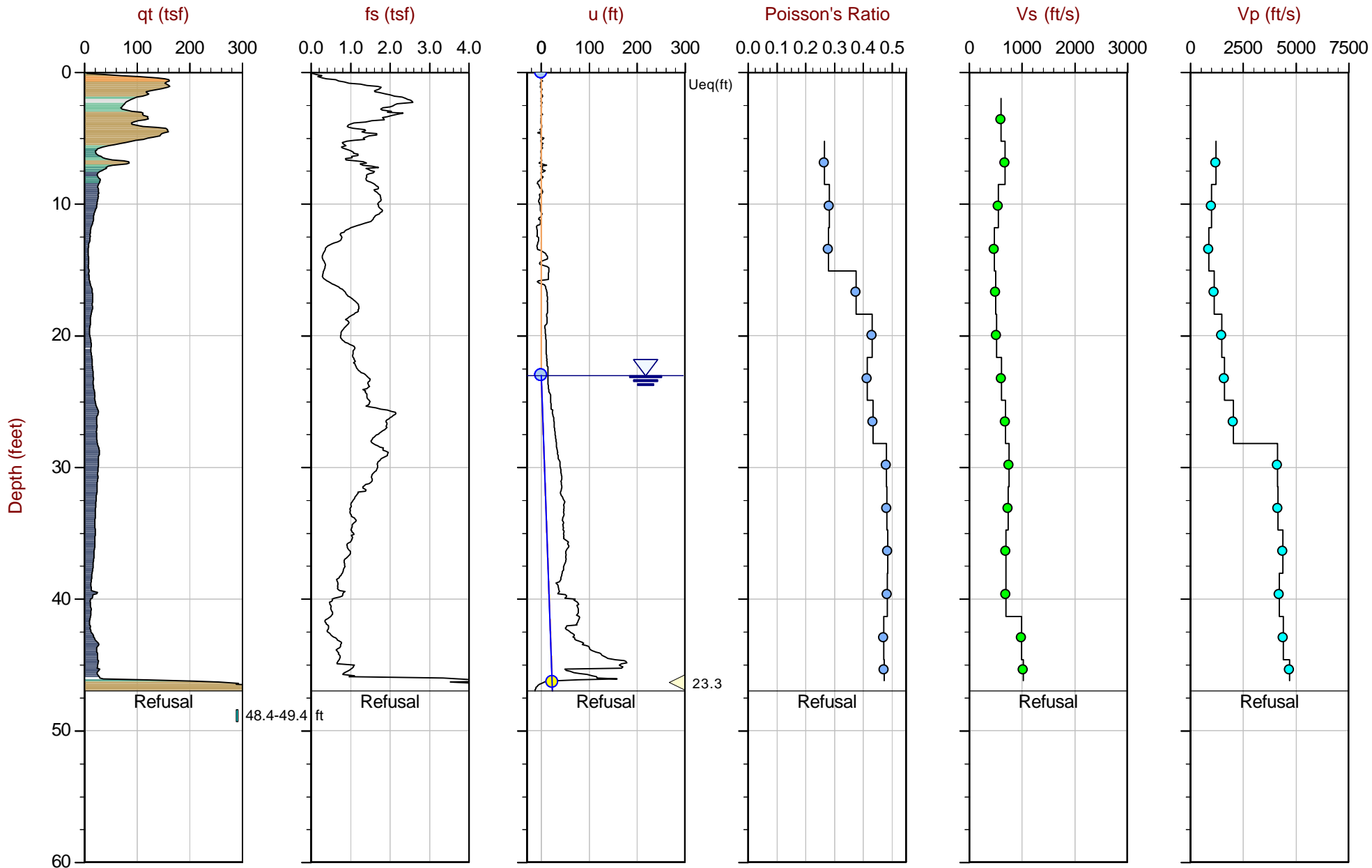
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-16 12:28
Site: Cholla Power Plant

Sounding: CPT-15
Cone: 552:T1500F15U500



Max Depth: 14.325 m / 47.00 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP15.COR
Unit Wt: SBTQn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929053 Long: -110.268442

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

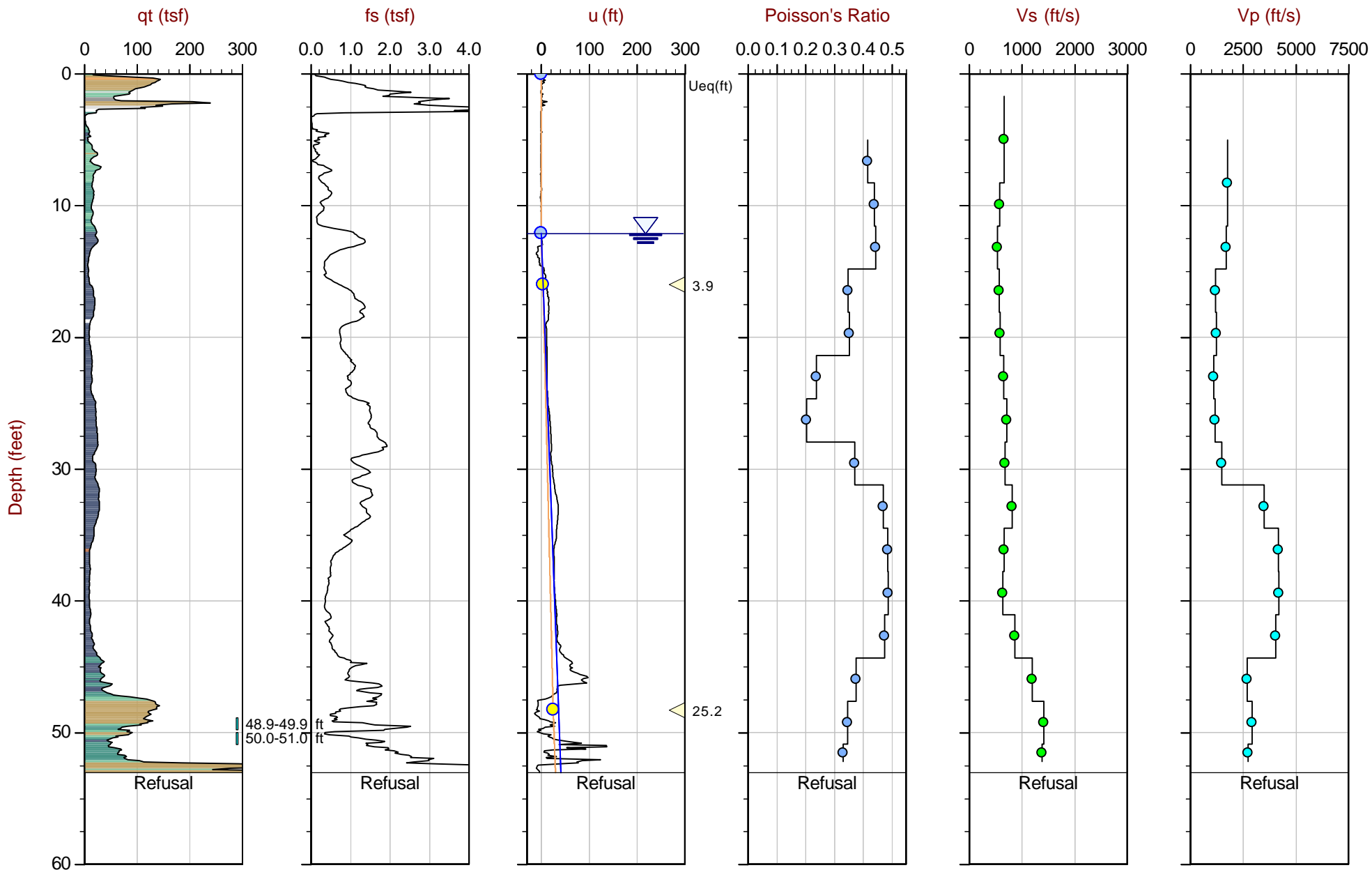
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-14 14:26
Site: Cholla Power Plant

Sounding: CPT-16
Cone: 552:T1500F15U500



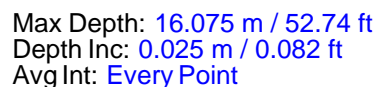
Max Depth: 16.175 m / 53.07 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP16.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929038 Long: -110.268309

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

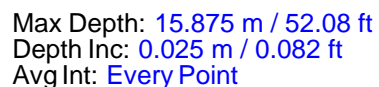
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



SBT: [Robertson, 2009 and 2010](#)
 Coords: Lat: [34.928893](#) Long: [-110.268168](#)

Overplot Item: ● Ueq ○ Assumed Ueq ◀ Dissipation, Ueq achieved ◁ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

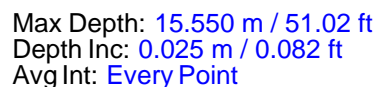


File: 20-52-21054_SP18.COR
Unit Wt: SBTQtn (PKR2009)

SBT: Robertson, 2009 and 2010
 Coords: Lat: 34.928743 Long: -110.267951

Overplot Item: ● Ueq ○ Assumed Ueq ◀ Dissipation, Ueq achieved ◁ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

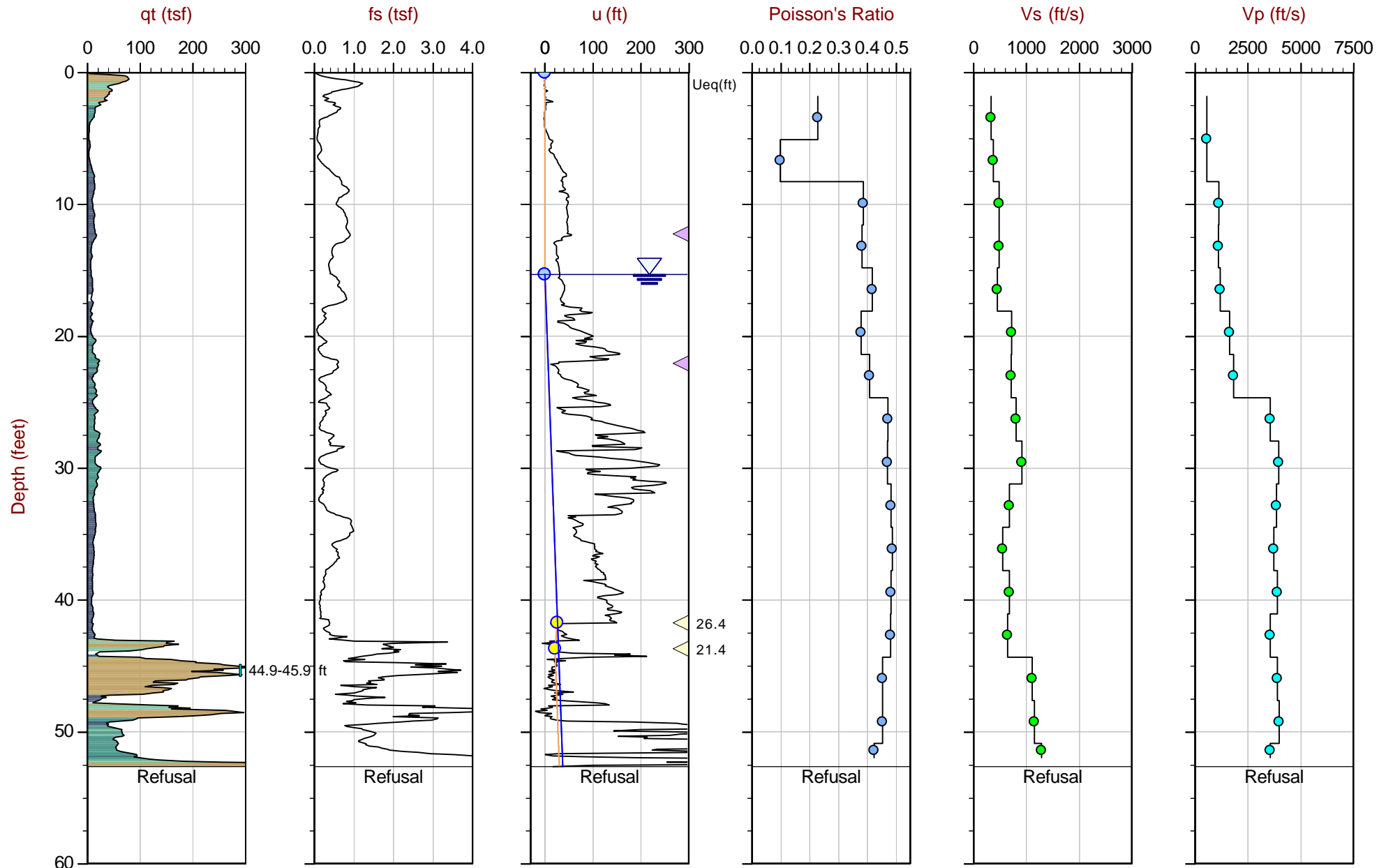
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



SBT: [Robertson, 2009 and 2010](#)
 Coords: Lat: 34.928568 Long: -110.267736

Overplot Item: ● Ueq ○ Assumed Ueq ◀ Dissipation, Ueq achieved ◁ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Max Depth: 16.050 m / 52.66 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP20.COR
Unit Wt: SBTQtn (PKR2009)

SBT: [Robertson, 2009 and 2010](#)
 Coords: Lat: 34.928437 Long: -110.267551

Overplot Item: ● Ueq ○ Assumed Ueq ◀ Dissipation, Ueq achieved ◁ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

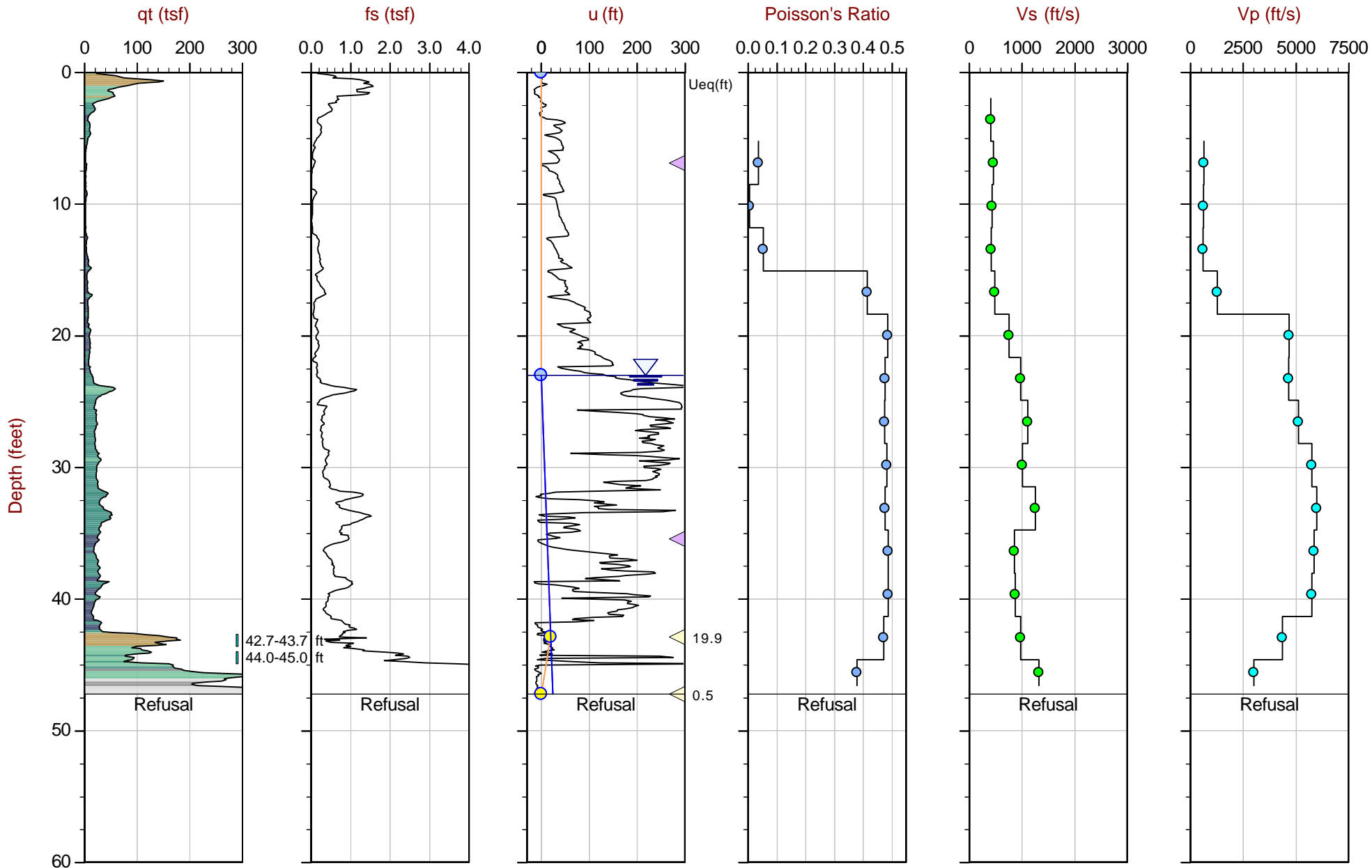
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-13 14:09
Site: Cholla Power Plant

Sounding: CPT-21
Cone: 552:T1500F15U500



Max Depth: 14.400 m / 47.24 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP21.COR
Unit Wt: SBTQn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928272 Long: -110.267246

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▲ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

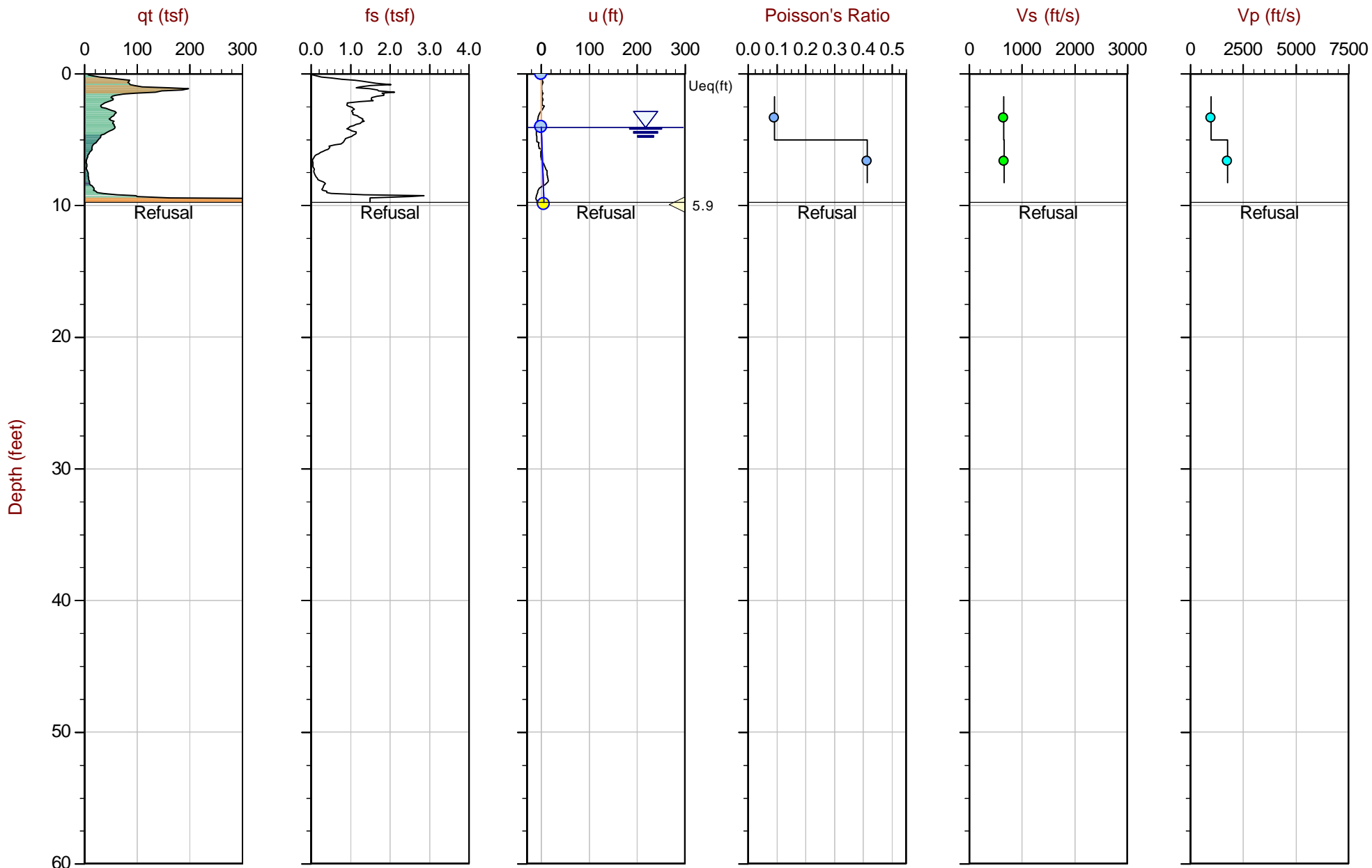
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-13 11:25
Site: Cholla Power Plant

Sounding: CPT-22
Cone: 552:T1500F15U500



Max Depth: 2.975 m / 9.76 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP22.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928016 Long: -110.266925

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

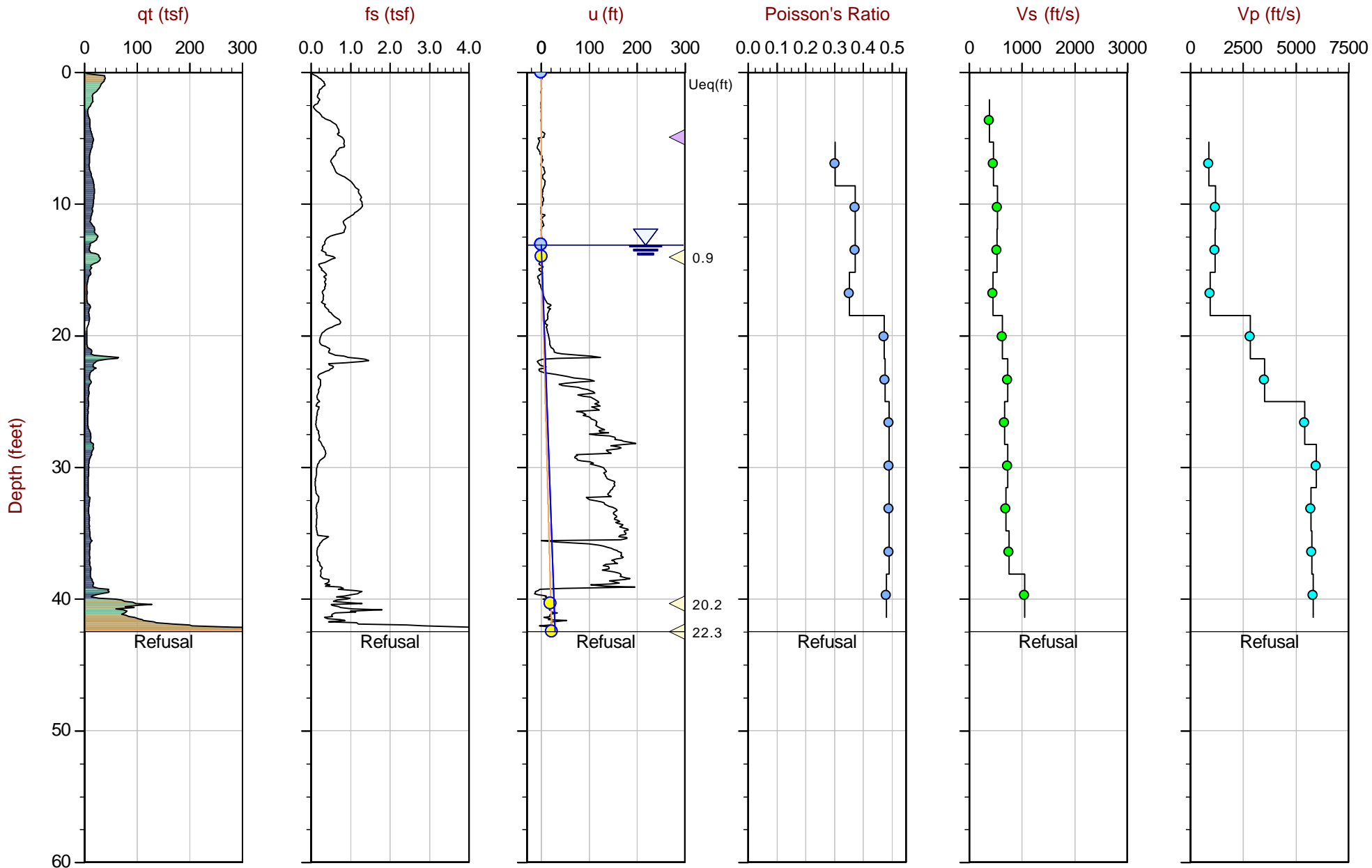
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-16 14:09
Site: Cholla Power Plant

Sounding: CPT-23
Cone: 552:T1500F15U500



Max Depth: 12.950 m / 42.49 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP23.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928670 Long: -110.267932

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▲ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

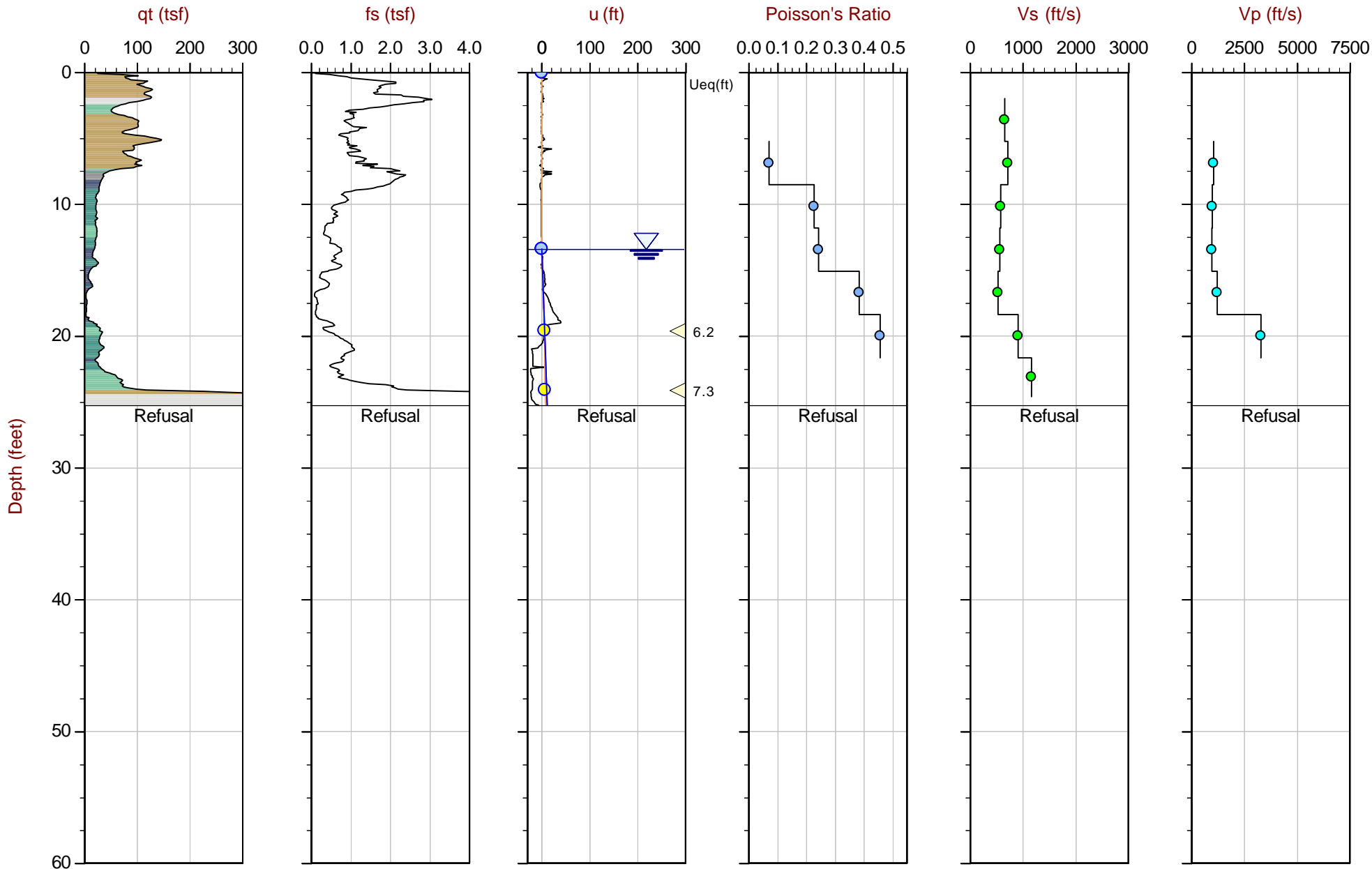
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-19 15:11
Site: Cholla Power Plant

Sounding: CPT-24
Cone: 552:T1500F15U500



Max Depth: 7.700 m / 25.26 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP24.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.929637 Long: -110.269138

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

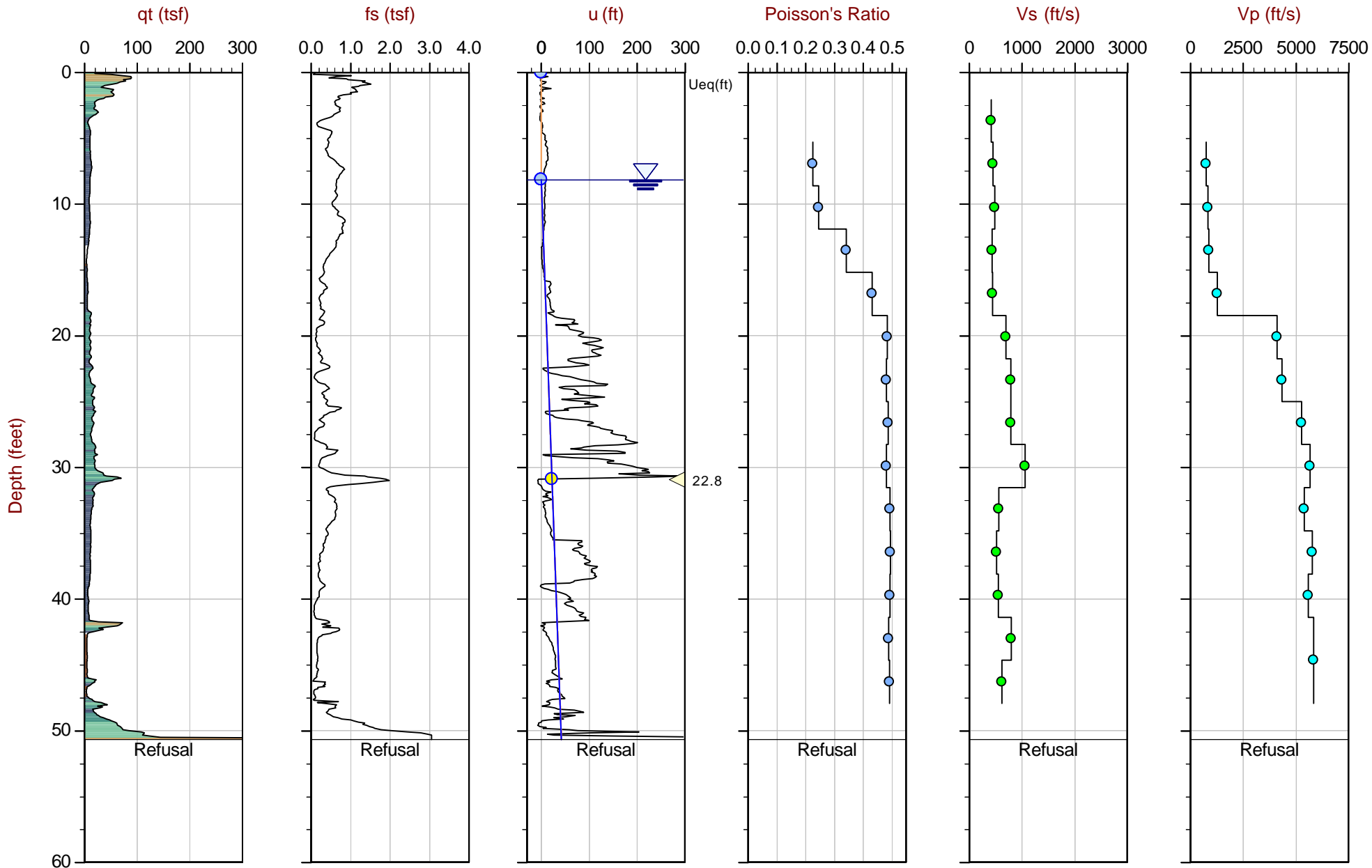
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-20 09:53
Site: Cholla Power Plant

Sounding: CPT-25
Cone: 657:T1500F15U500



Max Depth: 15.450 m / 50.69 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP25.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928437 Long: -110.267658

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

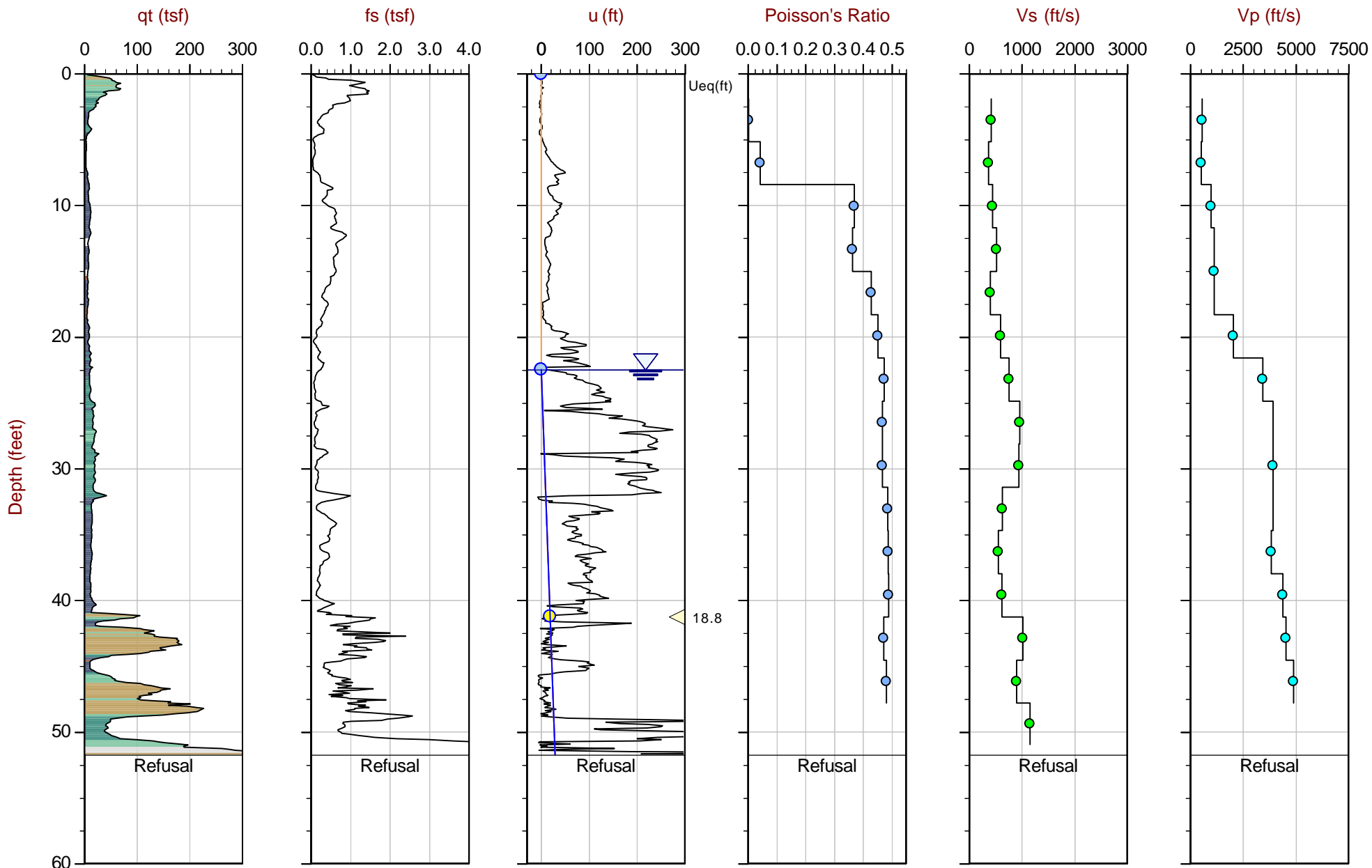
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-20 11:28
Site: Cholla Power Plant

Sounding: CPT-26
Cone: 657:T1500F15U500



Max Depth: 15.775 m / 51.75 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP26.COR
Unit Wt: SBTQn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928306 Long: -110.267504

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line | Water Sample

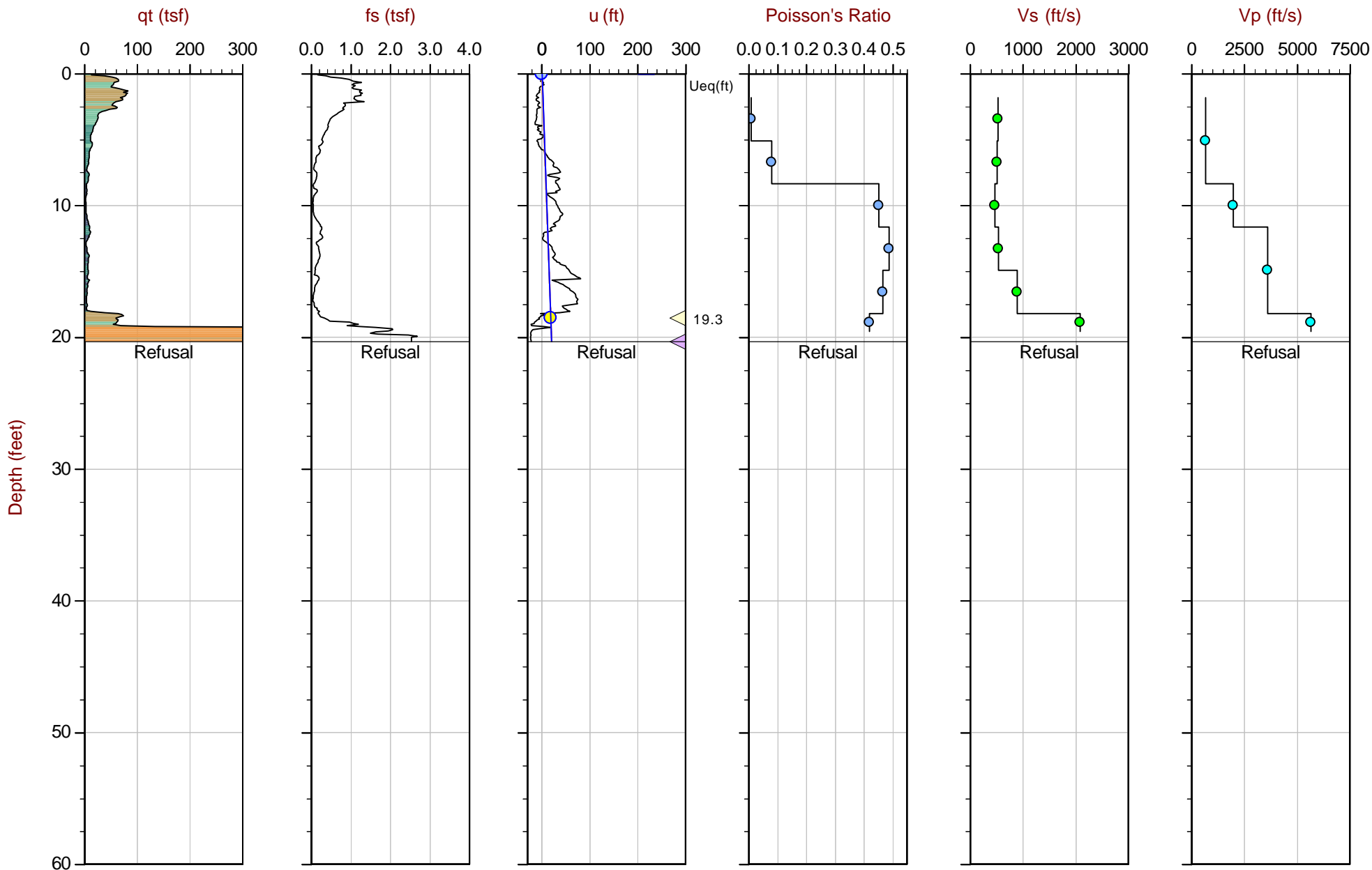
The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.



Wood plc

Job No: 20-52-21054
Date: 2020-07-20 12:56
Site: Cholla Power Plant

Sounding: CPT-27
Cone: 657:T1500F15U500



Max Depth: 6.200 m / 20.34 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 20-52-21054_SP27.COR
Unit Wt: SBTQtn(PKR2009)

SBT: Robertson, 2009 and 2010
Coords: Lat: 34.928146 Long: -110.267118

Overplot Item: ● Ueq ● Assumed Ueq ▲ Dissipation, Ueq achieved ▼ Dissipation, Ueq not achieved — Phreatic Surface — Hydrostatic Line ■ Water Sample

The reported coordinates were acquired from consumer grade GPS equipment and are only approximate locations. The coordinates should not be used for design purposes.

Seismic Cone Penetration Test Tabular Results



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-01
Date: 07:15:20 08:09

Seismic Source: Beam
Seismic Offset (ft): 1.83
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u SHEAR WAVE VELOCITY TEST RESULTS - V_s

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.07	1.41	2.31			
5.35	4.69	5.04	2.73	3.73	731



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-03
Date: 07:15:20 08:46

SCPT_u POISSON'S RATIO RESULTS

Depth From (ft)	Depth To (ft)	Vs Interval Velocity (ft/s)	Vp Interval Velocity (ft/s)	Poisson's Ratio
1.90	5.15	879	1364	0.15
5.15	6.96	881	1450	0.21



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-03
Date: 07:15:20 08:46

Seismic Source: Plate
Seismic Offset (ft): 8.25
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u COMPRESSION WAVE VELOCITY TEST RESULTS - V_p

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.56	1.90	8.47			
5.81	5.15	9.73	1.26	0.92	1364
7.61	6.96	10.79	1.06	0.73	1450



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-03
Date: 07:15:20 08:46

Seismic Source: Beam
Seismic Offset (ft): 1.83
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u SHEAR WAVE VELOCITY TEST RESULTS - V_s

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.56	1.90	2.64			
5.81	5.15	5.47	2.83	3.22	879
7.61	6.96	7.19	1.73	1.96	881



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-05
Date: 07:15:20 09:23

SCPT_u POISSON'S RATIO RESULTS

Depth From (ft)	Depth To (ft)	Vs Interval Velocity (ft/s)	Vp Interval Velocity (ft/s)	Poisson's Ratio
1.80	5.09	644	976	0.11
5.09	8.37	707	2002	0.43
8.37	9.42	1238	3916	0.44



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-05
Date: 07:15:20 09:23

Seismic Source: Plate
Seismic Offset (ft): 4.17
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u COMPRESSION WAVE VELOCITY TEST RESULTS - V_p

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.46	1.80	4.54			
5.74	5.09	6.58	2.03	2.08	976
9.02	8.37	9.35	2.77	1.39	2002
10.07	9.42	10.30	0.95	0.24	3916



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-05
Date: 07:15:20 09:23

Seismic Source: Beam
Seismic Offset (ft): 1.83
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u SHEAR WAVE VELOCITY TEST RESULTS - V_s

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.46	1.80	2.57			
5.74	5.09	5.40	2.83	4.40	644
9.02	8.37	8.56	3.16	4.47	707
10.07	9.42	9.59	1.03	0.83	1238



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-07
Date: 07:15:20 10:16

SCPT_u POISSON'S RATIO RESULTS

Depth From (ft)	Depth To (ft)	Vs Interval Velocity (ft/s)	Vp Interval Velocity (ft/s)	Poisson's Ratio
5.32	8.63	744	1396	0.30
8.63	11.91	1257	2312	0.29
11.91	15.19	1214	2762	0.38
15.19	18.47	1246	3127	0.41



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-07
Date: 07:15:20 10:16

Seismic Source: Plate
Seismic Offset (ft): 5.75
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u COMPRESSION WAVE VELOCITY TEST RESULTS - V_p

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
5.97	5.32	7.83			
9.28	8.63	10.37	2.54	1.82	1396
12.57	11.91	13.22	2.86	1.24	2312
15.85	15.19	16.24	3.02	1.09	2762
19.13	18.47	19.35	3.10	0.99	3127



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-07
Date: 07:15:20 10:16

Seismic Source: Beam
Seismic Offset (ft): 1.83
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u SHEAR WAVE VELOCITY TEST RESULTS - V_s

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.69	2.03	2.74			
5.97	5.32	5.62	2.89	3.15	917
9.28	8.63	8.82	3.20	4.30	744
12.57	11.91	12.05	3.23	2.57	1257
15.85	15.19	15.30	3.25	2.68	1214
19.13	18.47	18.56	3.26	2.62	1246



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-08
Date: 07:15:20 11:09

SCPT_u POISSON'S RATIO RESULTS

Depth From (ft)	Depth To (ft)	Vs Interval Velocity (ft/s)	Vp Interval Velocity (ft/s)	Poisson's Ratio
5.32	8.63	694	1401	0.34
8.63	11.91	629	1362	0.37
11.91	15.19	983	1854	0.31
15.19	18.47	900	1668	0.29
18.47	19.98	1243	2685	0.36



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-08
Date: 07:15:20 11:09

Seismic Source: Plate
Seismic Offset (ft): 7.08
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u COMPRESSION WAVE VELOCITY TEST RESULTS - V_p

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
5.97	5.32	8.85			
9.28	8.63	11.16	2.31	1.65	1401
12.57	11.91	13.86	2.69	1.98	1362
15.85	15.19	16.76	2.90	1.57	1854
19.13	18.47	19.78	3.02	1.81	1668
20.64	19.98	21.20	1.42	0.53	2685



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-08
Date: 07:15:20 11:09

Seismic Source: Beam
Seismic Offset (ft): 1.83
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u SHEAR WAVE VELOCITY TEST RESULTS - V_s

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.69	2.03	2.74			
5.97	5.32	5.62	2.89	2.94	981
9.28	8.63	8.82	3.20	4.61	694
12.57	11.91	12.05	3.23	5.14	629
15.85	15.19	15.30	3.25	3.31	983
19.13	18.47	18.56	3.26	3.62	900
20.64	19.98	20.06	1.50	1.21	1243



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-09
Date: 07:15:20 12:02

SCPTu POISSON'S RATIO RESULTS

Depth From (ft)	Depth To (ft)	Vs Interval Velocity (ft/s)	Vp Interval Velocity (ft/s)	Poisson's Ratio
5.41	8.69	674	1528	0.38
8.69	11.98	712	1665	0.39
11.98	15.26	662	1554	0.39
15.26	18.54	659	1409	0.36
18.54	21.82	962	3092	0.45
21.82	25.10	1268	4336	0.45
25.10	28.38	1615	5169	0.45
28.38	31.73	1887	5656	0.44



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-09
Date: 07:15:20 12:02

Seismic Source: Plate
Seismic Offset (ft): 6.17
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u COMPRESSION WAVE VELOCITY TEST RESULTS - V_p

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
6.07	5.41	8.21			
9.35	8.69	10.66	2.45	1.61	1528
12.63	11.98	13.47	2.81	1.69	1665
15.91	15.26	16.46	2.99	1.92	1554
19.19	18.54	19.54	3.08	2.19	1409
22.47	21.82	22.67	3.14	1.02	3092
25.75	25.10	25.85	3.17	0.73	4336
29.04	28.38	29.04	3.20	0.62	5169
32.38	31.73	32.32	3.28	0.58	5656



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-09
Date: 07:15:20 12:02

Seismic Source: Beam
Seismic Offset (ft): 1.83
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u SHEAR WAVE VELOCITY TEST RESULTS - Vs

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.79	2.13	2.81			
6.07	5.41	5.71	2.90	4.58	634
9.35	8.69	8.89	3.17	4.71	674
12.63	11.98	12.11	3.23	4.53	712
15.91	15.26	15.37	3.25	4.91	662
19.19	18.54	18.63	3.26	4.95	659
22.47	21.82	21.89	3.27	3.40	962
25.75	25.10	25.17	3.27	2.58	1268
29.04	28.38	28.44	3.27	2.03	1615
32.38	31.73	31.78	3.34	1.77	1887



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-10
Date: 07:15:20 13:15

SCPTu POISSON'S RATIO RESULTS

Depth From (ft)	Depth To (ft)	Vs Interval Velocity (ft/s)	Vp Interval Velocity (ft/s)	Poisson's Ratio
2.13	5.41	543	885	0.20
5.41	8.69	629	1178	0.30
8.69	11.98	734	1411	0.32
11.98	15.26	620	1185	0.31
15.26	18.54	545	1011	0.30
18.54	21.82	611	2485	0.47
21.82	25.10	693	3609	0.48
25.10	28.38	1076	5374	0.48
28.38	31.66	1517	5832	0.46
31.66	34.94	1454	5599	0.46



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-10
Date: 07:15:20 13:15

Seismic Source: Plate
Seismic Offset (ft): 6.42
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u COMPRESSION WAVE VELOCITY TEST RESULTS - V_p

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.79	2.13	6.77			
6.07	5.41	8.40	1.63	1.85	885
9.35	8.69	10.81	2.41	2.05	1178
12.63	11.98	13.59	2.78	1.97	1411
15.91	15.26	16.55	2.97	2.50	1185
19.19	18.54	19.62	3.06	3.03	1011
22.47	21.82	22.74	3.13	1.26	2485
25.75	25.10	25.91	3.16	0.88	3609
29.04	28.38	29.10	3.19	0.59	5374
32.32	31.66	32.30	3.21	0.55	5832
35.60	34.94	35.53	3.22	0.58	5599



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-10
Date: 07:15:20 13:15

Seismic Source: Beam
Seismic Offset (ft): 1.83
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u SHEAR WAVE VELOCITY TEST RESULTS - V_s

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.79	2.13	2.81			
6.07	5.41	5.71	2.90	5.35	543
9.35	8.69	8.89	3.17	5.04	629
12.63	11.98	12.11	3.23	4.40	734
15.91	15.26	15.37	3.25	5.25	620
19.19	18.54	18.63	3.26	5.99	545
22.47	21.82	21.89	3.27	5.35	611
25.75	25.10	25.17	3.27	4.72	693
29.04	28.38	28.44	3.27	3.04	1076
32.32	31.66	31.71	3.28	2.16	1517
35.60	34.94	34.99	3.28	2.25	1454



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-11
Date: 07:15:20 15:02

SCPT_u POISSON'S RATIO RESULTS

Depth From (ft)	Depth To (ft)	Vs Interval Velocity (ft/s)	Vp Interval Velocity (ft/s)	Poisson's Ratio
5.15	8.43	641	1118	0.26
8.43	11.71	522	896	0.24
11.71	15.03	501	1084	0.36
15.03	18.31	1003	2495	0.40
18.31	21.59	1324	3501	0.42



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-11
Date: 07:15:20 15:02

Seismic Source: Plate
Seismic Offset (ft): 9.17
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u COMPRESSION WAVE VELOCITY TEST RESULTS - V_p

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
5.81	5.15	10.52			
9.09	8.43	12.46	1.94	1.73	1118
12.37	11.71	14.88	2.42	2.70	896
15.68	15.03	17.60	2.73	2.52	1084
18.96	18.31	20.48	2.87	1.15	2495
22.24	21.59	23.46	2.98	0.85	3501



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-11
Date: 07:15:20 15:02

Seismic Source: Beam
Seismic Offset (ft): 1.83
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u SHEAR WAVE VELOCITY TEST RESULTS - V_s

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.56	1.90	2.64			
5.81	5.15	5.47	2.83	5.14	550
9.09	8.43	8.63	3.16	4.94	641
12.37	11.71	11.85	3.23	6.19	522
15.68	15.03	15.14	3.28	6.56	501
18.96	18.31	18.40	3.26	3.25	1003
22.24	21.59	21.67	3.27	2.47	1324



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-12
Date: 07:16:20 08:09

SCPT_u POISSON'S RATIO RESULTS

Depth From (ft)	Depth To (ft)	Vs Interval Velocity (ft/s)	Vp Interval Velocity (ft/s)	Poisson's Ratio
1.90	5.15	709	1254	0.27
5.15	8.43	718	1273	0.27
8.43	11.71	531	876	0.21
11.71	15.03	505	2108	0.47
15.03	18.11	957	2108	0.37
18.11	21.59	1466	5122	0.46



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-12
Date: 07:16:20 08:09

Seismic Source: Plate
Seismic Offset (ft): 9.67
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u COMPRESSION WAVE VELOCITY TEST RESULTS - V_p

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.56	1.90	9.86			
5.81	5.15	10.96	1.10	0.88	1254
9.09	8.43	12.83	1.87	1.47	1273
12.37	11.71	15.19	2.36	2.69	876
18.77	18.11	20.53	5.34	2.54	2108
22.24	21.59	23.66	3.13	0.61	5122



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-12
Date: 07:16:20 08:09

Seismic Source: Beam
Seismic Offset (ft): 1.83
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u SHEAR WAVE VELOCITY TEST RESULTS - V_s

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.56	1.90	2.64			
5.81	5.15	5.47	2.83	3.99	709
9.09	8.43	8.63	3.16	4.41	718
12.37	11.71	11.85	3.23	6.08	531
15.68	15.03	15.14	3.28	6.51	505
18.77	18.11	18.20	3.07	3.20	957
22.24	21.59	21.67	3.46	2.36	1466



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-13
Date: 07:16:20 09:23

SCPT_u POISSON'S RATIO RESULTS

Depth From (ft)	Depth To (ft)	Vs Interval Velocity (ft/s)	Vp Interval Velocity (ft/s)	Poisson's Ratio
1.97	5.25	684	1074	0.16
5.25	8.53	628	1012	0.19
8.53	11.81	509	801	0.16
11.81	15.09	484	754	0.15
15.09	18.37	482	998	0.35
18.37	21.65	566	1763	0.44
21.65	24.93	589	3074	0.48
24.93	28.22	678	4145	0.49
28.22	31.50	868	5287	0.49
31.50	34.78	1383	5801	0.47



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-13
Date: 07:16:20 09:23

Seismic Source: Plate
Seismic Offset (ft): 11.92
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u COMPRESSION WAVE VELOCITY TEST RESULTS - V_p

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.62	1.97	12.08			
5.91	5.25	13.03	0.94	0.88	1074
9.19	8.53	14.66	1.63	1.61	1012
12.47	11.81	16.78	2.12	2.65	801
15.75	15.09	19.23	2.45	3.25	754
19.03	18.37	21.90	2.67	2.68	998
22.31	21.65	24.72	2.82	1.60	1763
25.59	24.93	27.64	2.92	0.95	3074
28.87	28.22	30.63	2.99	0.72	4145
32.15	31.50	33.68	3.05	0.58	5287
35.43	34.78	36.76	3.09	0.53	5801



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-13
Date: 07:16:20 09:23

Seismic Source: Beam
Seismic Offset (ft): 1.83
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u SHEAR WAVE VELOCITY TEST RESULTS - V_s

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.62	1.97	2.69			
5.91	5.25	5.56	2.87	4.20	684
9.19	8.53	8.72	3.17	5.04	628
12.47	11.81	11.95	3.23	6.35	509
15.75	15.09	15.20	3.25	6.72	484
19.03	18.37	18.46	3.26	6.76	482
22.31	21.65	21.73	3.27	5.77	566
25.59	24.93	25.00	3.27	5.56	589
28.87	28.22	28.27	3.27	4.83	678
32.15	31.50	31.55	3.28	3.77	868
35.43	34.78	34.83	3.28	2.37	1383



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-14
Date: 07:16:20 10:34

SCPTu POISSON'S RATIO RESULTS

Depth From (ft)	Depth To (ft)	Vs Interval Velocity (ft/s)	Vp Interval Velocity (ft/s)	Poisson's Ratio
1.48	4.76	609	1037	0.24
4.76	8.04	631	1080	0.24
8.04	11.32	564	967	0.24
11.32	14.60	543	925	0.24
14.60	17.88	598	1008	0.23
17.88	21.16	587	1292	0.37
21.16	24.44	649	1495	0.38
24.44	27.72	664	2009	0.44
27.72	31.00	726	3430	0.48
31.00	34.28	726	3184	0.47
34.28	37.57	709	4729	0.49
37.57	40.85	920	4220	0.48
40.85	44.13	1041	4878	0.48
44.13	47.41	1436	5309	0.46
47.41	48.75	971	4702	0.48



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-14
Date: 07:16:20 10:34

Seismic Source: Plate
Seismic Offset (ft): 11.25
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u COMPRESSION WAVE VELOCITY TEST RESULTS - V_p

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.13	1.48	11.35			
5.41	4.76	12.21	0.87	0.84	1037
8.69	8.04	13.83	1.61	1.49	1080
11.98	11.32	15.96	2.13	2.21	967
15.26	14.60	18.43	2.47	2.67	925
18.54	17.88	21.13	2.69	2.67	1008
21.82	21.16	23.97	2.84	2.20	1292
25.10	24.44	26.91	2.94	1.97	1495
28.38	27.72	29.92	3.01	1.50	2009
31.66	31.00	32.98	3.06	0.89	3430
34.94	34.28	36.08	3.10	0.97	3184
38.22	37.57	39.21	3.13	0.66	4729
41.50	40.85	42.37	3.15	0.75	4220
44.78	44.13	45.54	3.17	0.65	4878
48.06	47.41	48.73	3.19	0.60	5309
49.41	48.75	50.03	1.31	0.28	4702



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-14
Date: 07:16:20 10:34

Seismic Source: Beam
Seismic Offset (ft): 1.83
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u SHEAR WAVE VELOCITY TEST RESULTS - V_s

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.13	1.48	2.35			
5.41	4.76	5.10	2.75	4.51	609
8.69	8.04	8.24	3.15	4.99	631
11.98	11.32	11.47	3.22	5.71	564
15.26	14.60	14.71	3.25	5.99	543
18.54	17.88	17.97	3.26	5.46	598
21.82	21.16	21.24	3.27	5.56	587
25.10	24.44	24.51	3.27	5.04	649
28.38	27.72	27.78	3.27	4.93	664
31.66	31.00	31.06	3.28	4.51	726
34.94	34.28	34.33	3.28	4.51	726
38.22	37.57	37.61	3.28	4.62	709
41.50	40.85	40.89	3.28	3.56	920
44.78	44.13	44.17	3.28	3.15	1041
48.06	47.41	47.44	3.28	2.28	1436
49.41	48.75	48.79	1.34	1.38	971



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-15
Date: 07:16:20 12:28

SCPTu POISSON'S RATIO RESULTS

Depth From (ft)	Depth To (ft)	Vs Interval Velocity (ft/s)	Vp Interval Velocity (ft/s)	Poisson's Ratio
5.25	8.53	685	1213	0.27
8.53	11.81	554	1010	0.28
11.81	15.09	481	870	0.28
15.09	18.37	501	1125	0.38
18.37	21.65	519	1495	0.43
21.65	24.93	615	1614	0.42
24.93	28.22	688	2044	0.44
28.22	31.50	760	4137	0.48
31.50	34.78	744	4173	0.48
34.78	38.06	702	4399	0.49
38.06	41.34	696	4222	0.49
41.34	44.62	997	4427	0.47
44.62	46.23	1033	4711	0.48



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-15
Date: 07:16:20 12:28

Seismic Source: Plate
Seismic Offset (ft): 9.50
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u COMPRESSION WAVE VELOCITY TEST RESULTS - V_p

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
5.91	5.25	10.85			
9.19	8.53	12.77	1.91	1.58	1213
12.47	11.81	15.16	2.39	2.37	1010
15.75	15.09	17.83	2.68	3.08	870
19.03	18.37	20.68	2.85	2.54	1125
22.31	21.65	23.65	2.96	1.98	1495
25.59	24.93	26.68	3.04	1.88	1614
28.87	28.22	29.77	3.09	1.51	2044
32.15	31.50	32.90	3.13	0.76	4137
35.43	34.78	36.05	3.15	0.76	4173
38.71	38.06	39.23	3.18	0.72	4399
42.00	41.34	42.42	3.19	0.76	4222
45.28	44.62	45.62	3.20	0.72	4427
46.88	46.23	47.19	1.57	0.33	4711



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-15
Date: 07:16:20 12:28

Seismic Source: Beam
Seismic Offset (ft): 1.83
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u SHEAR WAVE VELOCITY TEST RESULTS - Vs

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.62	1.97	2.69			
5.91	5.25	5.56	2.87	4.72	609
9.19	8.53	8.72	3.17	4.62	685
12.47	11.81	11.95	3.23	5.83	554
15.75	15.09	15.20	3.25	6.77	481
19.03	18.37	18.46	3.26	6.51	501
22.31	21.65	21.73	3.27	6.30	519
25.59	24.93	25.00	3.27	5.32	615
28.87	28.22	28.27	3.27	4.76	688
32.15	31.50	31.55	3.28	4.31	760
35.43	34.78	34.83	3.28	4.40	744
38.71	38.06	38.10	3.28	4.67	702
42.00	41.34	41.38	3.28	4.71	696
45.28	44.62	44.66	3.28	3.29	997
46.88	46.23	46.26	1.61	1.55	1033



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-16
Date: 07:14:20 14:26

SCPT_u POISSON'S RATIO RESULTS

Depth From (ft)	Depth To (ft)	Vs Interval Velocity (ft/s)	Vp Interval Velocity (ft/s)	Poisson's Ratio
5.02	8.30	665	1766	0.42
8.30	11.58	577	1766	0.44
11.58	14.83	540	1710	0.45
14.83	18.11	576	1194	0.35
18.11	21.39	588	1232	0.35
21.39	24.67	656	1120	0.24
24.67	27.95	718	1179	0.21
27.95	31.23	679	1503	0.37
31.23	34.51	822	3505	0.47
34.51	37.80	665	4179	0.49
37.80	41.08	638	4199	0.49
41.08	44.36	868	4057	0.48
44.36	47.64	1202	2702	0.38
47.64	50.92	1420	2931	0.35
50.92	52.23	1382	2748	0.33



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-16
Date: 07:14:20 14:26

Seismic Source: Plate
Seismic Offset (ft): 9.50
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u COMPRESSION WAVE VELOCITY TEST RESULTS - V_p

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
5.68	5.02	10.74			
12.24	11.58	14.98	4.23	2.40	1766
15.49	14.83	17.61	2.63	1.54	1710
18.77	18.11	20.45	2.84	2.38	1194
22.05	21.39	23.41	2.96	2.40	1232
25.33	24.67	26.44	3.03	2.71	1120
28.61	27.95	29.52	3.09	2.62	1179
31.89	31.23	32.65	3.12	2.08	1503
35.17	34.51	35.80	3.15	0.90	3505
38.45	37.80	38.97	3.17	0.76	4179
41.73	41.08	42.16	3.19	0.76	4199
45.01	44.36	45.36	3.20	0.79	4057
48.29	47.64	48.58	3.21	1.19	2702
51.58	50.92	51.80	3.22	1.10	2931
52.89	52.23	53.09	1.29	0.47	2748



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-16
Date: 07:14:20 14:26

Seismic Source: Beam
Seismic Offset (ft): 1.83
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u SHEAR WAVE VELOCITY TEST RESULTS - V_s

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.36	1.71	2.50			
8.96	8.30	8.50	6.00	9.02	665
12.24	11.58	11.73	3.23	5.59	577
15.49	14.83	14.94	3.22	5.95	540
18.77	18.11	18.20	3.26	5.67	576
22.05	21.39	21.47	3.27	5.56	588
25.33	24.67	24.74	3.27	4.99	656
28.61	27.95	28.01	3.27	4.56	718
31.89	31.23	31.29	3.28	4.83	679
35.17	34.51	34.56	3.27	3.99	822
38.45	37.80	37.84	3.28	4.93	665
41.73	41.08	41.12	3.28	5.14	638
45.01	44.36	44.40	3.28	3.78	868
48.29	47.64	47.67	3.28	2.73	1202
51.58	50.92	50.95	3.28	2.31	1420
52.89	52.23	52.26	1.31	0.95	1382



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-17
Date: 07:14:20 12:46

SCPT_u POISSON'S RATIO RESULTS

Depth From (ft)	Depth To (ft)	Vs Interval Velocity (ft/s)	Vp Interval Velocity (ft/s)	Poisson's Ratio
5.41	8.69	711	1240	0.26
8.69	11.98	677	1203	0.27
11.98	15.26	517	919	0.27
15.26	18.54	471	822	0.26
18.54	21.82	472	827	0.26
21.82	25.10	611	1732	0.43
25.10	28.38	600	3267	0.48
28.38	31.66	601	4415	0.49
31.66	34.94	619	4645	0.49
34.94	38.22	701	4793	0.49
38.22	41.50	822	4751	0.49
41.50	44.78	1159	4889	0.47
44.78	48.06	1133	4748	0.47
48.06	51.35	1530	4922	0.45



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-17
Date: 07:14:20 12:46

Seismic Source: Plate
Seismic Offset (ft): 10.33
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u COMPRESSION WAVE VELOCITY TEST RESULTS - V_p

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
6.07	5.41	11.66			
9.35	8.69	13.50	1.84	1.48	1240
12.63	11.98	15.82	2.31	1.92	1203
15.91	15.26	18.42	2.61	2.84	919
19.19	18.54	21.22	2.80	3.40	822
22.47	21.82	24.14	2.92	3.53	827
25.75	25.10	27.14	3.00	1.73	1732
29.04	28.38	30.20	3.06	0.94	3267
32.32	31.66	33.30	3.10	0.70	4415
35.60	34.94	36.44	3.13	0.67	4645
38.88	38.22	39.59	3.16	0.66	4793
42.16	41.50	42.77	3.18	0.67	4751
45.44	44.78	45.96	3.19	0.65	4889
48.72	48.06	49.16	3.20	0.68	4748
52.00	51.35	52.37	3.21	0.65	4922



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-17
Date: 07:14:20 12:46

Seismic Source: Beam
Seismic Offset (ft): 1.83
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u SHEAR WAVE VELOCITY TEST RESULTS - Vs

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.79	2.13	2.81			
6.07	5.41	5.71	2.90	4.46	652
9.35	8.69	8.89	3.17	4.46	711
12.63	11.98	12.11	3.23	4.77	677
15.91	15.26	15.37	3.25	6.29	517
19.19	18.54	18.63	3.26	6.92	471
22.47	21.82	21.89	3.27	6.93	472
25.75	25.10	25.17	3.27	5.35	611
29.04	28.38	28.44	3.27	5.46	600
32.32	31.66	31.71	3.28	5.45	601
35.60	34.94	34.99	3.28	5.30	619
38.88	38.22	38.27	3.28	4.68	701
42.16	41.50	41.54	3.28	3.99	822
45.44	44.78	44.82	3.28	2.83	1159
48.72	48.06	48.10	3.28	2.89	1133
52.00	51.35	51.38	3.28	2.14	1530



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-18
Date: 07:14:20 10:41

SCPT_u POISSON'S RATIO RESULTS

Depth From (ft)	Depth To (ft)	Vs Interval Velocity (ft/s)	Vp Interval Velocity (ft/s)	Poisson's Ratio
5.41	8.69	645	1139	0.26
8.69	11.98	589	1046	0.27
11.98	15.26	518	1281	0.40
15.26	18.54	534	3087	0.49
18.54	21.82	470	3993	0.49
21.82	25.10	620	5254	0.49
25.10	28.38	571	5850	0.50
28.38	31.66	732	5408	0.49
31.66	34.94	773	5308	0.49
34.94	38.22	871	5204	0.49
38.22	41.50	1039	5230	0.48
41.50	44.78	1196	5251	0.47
44.78	48.06	1054	5251	0.48
48.06	51.28	1495	4670	0.44



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-18
Date: 07:14:20 10:41

Seismic Source: Plate
Seismic Offset (ft): 9.58
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u COMPRESSION WAVE VELOCITY TEST RESULTS - V_p

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
6.07	5.41	11.00			
9.35	8.69	12.94	1.93	1.70	1139
12.63	11.98	15.34	2.40	2.29	1046
15.91	15.26	18.01	2.68	2.09	1281
19.19	18.54	20.87	2.85	0.92	3087
22.47	21.82	23.83	2.96	0.74	3993
25.75	25.10	26.86	3.04	0.58	5254
29.04	28.38	29.95	3.09	0.53	5850
32.32	31.66	33.08	3.13	0.58	5408
35.60	34.94	36.23	3.15	0.59	5308
38.88	38.22	39.40	3.17	0.61	5204
42.16	41.50	42.59	3.19	0.61	5230
48.72	48.06	49.01	6.42	1.22	5251
51.94	51.28	52.17	3.16	0.68	4670



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-18
Date: 07:14:20 10:41

Seismic Source: Beam
Seismic Offset (ft): 1.83
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u SHEAR WAVE VELOCITY TEST RESULTS - Vs

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.79	2.13	2.81			
6.07	5.41	5.71	2.90	5.12	567
9.35	8.69	8.89	3.17	4.92	645
12.63	11.98	12.11	3.23	5.49	589
15.91	15.26	15.37	3.25	6.27	518
19.19	18.54	18.63	3.26	6.11	534
22.47	21.82	21.89	3.27	6.96	470
25.75	25.10	25.17	3.27	5.27	620
29.04	28.38	28.44	3.27	5.73	571
32.32	31.66	31.71	3.28	4.47	732
35.60	34.94	34.99	3.28	4.24	773
38.88	38.22	38.27	3.28	3.77	871
42.16	41.50	41.54	3.28	3.15	1039
45.44	44.78	44.82	3.28	2.74	1196
48.72	48.06	48.10	3.28	3.11	1054
51.94	51.28	51.31	3.21	2.15	1495



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-19
Date: 07:14:20 08:23

SCPTu POISSON'S RATIO RESULTS

Depth From (ft)	Depth To (ft)	Vs Interval Velocity (ft/s)	Vp Interval Velocity (ft/s)	Poisson's Ratio
4.86	8.10	517	851	0.21
8.10	11.38	452	1399	0.44
11.38	14.67	413	3808	0.49
14.67	17.95	420	4991	0.50
17.95	21.23	611	5574	0.49
21.23	24.51	1006	5737	0.48
24.51	27.82	927	5569	0.49
27.82	31.10	918	5960	0.49
31.10	34.38	710	5647	0.49
34.38	37.66	679	5802	0.49
37.66	40.95	651	5878	0.49
40.95	44.23	1008	5878	0.49
44.23	47.51	1077	5531	0.48
47.51	50.20	1507	5485	0.46



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-19
Date: 07:14:20 08:23

Seismic Source: Plate
Seismic Offset (ft): 10.50
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u COMPRESSION WAVE VELOCITY TEST RESULTS - V_p

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
5.51	4.86	11.57			
8.76	8.10	13.26	1.70	1.99	851
12.04	11.38	15.49	2.22	1.59	1399
15.32	14.67	18.04	2.55	0.67	3808
18.60	17.95	20.79	2.76	0.55	4991
21.88	21.23	23.68	2.89	0.52	5574
25.16	24.51	26.66	2.98	0.52	5737
28.48	27.82	29.74	3.07	0.55	5569
31.76	31.10	32.83	3.09	0.52	5960
35.04	34.38	35.95	3.12	0.55	5647
38.32	37.66	39.10	3.15	0.54	5802
44.88	44.23	45.46	6.36	1.08	5878
48.16	47.51	48.65	3.20	0.58	5531
50.85	50.20	51.28	2.63	0.48	5485



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-19
Date: 07:14:20 08:23

Seismic Source: Beam
Seismic Offset (ft): 1.83
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u SHEAR WAVE VELOCITY TEST RESULTS - V_s

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.23	1.58	2.41			
5.51	4.86	5.19	2.77	6.14	452
8.76	8.10	8.31	3.12	6.03	517
12.04	11.38	11.53	3.22	7.13	452
15.32	14.67	14.78	3.25	7.87	413
18.60	17.95	18.04	3.26	7.76	420
21.88	21.23	21.31	3.27	5.35	611
25.16	24.51	24.58	3.27	3.25	1006
28.48	27.82	27.88	3.31	3.57	927
31.76	31.10	31.16	3.28	3.57	918
35.04	34.38	34.43	3.28	4.62	710
38.32	37.66	37.71	3.28	4.83	679
41.60	40.95	40.99	3.28	5.04	651
44.88	44.23	44.26	3.28	3.25	1008
48.16	47.51	47.54	3.28	3.04	1077
50.85	50.20	50.23	2.69	1.78	1507



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-20
Date: 07:13:20 11:34

SCPT_u POISSON'S RATIO RESULTS

Depth From (ft)	Depth To (ft)	Vs Interval Velocity (ft/s)	Vp Interval Velocity (ft/s)	Poisson's Ratio
1.80	5.09	336	567	0.23
5.09	8.30	379	567	0.10
8.30	11.58	488	1137	0.39
11.58	14.83	487	1116	0.38
14.83	18.11	450	1197	0.42
18.11	21.39	723	1643	0.38
21.39	24.67	717	1825	0.41
24.67	27.95	810	3579	0.47
27.95	31.23	918	3982	0.47
31.23	34.51	679	3873	0.48
34.51	37.80	558	3744	0.49
37.80	41.08	679	3905	0.48
41.08	44.36	651	3579	0.48
44.36	47.64	1116	3901	0.46
47.64	50.92	1157	3993	0.45
50.92	52.00	1289	3568	0.43



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-20
Date: 07:13:20 11:34

Seismic Source: Plate
Seismic Offset (ft): 7.75
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u COMPRESSION WAVE VELOCITY TEST RESULTS - V_p

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.46	1.80	7.96			
8.96	8.30	11.36	3.40	6.00	567
12.24	11.58	13.94	2.58	2.27	1137
15.49	14.83	16.73	2.80	2.51	1116
18.77	18.11	19.70	2.97	2.48	1197
22.05	21.39	22.75	3.05	1.86	1643
25.33	24.67	25.86	3.11	1.70	1825
28.61	27.95	29.01	3.15	0.88	3579
31.89	31.23	32.18	3.17	0.80	3982
35.17	34.51	35.37	3.19	0.82	3873
38.45	37.80	38.58	3.21	0.86	3744
41.73	41.08	41.80	3.22	0.83	3905
45.01	44.36	45.03	3.23	0.90	3579
48.29	47.64	48.26	3.24	0.83	3901
51.58	50.92	51.51	3.24	0.81	3993
52.66	52.00	52.58	1.07	0.30	3568



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-20
Date: 07:13:20 11:34

Seismic Source: Beam
Seismic Offset (ft): 1.83
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u SHEAR WAVE VELOCITY TEST RESULTS - Vs

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.46	1.80	2.57			
5.74	5.09	5.40	2.83	8.44	336
8.96	8.30	8.50	3.10	8.18	379
12.24	11.58	11.73	3.23	6.61	488
15.49	14.83	14.94	3.22	6.61	487
18.77	18.11	18.20	3.26	7.24	450
22.05	21.39	21.47	3.27	4.52	723
25.33	24.67	24.74	3.27	4.56	717
28.61	27.95	28.01	3.27	4.04	810
31.89	31.23	31.29	3.28	3.57	918
35.17	34.51	34.56	3.27	4.82	679
38.45	37.80	37.84	3.28	5.88	558
41.73	41.08	41.12	3.28	4.83	679
45.01	44.36	44.40	3.28	5.04	651
48.29	47.64	47.67	3.28	2.94	1116
51.58	50.92	50.95	3.28	2.83	1157
52.66	52.00	52.03	1.08	0.84	1289



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-21
Date: 07:13:20 14:09

SCPT_u POISSON'S RATIO RESULTS

Depth From (ft)	Depth To (ft)	Vs Interval Velocity (ft/s)	Vp Interval Velocity (ft/s)	Poisson's Ratio
5.25	8.53	448	646	0.04
8.53	11.81	438	621	0.01
11.81	15.09	422	614	0.05
15.09	18.37	484	1276	0.42
18.37	21.65	760	4701	0.49
21.65	24.93	979	4675	0.48
24.93	28.22	1112	5144	0.48
28.22	31.50	1015	5768	0.48
31.50	34.78	1258	6016	0.48
34.78	38.06	864	5874	0.49
38.06	41.34	877	5765	0.49
41.34	44.62	981	4373	0.47
44.62	46.59	1330	3024	0.38



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-21
Date: 07:13:20 14:09

Seismic Source: Plate
Seismic Offset (ft): 10.42
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u COMPRESSION WAVE VELOCITY TEST RESULTS - V_p

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
5.91	5.25	11.67			
9.19	8.53	13.47	1.80	2.78	646
12.47	11.81	15.75	2.28	3.68	621
15.75	15.09	18.34	2.59	4.22	614
19.03	18.37	21.12	2.78	2.18	1276
22.31	21.65	24.03	2.91	0.62	4701
25.59	24.93	27.02	2.99	0.64	4675
28.87	28.22	30.08	3.05	0.59	5144
32.15	31.50	33.18	3.10	0.54	5768
35.43	34.78	36.30	3.13	0.52	6016
38.71	38.06	39.46	3.16	0.54	5874
42.00	41.34	42.63	3.17	0.55	5765
45.28	44.62	45.82	3.19	0.73	4373
47.24	46.59	47.74	1.92	0.64	3024



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-21
Date: 07:13:20 14:09

Seismic Source: Beam
Seismic Offset (ft): 1.83
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u SHEAR WAVE VELOCITY TEST RESULTS - V_s

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.62	1.97	2.69			
5.91	5.25	5.56	2.87	7.02	409
9.19	8.53	8.72	3.17	7.06	448
12.47	11.81	11.95	3.23	7.37	438
15.75	15.09	15.20	3.25	7.70	422
19.03	18.37	18.46	3.26	6.75	484
22.31	21.65	21.73	3.27	4.30	760
25.59	24.93	25.00	3.27	3.34	979
28.87	28.22	28.27	3.27	2.94	1112
32.15	31.50	31.55	3.28	3.23	1015
35.43	34.78	34.83	3.28	2.61	1258
38.71	38.06	38.10	3.28	3.79	864
42.00	41.34	41.38	3.28	3.74	877
45.28	44.62	44.66	3.28	3.34	981
47.24	46.59	46.62	1.97	1.48	1330



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-22
Date: 07:13:20 11:25

SCPT_u POISSON'S RATIO RESULTS

Depth From (ft)	Depth To (ft)	Vs Interval Velocity (ft/s)	Vp Interval Velocity (ft/s)	Poisson's Ratio
1.74	5.02	655	977	0.09
5.02	8.30	669	1759	0.42



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-22
Date: 07:13:20 11:25

Seismic Source: Plate
Seismic Offset (ft): 8.58
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u COMPRESSION WAVE VELOCITY TEST RESULTS - V_p

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.40	1.74	8.75			
5.68	5.02	9.94	1.19	1.22	977
8.96	8.30	11.94	2.00	1.14	1759



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-22
Date: 07:13:20 11:25

Seismic Source: Beam
Seismic Offset (ft): 1.83
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u SHEAR WAVE VELOCITY TEST RESULTS - V_s

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.40	1.74	2.52			
5.68	5.02	5.34	2.82	4.31	655
8.96	8.30	8.50	3.16	4.72	669



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-23
Date: 07:16:20 14:09

SCPT_u POISSON'S RATIO RESULTS

Depth From (ft)	Depth To (ft)	Vs Interval Velocity (ft/s)	Vp Interval Velocity (ft/s)	Poisson's Ratio
5.32	8.63	465	876	0.30
8.63	11.91	535	1191	0.37
11.91	15.19	530	1177	0.37
15.19	18.47	451	948	0.35
18.47	21.75	635	2848	0.47
21.75	25.03	735	3530	0.48
25.03	28.28	678	5429	0.49
28.28	31.56	736	5978	0.49
31.56	34.84	701	5730	0.49
34.84	38.12	762	5769	0.49
38.12	41.40	1058	5847	0.48



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-23
Date: 07:16:20 14:09

Seismic Source: Plate
Seismic Offset (ft): 9.67
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u COMPRESSION WAVE VELOCITY TEST RESULTS - V_p

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
5.97	5.32	11.03			
9.28	8.63	12.96	1.93	2.20	876
12.57	11.91	15.34	2.38	2.00	1191
15.85	15.19	18.01	2.67	2.27	1177
19.13	18.47	20.85	2.84	3.00	948
22.41	21.75	23.81	2.96	1.04	2848
25.69	25.03	26.84	3.03	0.86	3530
28.94	28.28	29.89	3.05	0.56	5429
32.22	31.56	33.01	3.12	0.52	5978
35.50	34.84	36.16	3.15	0.55	5730
38.78	38.12	39.33	3.17	0.55	5769
42.06	41.40	42.52	3.19	0.55	5847



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-23
Date: 07:16:20 14:09

Seismic Source: Beam
Seismic Offset (ft): 1.83
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u SHEAR WAVE VELOCITY TEST RESULTS - V_s

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.72	2.07	2.76			
5.97	5.32	5.62	2.86	7.50	382
9.28	8.63	8.82	3.20	6.88	465
12.57	11.91	12.05	3.23	6.03	535
15.85	15.19	15.30	3.25	6.14	530
19.13	18.47	18.56	3.26	7.24	451
22.41	21.75	21.83	3.27	5.15	635
25.69	25.03	25.10	3.27	4.45	735
28.94	28.28	28.34	3.24	4.78	678
32.22	31.56	31.61	3.28	4.45	736
35.50	34.84	34.89	3.28	4.67	701
38.78	38.12	38.17	3.28	4.30	762
42.06	41.40	41.44	3.28	3.10	1058



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-24
Date: 07:19:20 15:11

SCPT_u POISSON'S RATIO RESULTS

Depth From (ft)	Depth To (ft)	Vs Interval Velocity (ft/s)	Vp Interval Velocity (ft/s)	Poisson's Ratio
5.25	8.53	719	1057	0.07
8.53	11.81	580	976	0.23
11.81	15.09	563	967	0.24
15.09	18.37	527	1217	0.39
18.37	21.65	915	3285	0.46



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-24
Date: 07:19:20 15:11

Seismic Source: Plate
Seismic Offset (ft): 9.50
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u COMPRESSION WAVE VELOCITY TEST RESULTS - V_p

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
5.91	5.25	10.85			
9.19	8.53	12.77	1.91	1.81	1057
12.47	11.81	15.16	2.39	2.45	976
15.75	15.09	17.83	2.68	2.77	967
19.03	18.37	20.68	2.85	2.34	1217
22.31	21.65	23.65	2.96	0.90	3285



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-24
Date: 07:19:20 15:11

Seismic Source: Beam
Seismic Offset (ft): 1.83
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u SHEAR WAVE VELOCITY TEST RESULTS - V_s

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.62	1.97	2.69			
5.91	5.25	5.56	2.87	4.36	659
9.19	8.53	8.72	3.17	4.40	719
12.47	11.81	11.95	3.23	5.57	580
15.75	15.09	15.20	3.25	5.77	563
19.03	18.37	18.46	3.26	6.19	527
22.31	21.65	21.73	3.27	3.57	915
25.26	24.61	24.67	2.94	2.52	1169



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-25
Date: 07:20:20 09:53

SCPT_u POISSON'S RATIO RESULTS

Depth From (ft)	Depth To (ft)	Vs Interval Velocity (ft/s)	Vp Interval Velocity (ft/s)	Poisson's Ratio
5.32	8.63	452	759	0.23
8.63	11.91	489	842	0.25
11.91	15.19	432	882	0.34
15.19	18.47	444	1289	0.43
18.47	21.75	701	4128	0.49
21.75	25.03	788	4349	0.48
25.03	28.28	791	5285	0.49
28.28	31.56	1068	5697	0.48
31.56	34.84	560	5406	0.50
34.84	38.12	521	5800	0.50
38.12	41.40	553	5612	0.50
41.40	44.69	801	5849	0.49
44.69	47.97	624	5849	0.49



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-25
Date: 07:20:20 09:53

Seismic Source: Plate
Seismic Offset (ft): 11.92
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u COMPRESSION WAVE VELOCITY TEST RESULTS - V_p

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
5.97	5.32	13.05			
9.28	8.63	14.72	1.66	2.19	759
12.57	11.91	16.85	2.14	2.53	842
15.85	15.19	19.31	2.46	2.79	882
19.13	18.47	21.98	2.67	2.07	1289
22.41	21.75	24.80	2.82	0.68	4128
25.69	25.03	27.73	2.92	0.67	4349
28.94	28.28	30.69	2.96	0.56	5285
32.22	31.56	33.74	3.05	0.54	5697
35.50	34.84	36.83	3.09	0.57	5406
38.78	38.12	39.94	3.12	0.54	5800
42.06	41.40	43.09	3.14	0.56	5612
48.62	47.97	49.43	6.34	1.08	5849



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-25
Date: 07:20:20 09:53

Seismic Source: Beam
Seismic Offset (ft): 1.83
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u SHEAR WAVE VELOCITY TEST RESULTS - V_s

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.72	2.07	2.76			
5.97	5.32	5.62	2.86	6.82	420
9.28	8.63	8.82	3.20	7.08	452
12.57	11.91	12.05	3.23	6.61	489
15.85	15.19	15.30	3.25	7.52	432
19.13	18.47	18.56	3.26	7.34	444
22.41	21.75	21.83	3.27	4.67	701
25.69	25.03	25.10	3.27	4.15	788
28.94	28.28	28.34	3.24	4.09	791
32.22	31.56	31.61	3.28	3.07	1068
35.50	34.84	34.89	3.28	5.85	560
38.78	38.12	38.17	3.28	6.30	521
42.06	41.40	41.44	3.28	5.93	553
45.34	44.69	44.72	3.28	4.09	801
48.62	47.97	48.00	3.28	5.26	624



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-26
Date: 07:20:20 11:28

SCPT_u POISSON'S RATIO RESULTS

Depth From (ft)	Depth To (ft)	Vs Interval Velocity (ft/s)	Vp Interval Velocity (ft/s)	Poisson's Ratio
1.90	5.15	411	582	0.00
5.15	8.43	365	528	0.04
8.43	11.71	446	983	0.37
11.71	15.03	521	1131	0.37
15.03	18.31	399	1131	0.43
18.31	21.59	599	2041	0.45
21.59	24.87	760	3436	0.47
24.87	28.15	959	3932	0.47
28.15	31.43	946	3932	0.47
31.43	34.71	631	3932	0.49
34.71	37.99	558	3849	0.49
37.99	41.27	624	4406	0.49
41.27	44.55	1025	4536	0.47
44.55	47.83	906	4909	0.48



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-26
Date: 07:20:20 11:28

Seismic Source: Plate
Seismic Offset (ft): 10.50
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u COMPRESSION WAVE VELOCITY TEST RESULTS - V_p

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.56	1.90	10.67			
5.81	5.15	11.70	1.02	1.76	582
9.09	8.43	13.47	1.77	3.35	528
12.37	11.71	15.73	2.26	2.30	983
18.96	18.31	21.10	5.37	4.75	1131
22.24	21.59	24.01	2.90	1.42	2041
25.53	24.87	27.00	2.99	0.87	3436
35.37	34.71	36.26	9.27	2.36	3932
38.65	37.99	39.42	3.15	0.82	3849
41.93	41.27	42.59	3.17	0.72	4406
45.21	44.55	45.77	3.19	0.70	4536
48.49	47.83	48.97	3.20	0.65	4909



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-26
Date: 07:20:20 11:28

Seismic Source: Beam
Seismic Offset (ft): 1.83
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u SHEAR WAVE VELOCITY TEST RESULTS - V_s

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.56	1.90	2.64			
5.81	5.15	5.47	2.83	6.88	411
9.09	8.43	8.63	3.16	8.66	365
12.37	11.71	11.85	3.23	7.23	446
15.68	15.03	15.14	3.28	6.30	521
18.96	18.31	18.40	3.26	8.18	399
22.24	21.59	21.67	3.27	5.46	599
25.53	24.87	24.94	3.27	4.30	760
28.81	28.15	28.21	3.27	3.41	959
32.09	31.43	31.48	3.28	3.46	946
35.37	34.71	34.76	3.28	5.19	631
38.65	37.99	38.04	3.28	5.88	558
41.93	41.27	41.31	3.28	5.25	624
45.21	44.55	44.59	3.28	3.20	1025
48.49	47.83	47.87	3.28	3.62	906
51.64	50.98	51.02	3.15	2.73	1154



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-27
Date: 07:20:20 12:56

SCPT_u POISSON'S RATIO RESULTS

Depth From (ft)	Depth To (ft)	Vs Interval Velocity (ft/s)	Vp Interval Velocity (ft/s)	Poisson's Ratio
1.80	5.09	531	754	0.01
5.09	8.37	509	754	0.08
8.37	11.65	472	1617	0.45
11.65	14.93	541	3609	0.49
14.93	18.21	893	3609	0.47
18.21	19.55	2093	5663	0.42



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-27
Date: 07:20:20 12:56

Seismic Source: Plate
Seismic Offset (ft): 12.08
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u COMPRESSION WAVE VELOCITY TEST RESULTS - V_p

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.46	1.80	12.21			
9.02	8.37	14.69	2.48	3.29	754
12.30	11.65	16.78	2.09	1.29	1617
18.87	18.21	21.85	5.07	1.41	3609
20.21	19.55	22.98	1.13	0.20	5663



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Sounding ID: CPT-27
Date: 07:20:20 12:56

Seismic Source: Beam
Seismic Offset (ft): 1.83
Source Depth (ft): 0.00
Geophone Offset (ft): 0.66

SCPT_u SHEAR WAVE VELOCITY TEST RESULTS - V_s

Tip Depth (ft)	Geophone Depth (ft)	Ray Path (ft)	Ray Path Difference (ft)	Travel Time Interval (ms)	Interval Velocity (ft/s)
2.46	1.80	2.57			
5.74	5.09	5.40	2.83	5.34	531
9.02	8.37	8.56	3.16	6.21	509
12.30	11.65	11.79	3.23	6.83	472
15.58	14.93	15.04	3.25	6.01	541
18.87	18.21	18.30	3.26	3.65	893
20.21	19.55	19.64	1.34	0.64	2093

Seismic Cone Penetration Wave Traces



Job No: 20-52-21054
Cone: 552:T1500F15U500

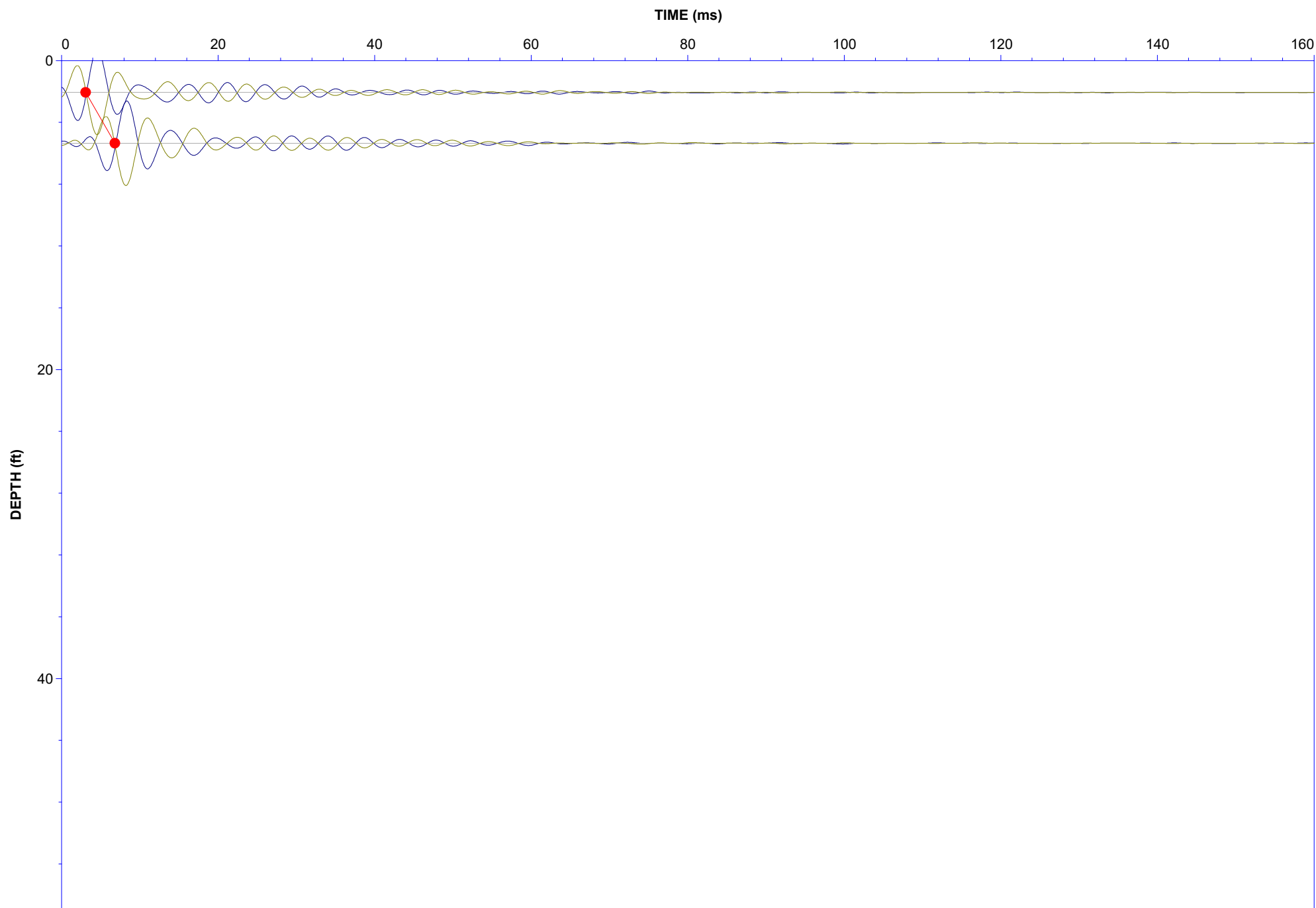
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-200 Hz

Hole: CPT-01

Date: 07:15:20 08:09





Job No: 20-52-21054
Cone: 552:T1500F15U500

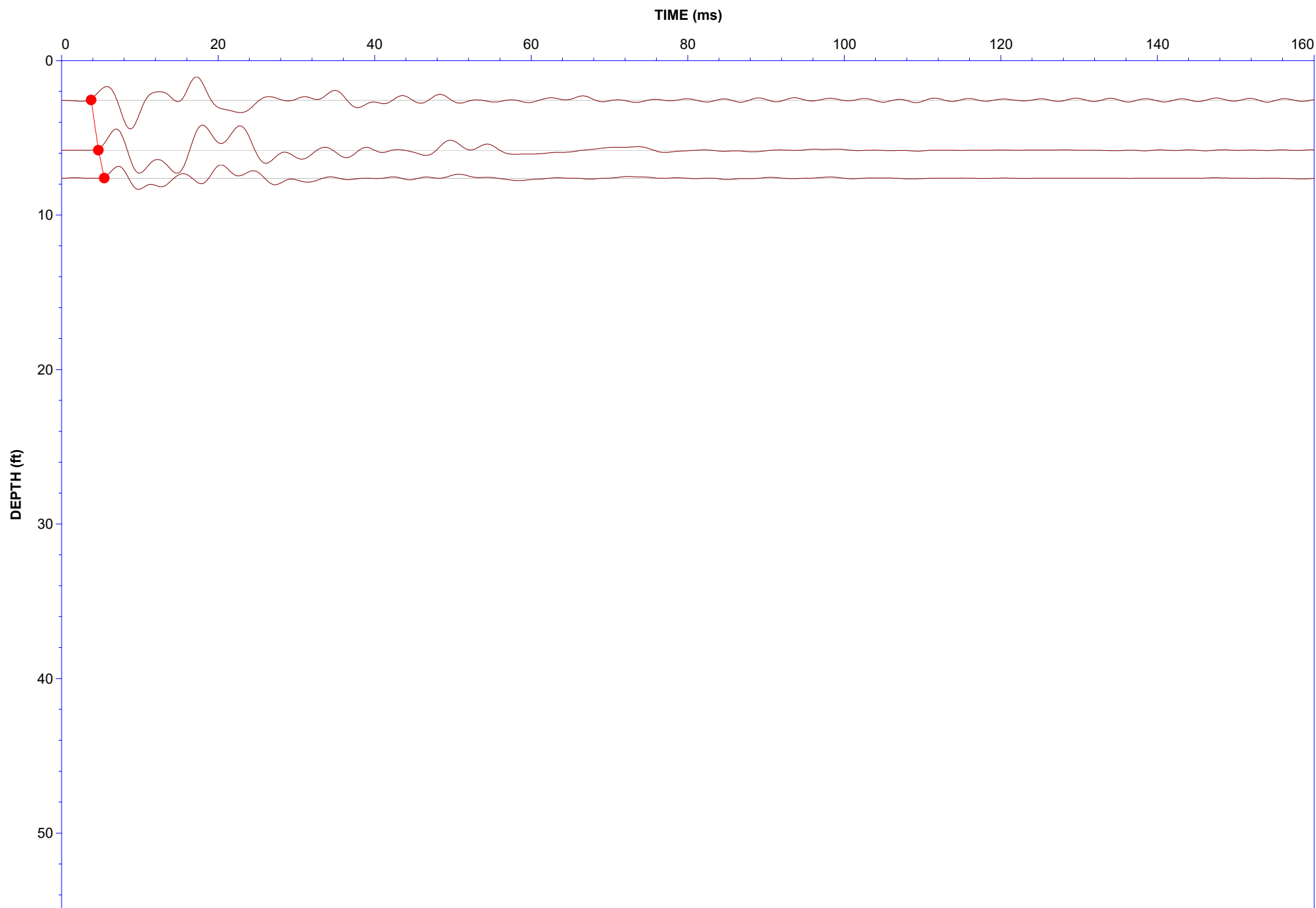
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-500 Hz

Hole: CPT-03

Date: 07:15:20 08:46





Job No: 20-52-21054
Cone: 552:T1500F15U500

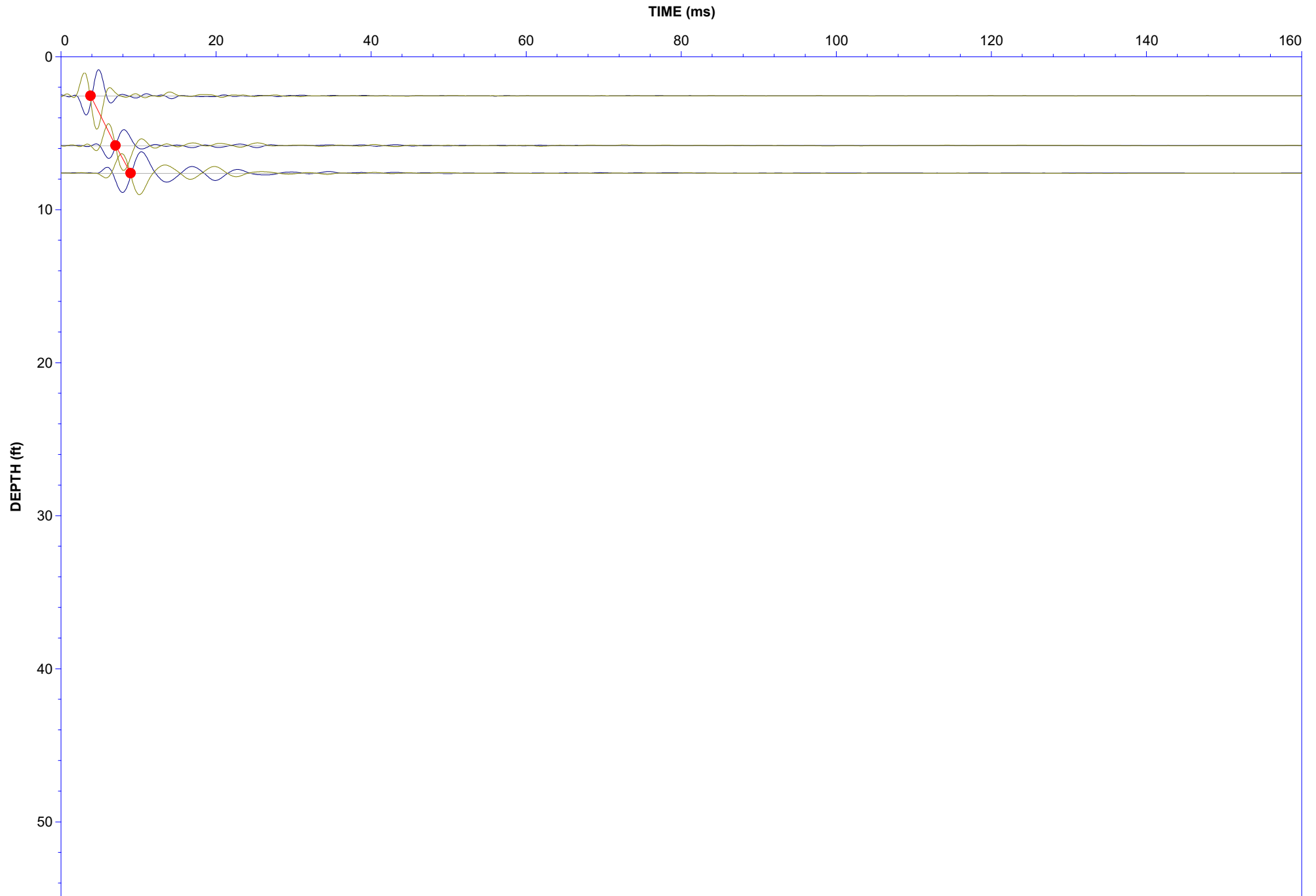
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-500 Hz

Hole: CPT-03

Date: 07:15:20 08:46





Job No: 20-52-21054
Cone: 552:T1500F15U500

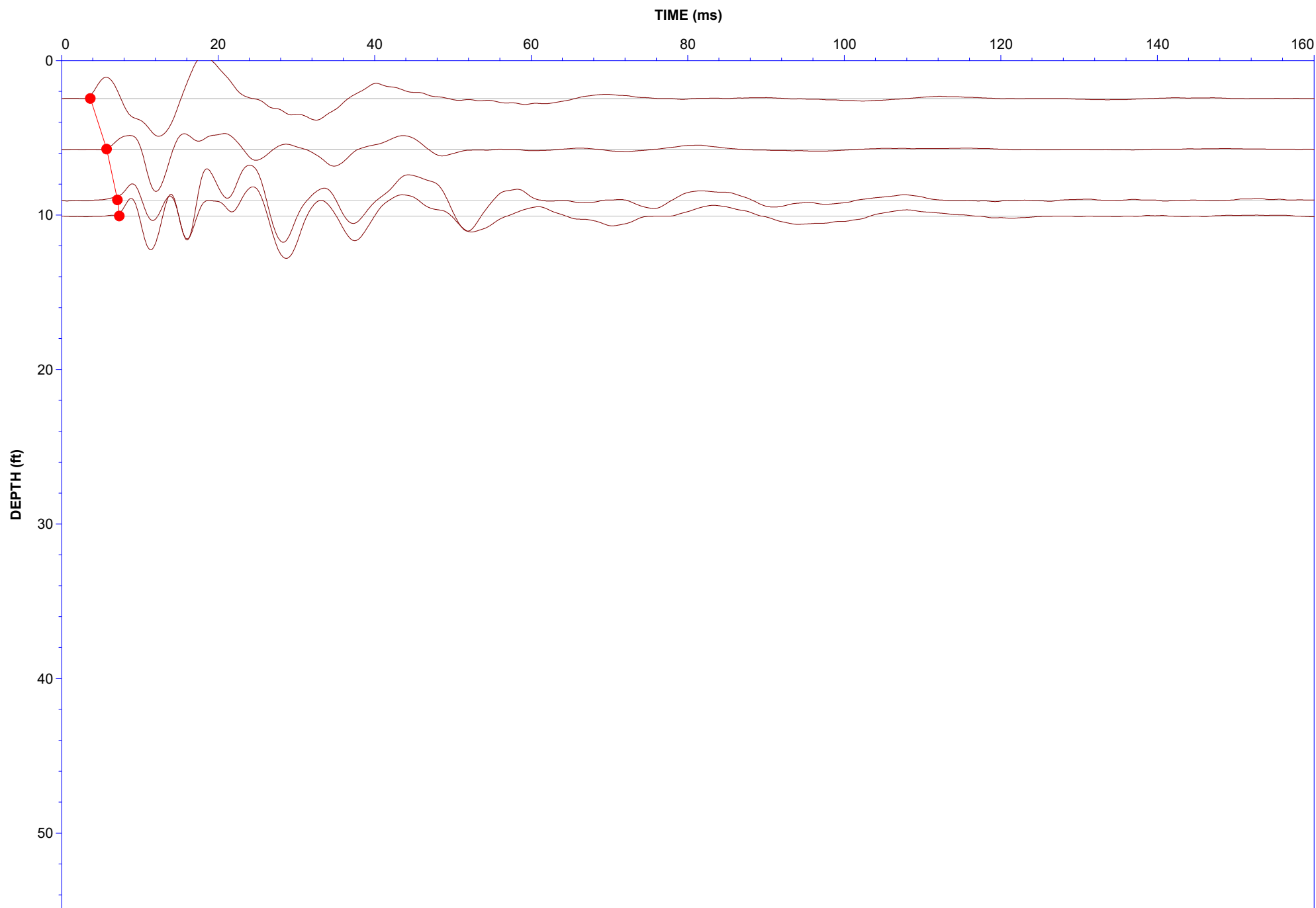
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-500 Hz

Hole: CPT-05

Date: 07:15:20 09:23





Job No: 20-52-21054
Cone: 552:T1500F15U500

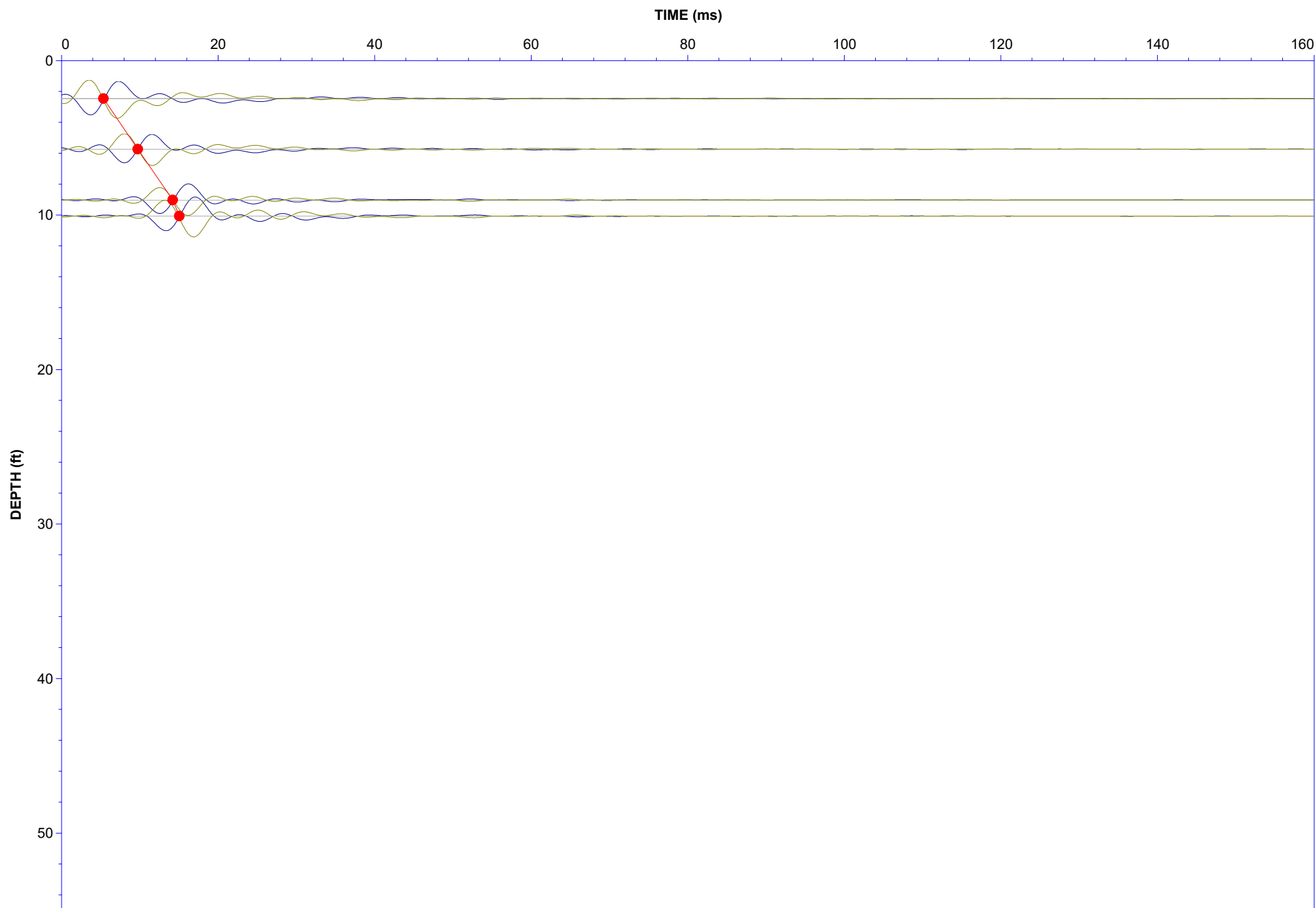
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-200 Hz

Hole: CPT-05

Date: 07:15:20 09:23





Job No: 20-52-21054
Cone: 552:T1500F15U500

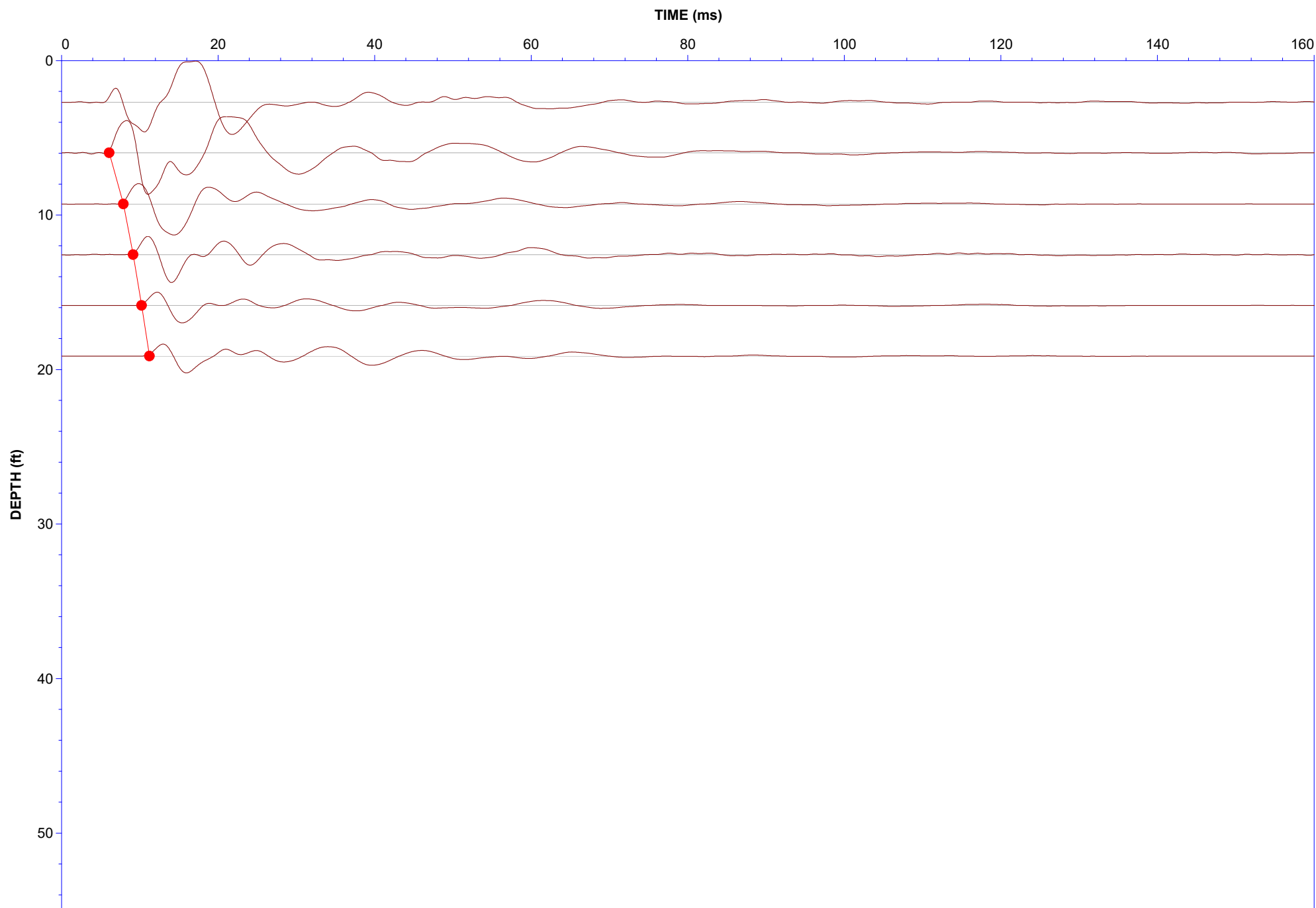
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-500 Hz

Hole: CPT-07

Date: 07:15:20 10:16





Job No: 20-52-21054
Cone: 552:T1500F15U500

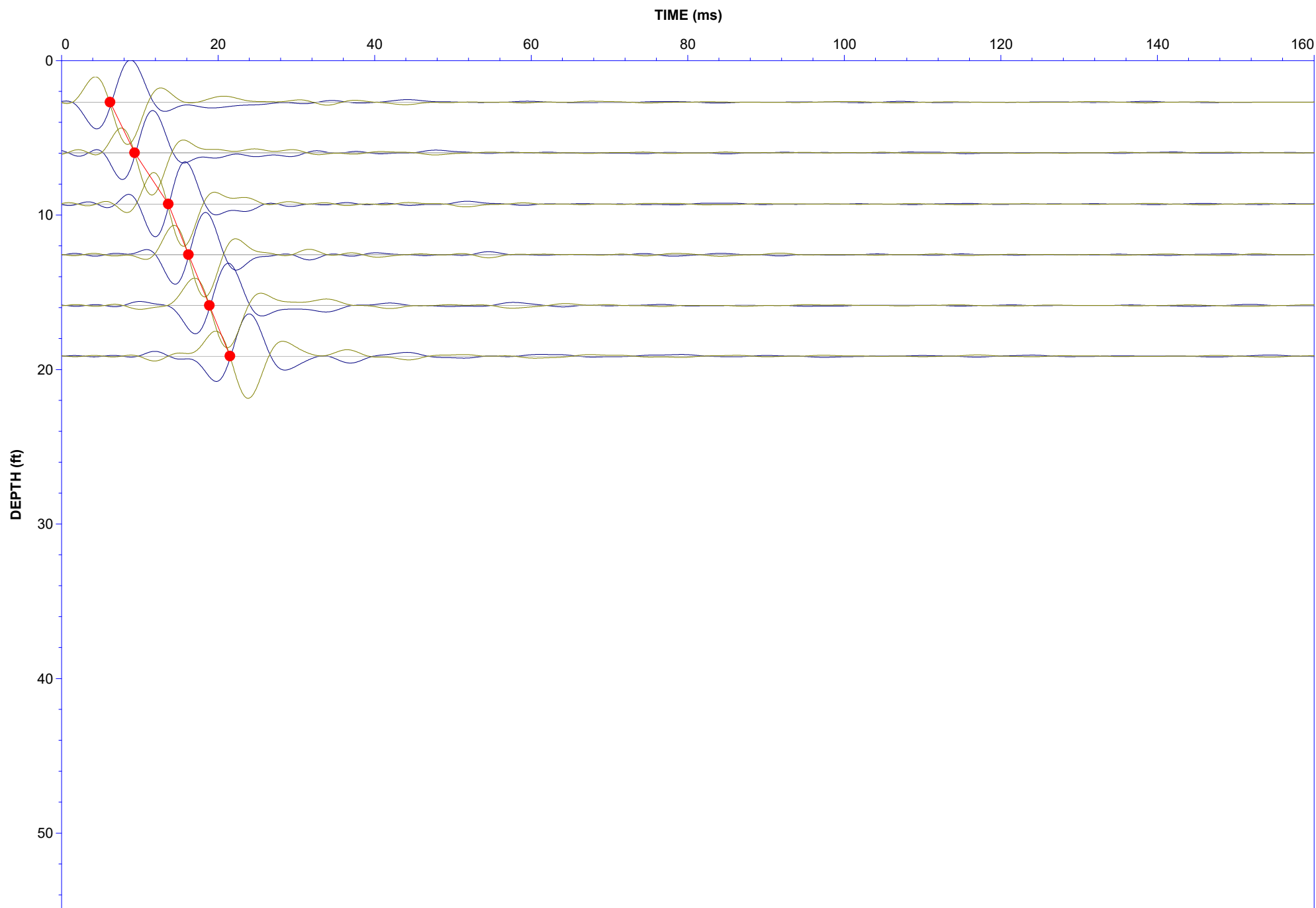
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-200 Hz

Hole: CPT-07

Date: 07:15:20 10:16





Job No: 20-52-21054
Cone: 552:T1500F15U500

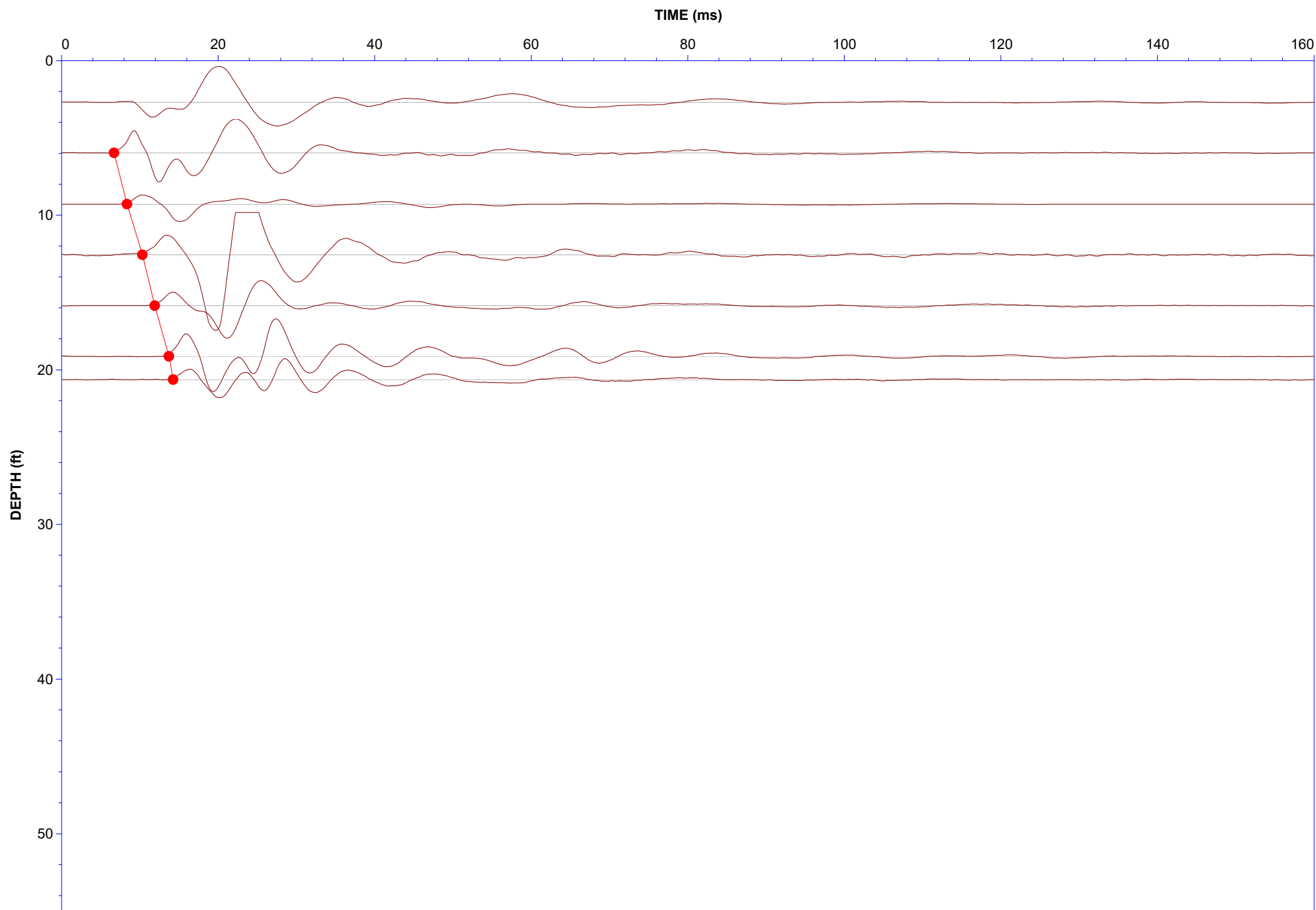
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-500 Hz

Hole: CPT-08

Date: 07:15:20 11:09





Job No: 20-52-21054
Cone: 552:T1500F15U500

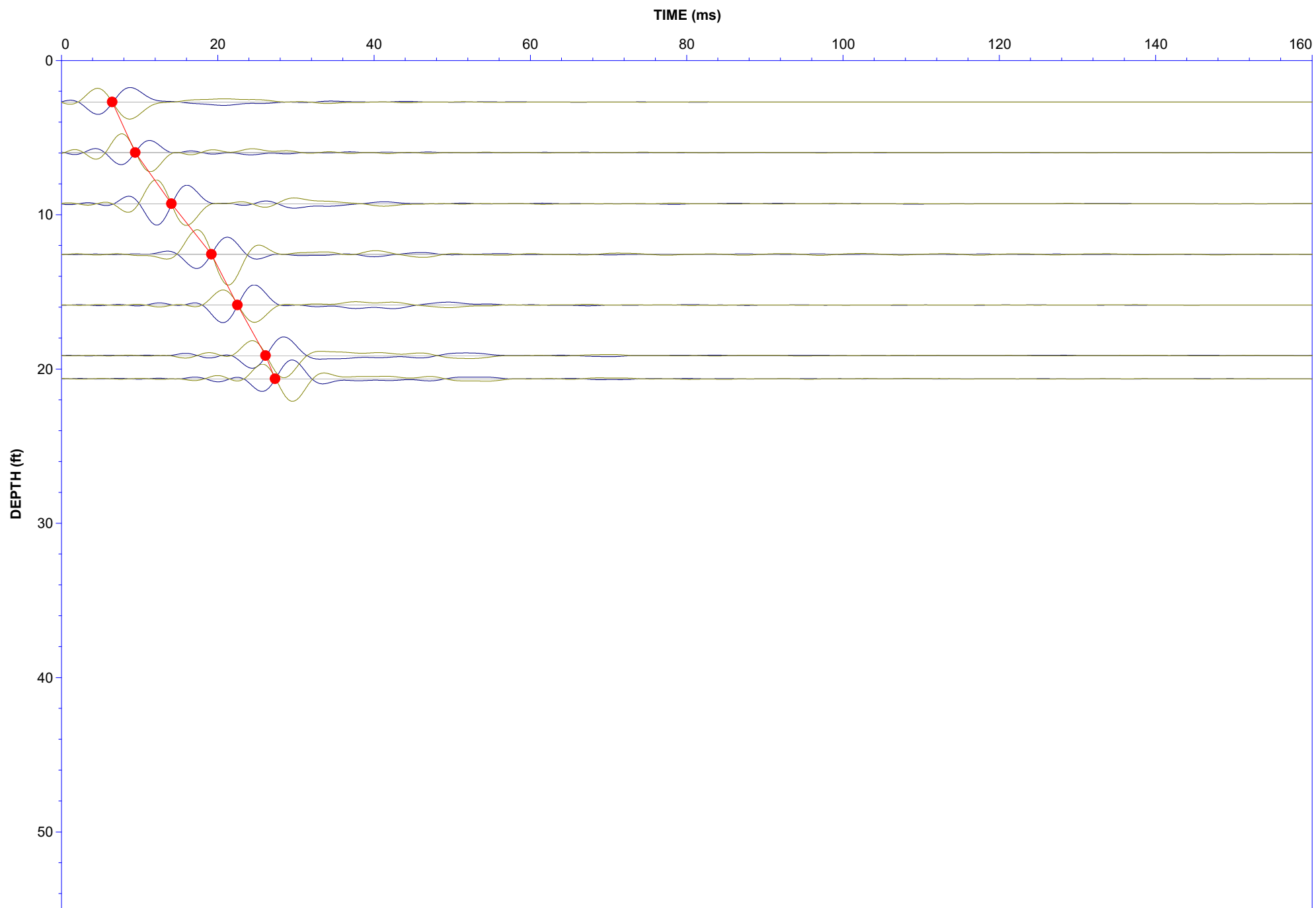
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-200 Hz

Hole: CPT-08

Date: 07:15:20 11:09





Job No: 20-52-21054
Cone: 552:T1500F15U500

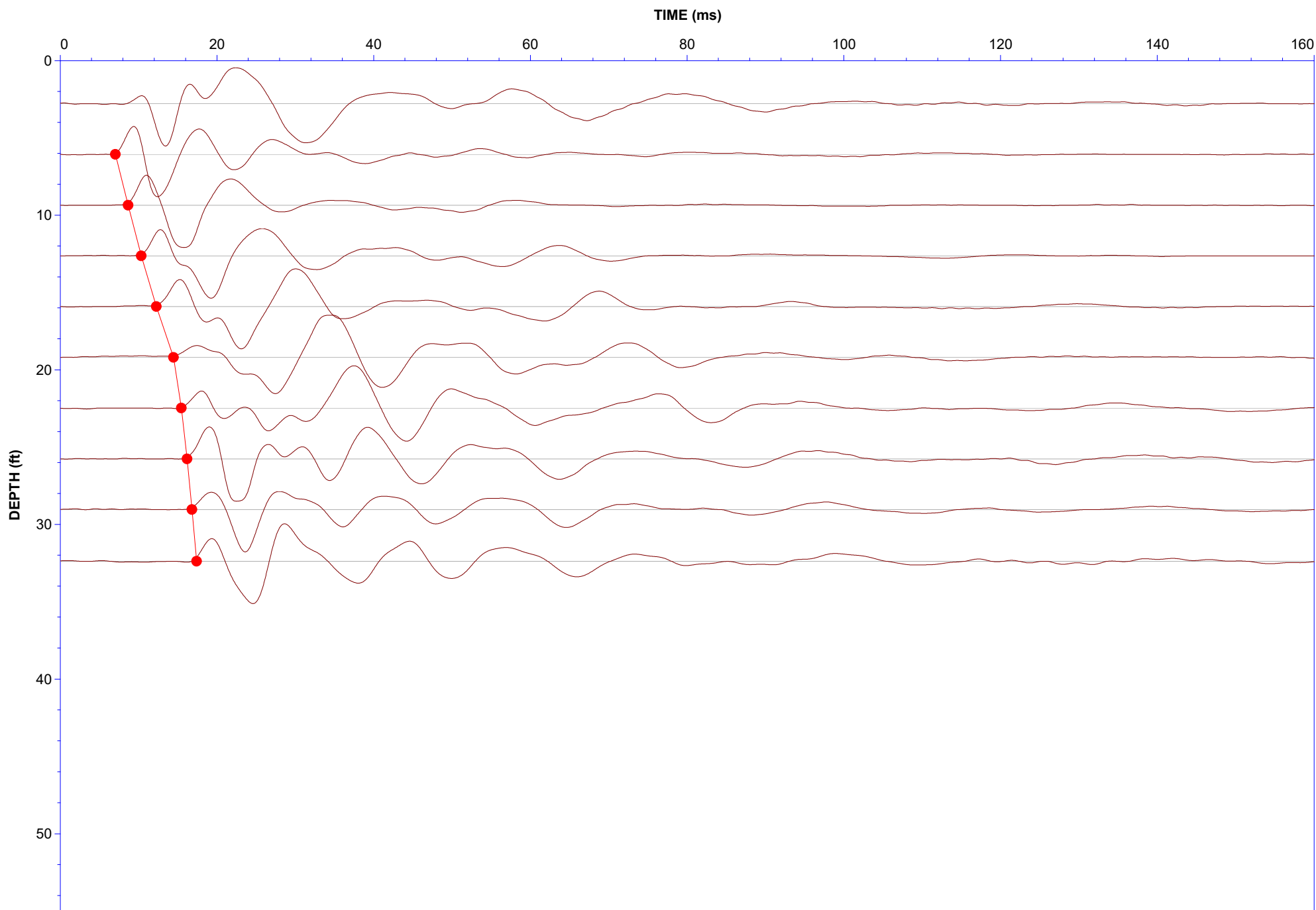
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-500 Hz

Hole: CPT-09

Date: 07:15:20 12:02





Job No: 20-52-21054
Cone: 552:T1500F15U500

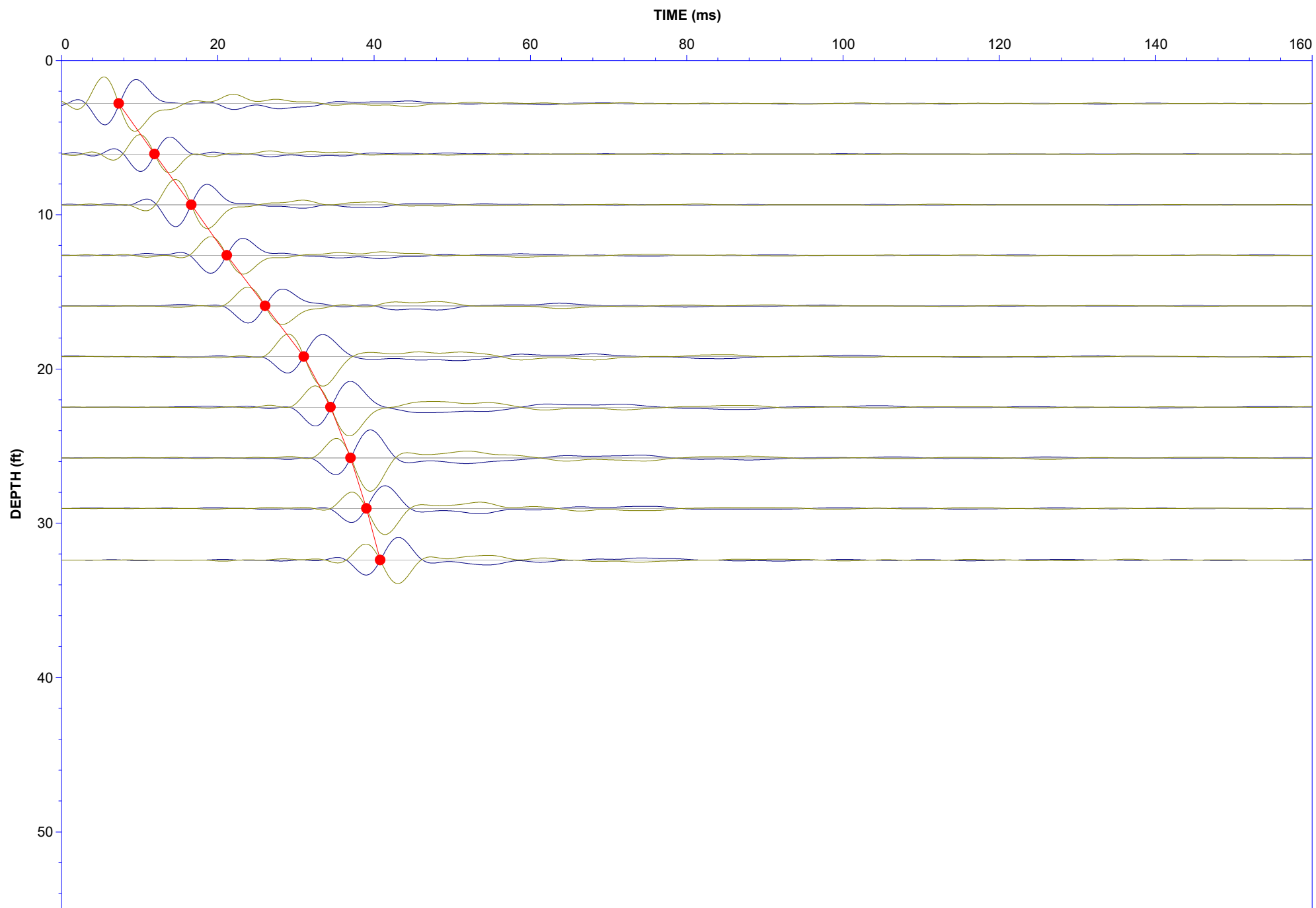
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-200 Hz

Hole: CPT-09

Date: 07:15:20 12:02





Job No: 20-52-21054
Cone: 552:T1500F15U500

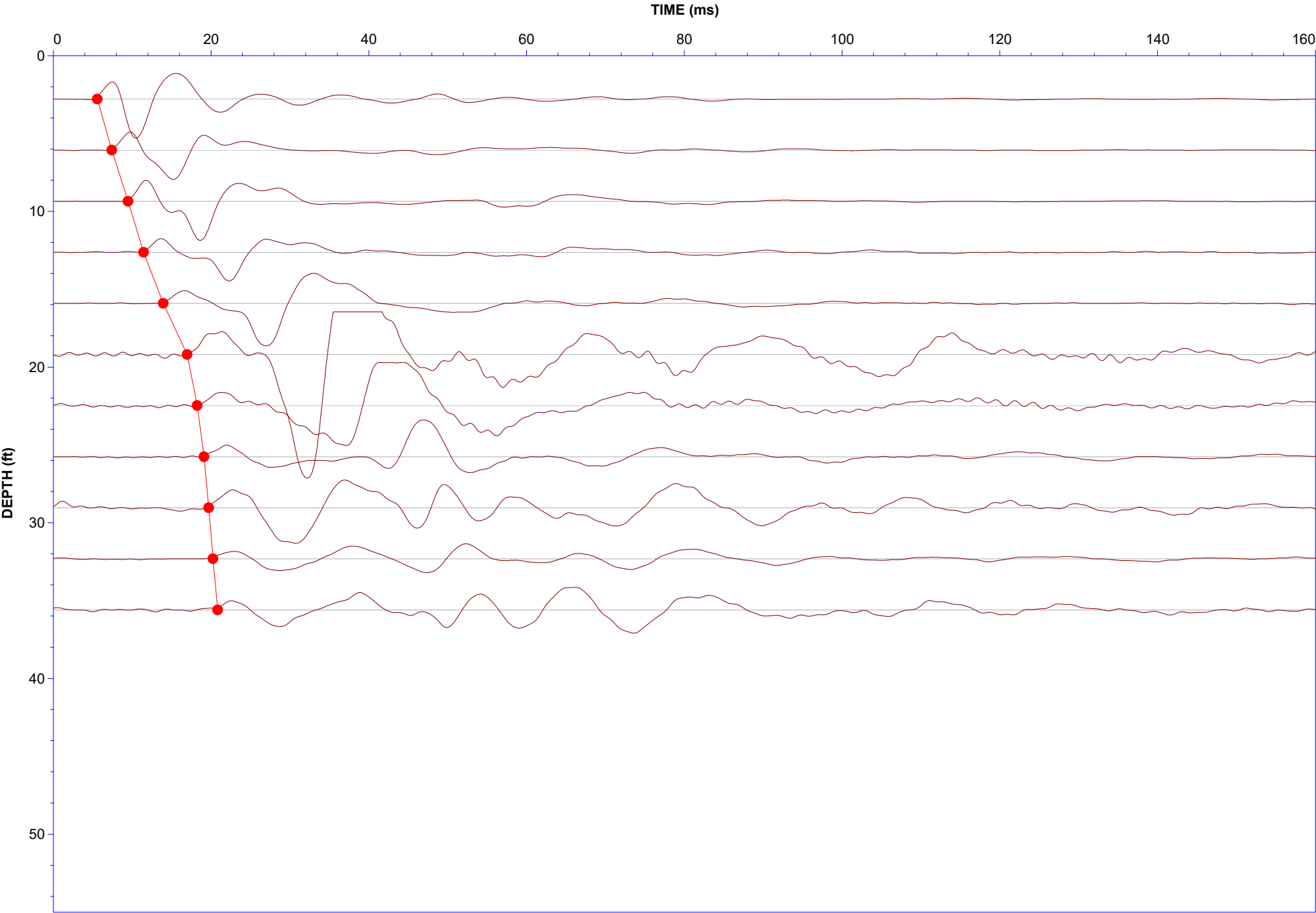
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-500 Hz

Hole: CPT-10

Date: 07:15:20 13:15





Job No: 20-52-21054
Cone: 552:T1500F15U500

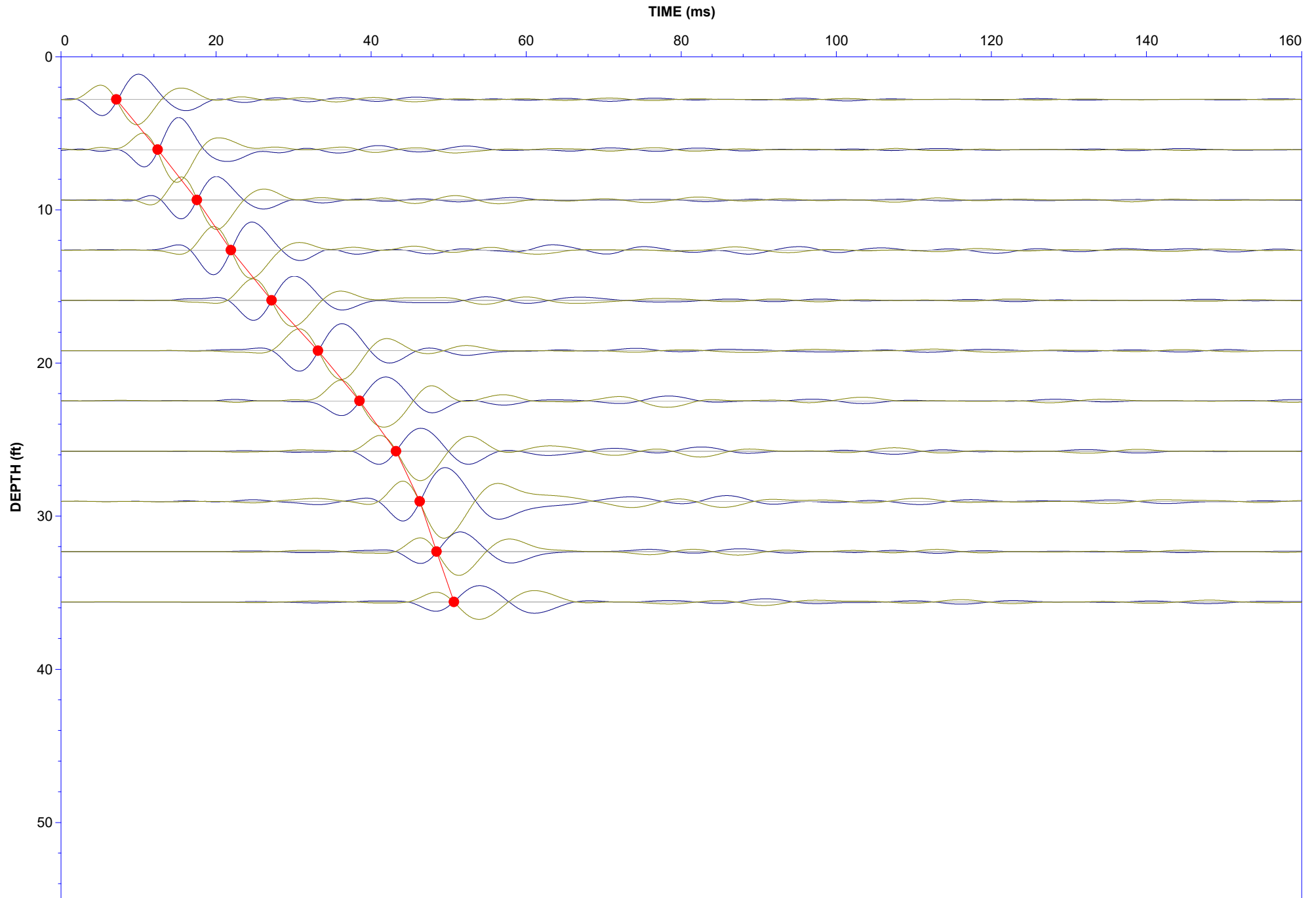
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-200 Hz

Hole: CPT-10

Date: 07:15:20 13:15





Job No: 20-52-21054
Cone: 552:T1500F15U500

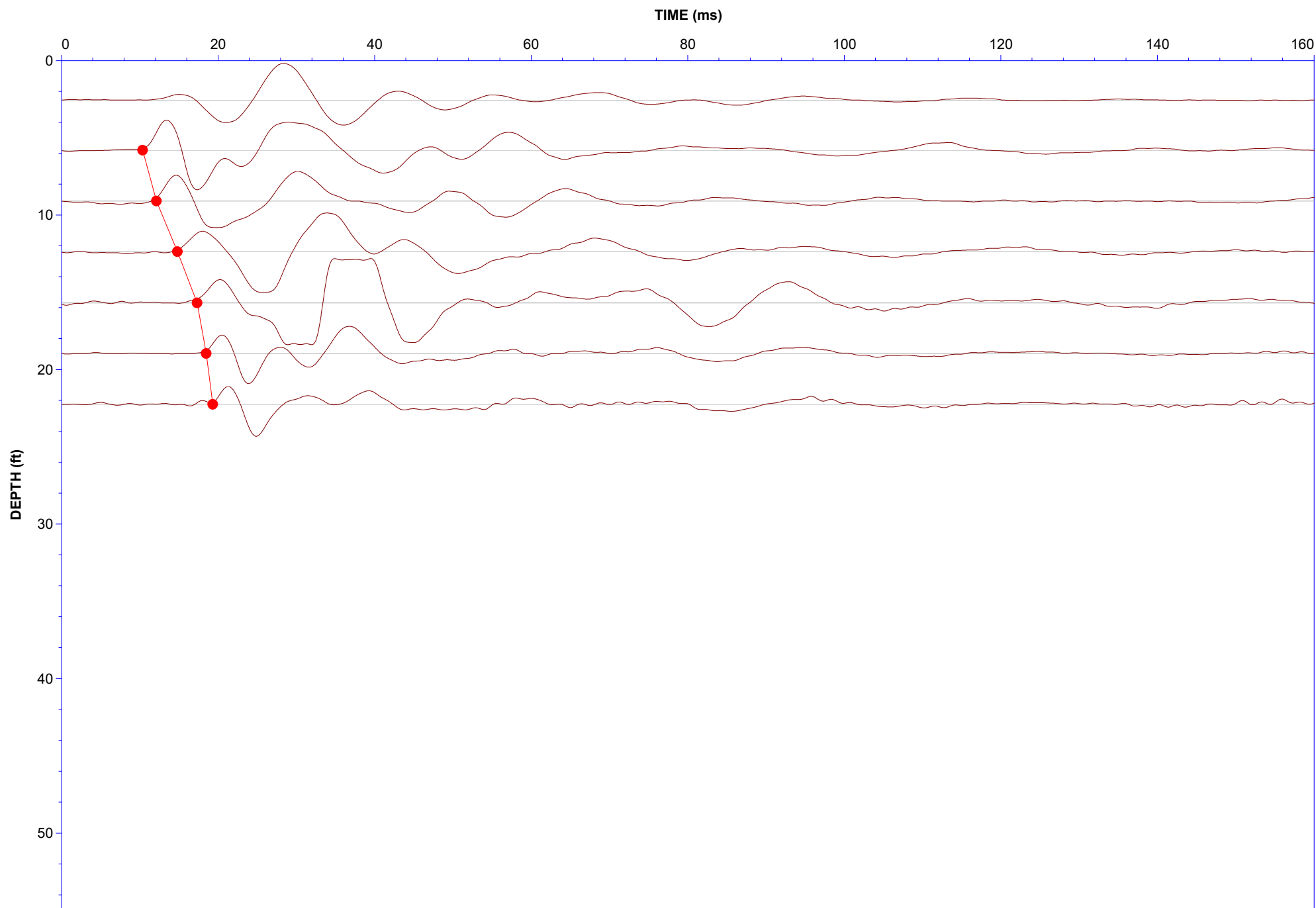
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-500 Hz

Hole: CPT-11

Date: 07:15:20 15:02





Job No: 20-52-21054
Cone: 552:T1500F15U500

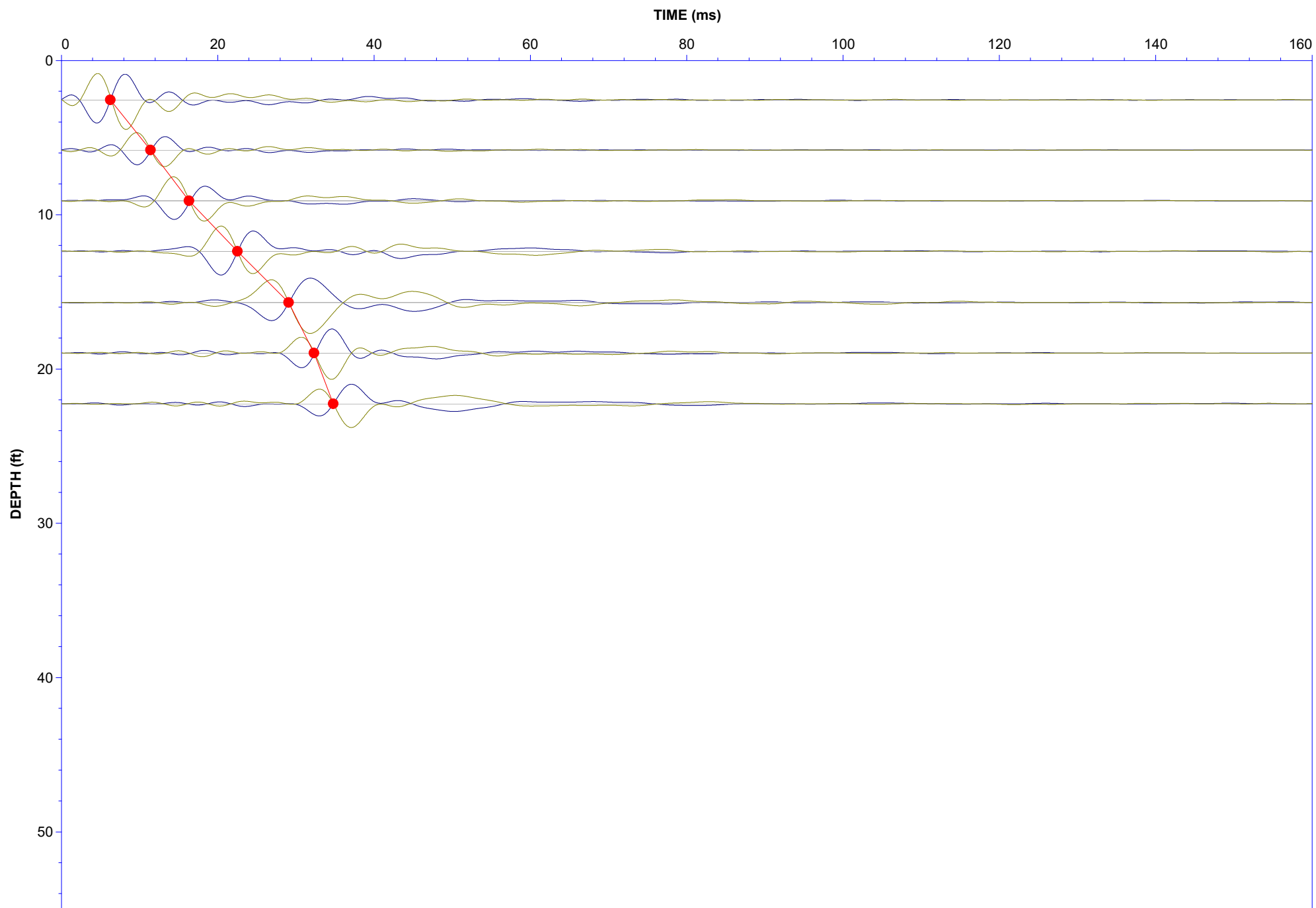
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-200 Hz

Hole: CPT-11

Date: 07:15:20 15:02





Job No: 20-52-21054
Cone: 552:T1500F15U500

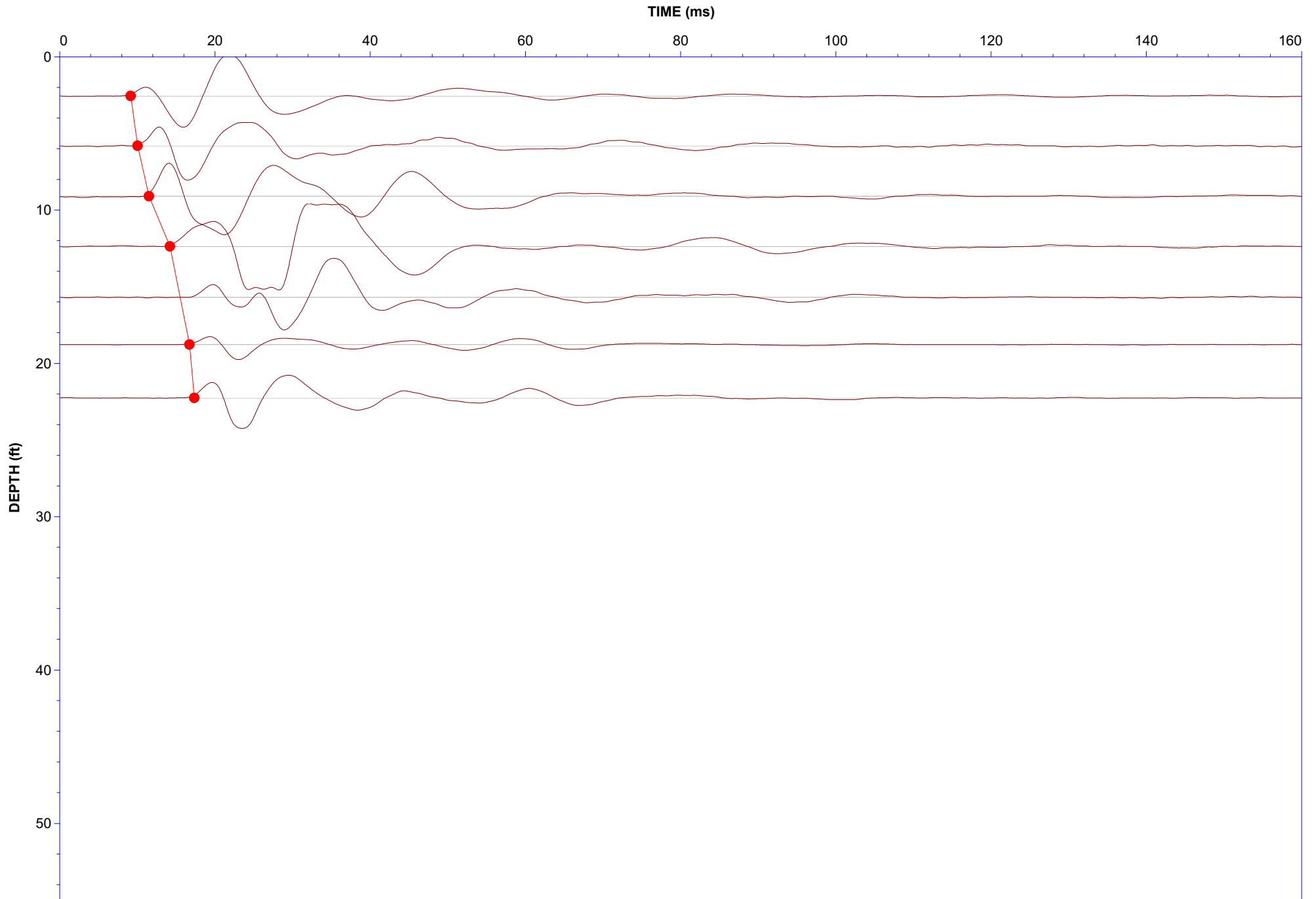
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-500 Hz

Hole: CPT-12

Date: 07:16:20 08:09





Job No: 20-52-21054
Cone: 552:T1500F15U500

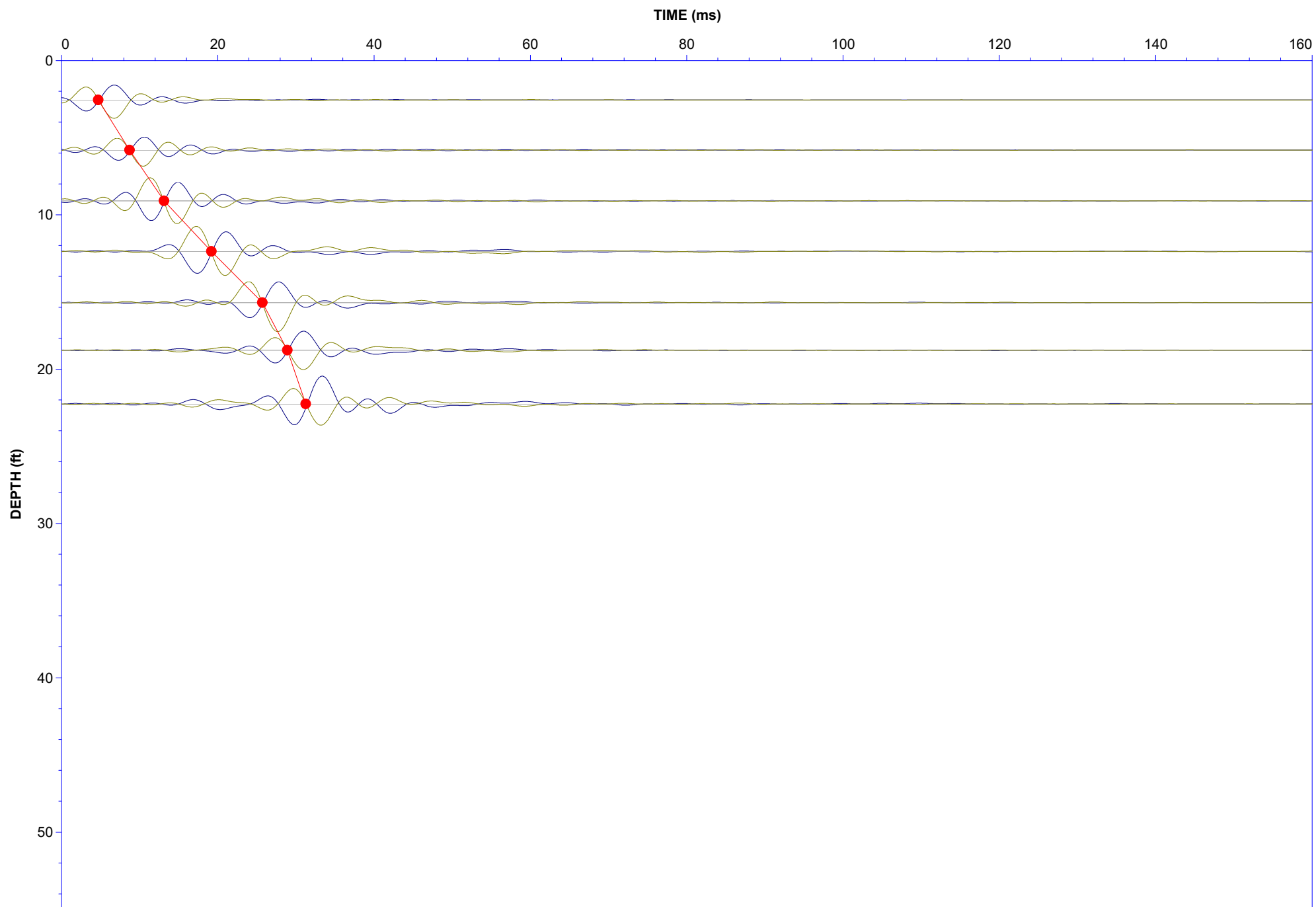
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-200 Hz

Hole: CPT-12

Date: 07:16:20 08:09





Job No: 20-52-21054
Cone: 552:T1500F15U500

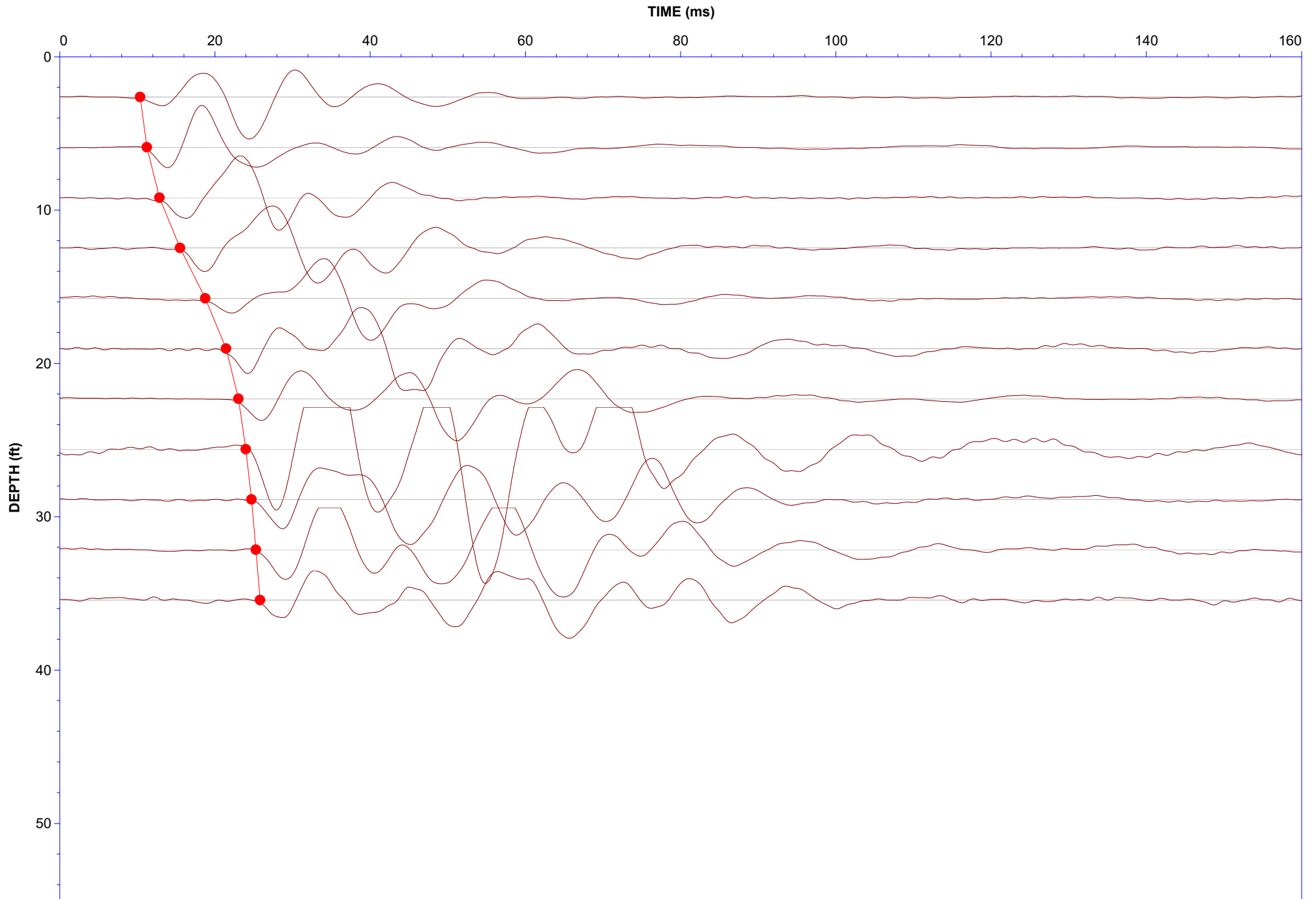
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-500 Hz

Hole: CPT-13

Date: 07:16:20 09:23





Job No: 20-52-21054
Cone: 552:T1500F15U500

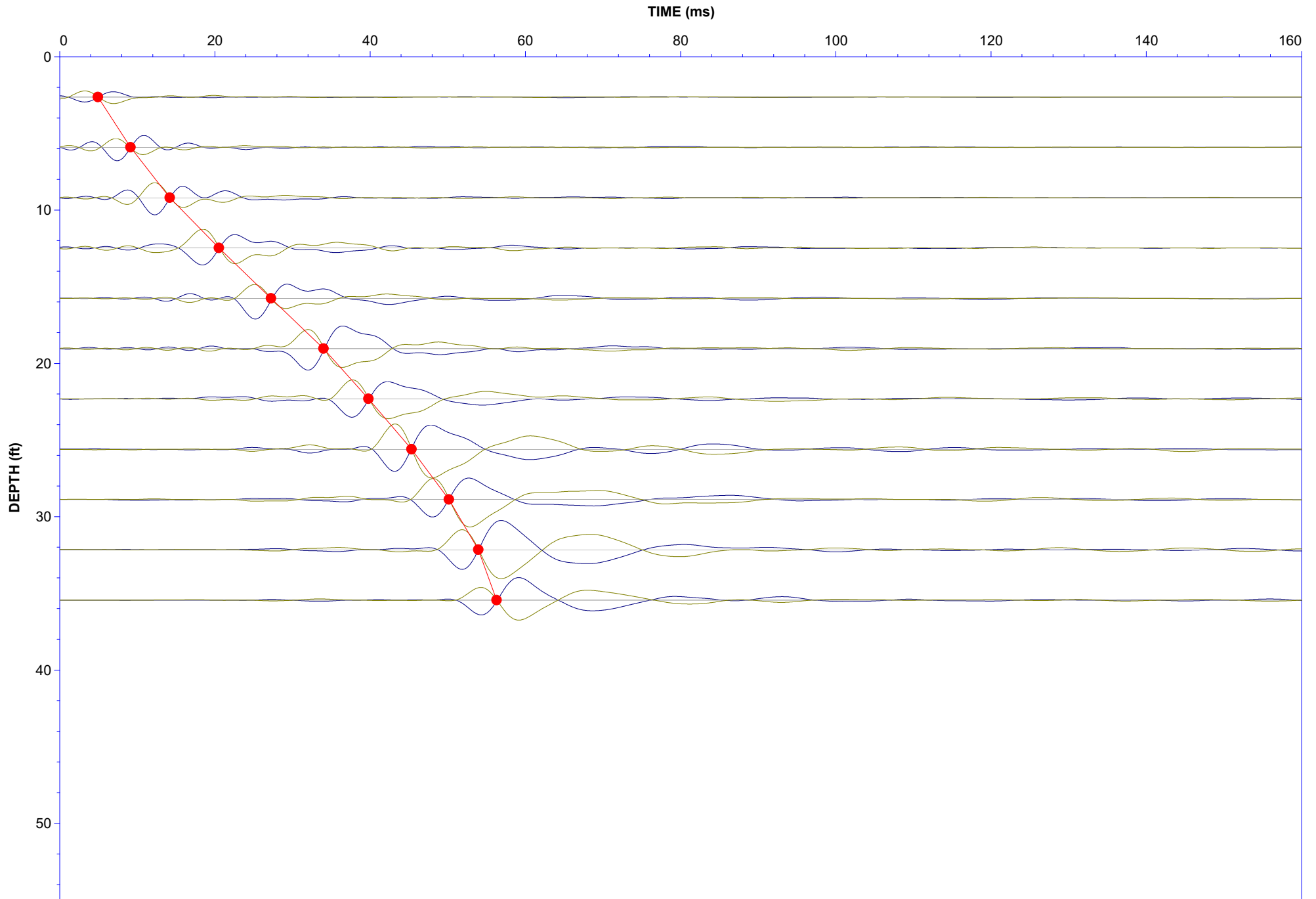
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-200 Hz

Hole: CPT-13

Date: 07:16:20 09:23





Job No: 20-52-21054
Cone: 552:T1500F15U500

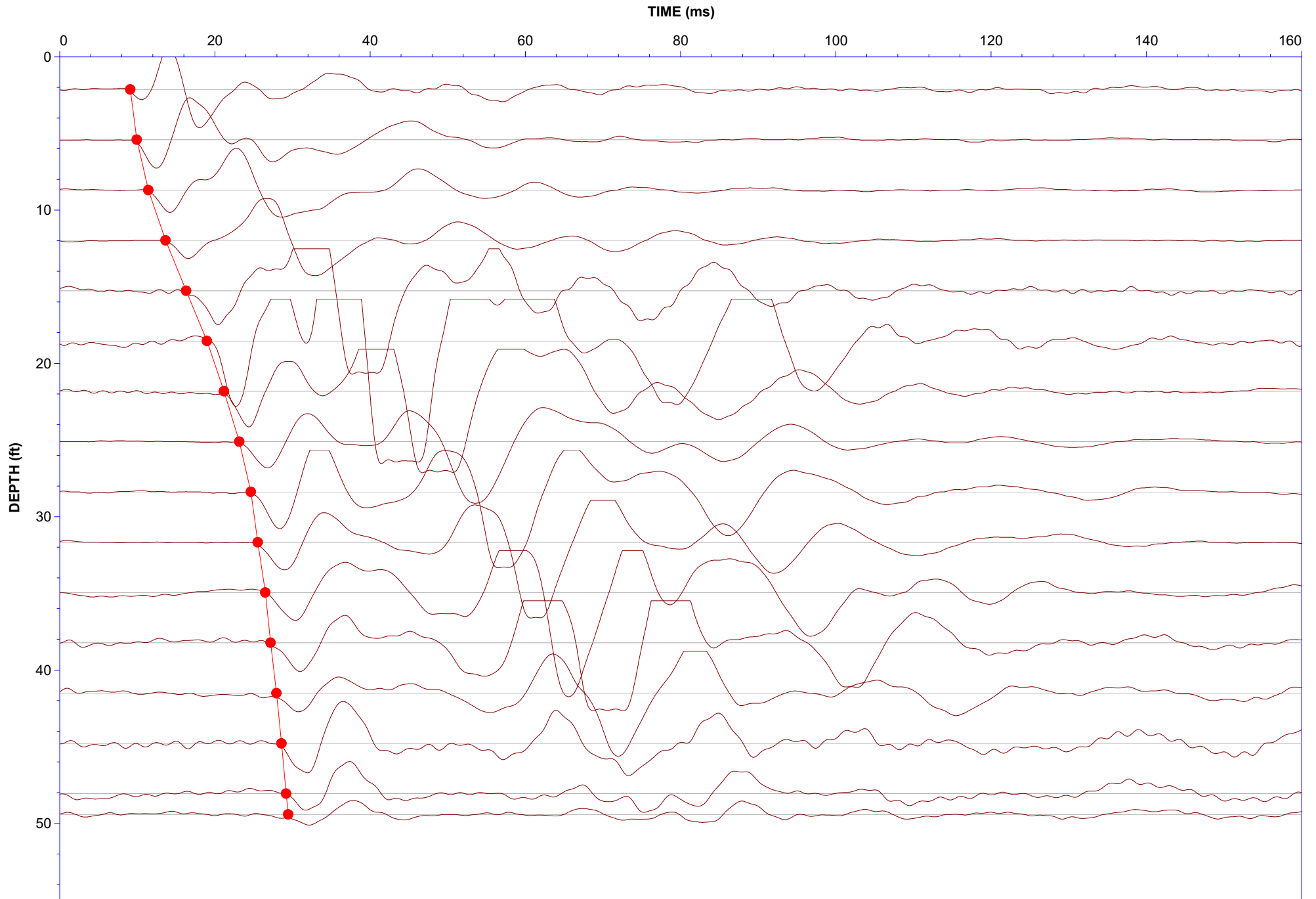
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-500 Hz

Hole: CPT-14

Date: 07:16:20 10:34





Job No: 20-52-21054
Cone: 552:T1500F15U500

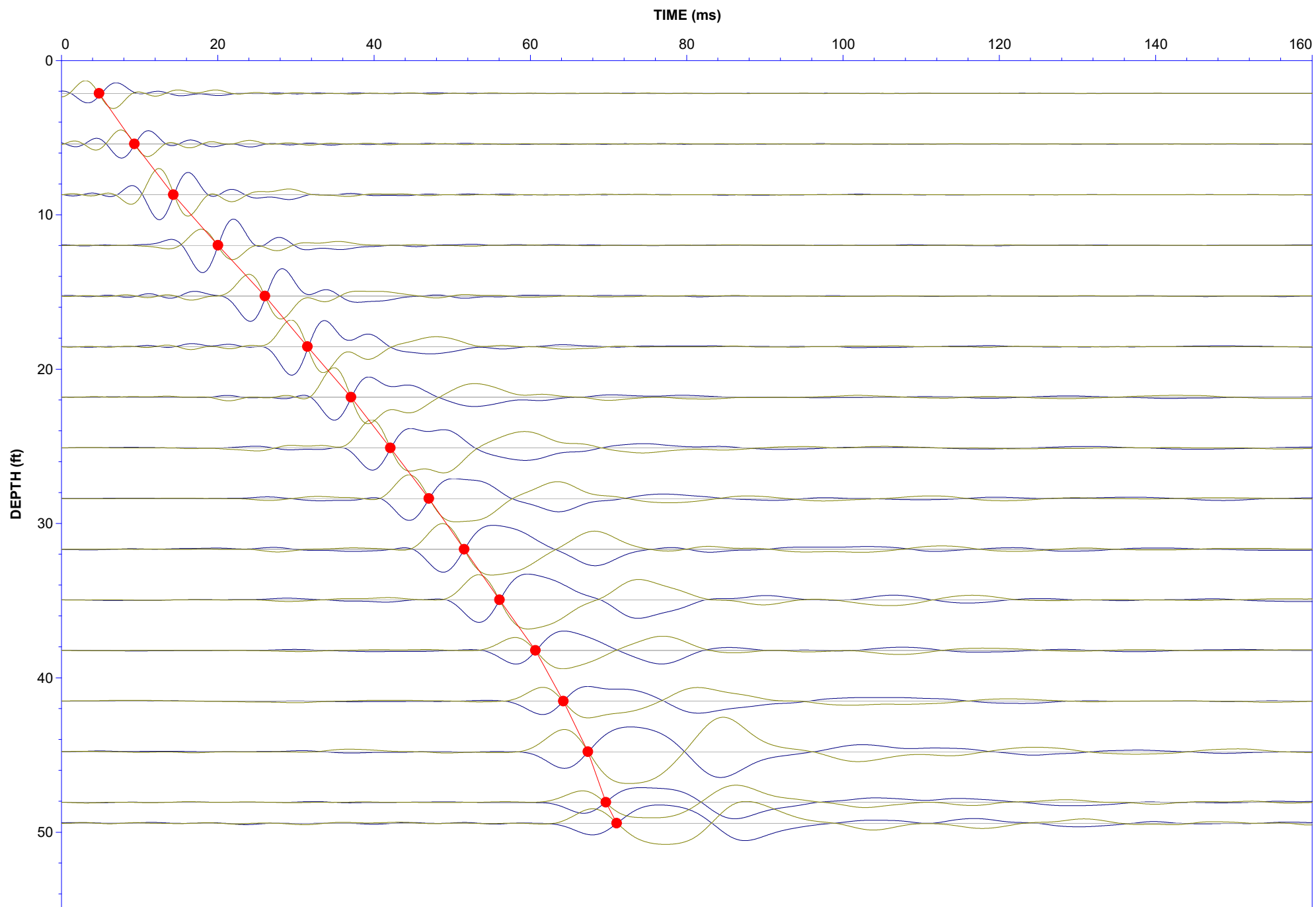
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-200 Hz

Hole: CPT-14

Date: 07:16:20 10:34





Job No: 20-52-21054
Cone: 552:T1500F15U500

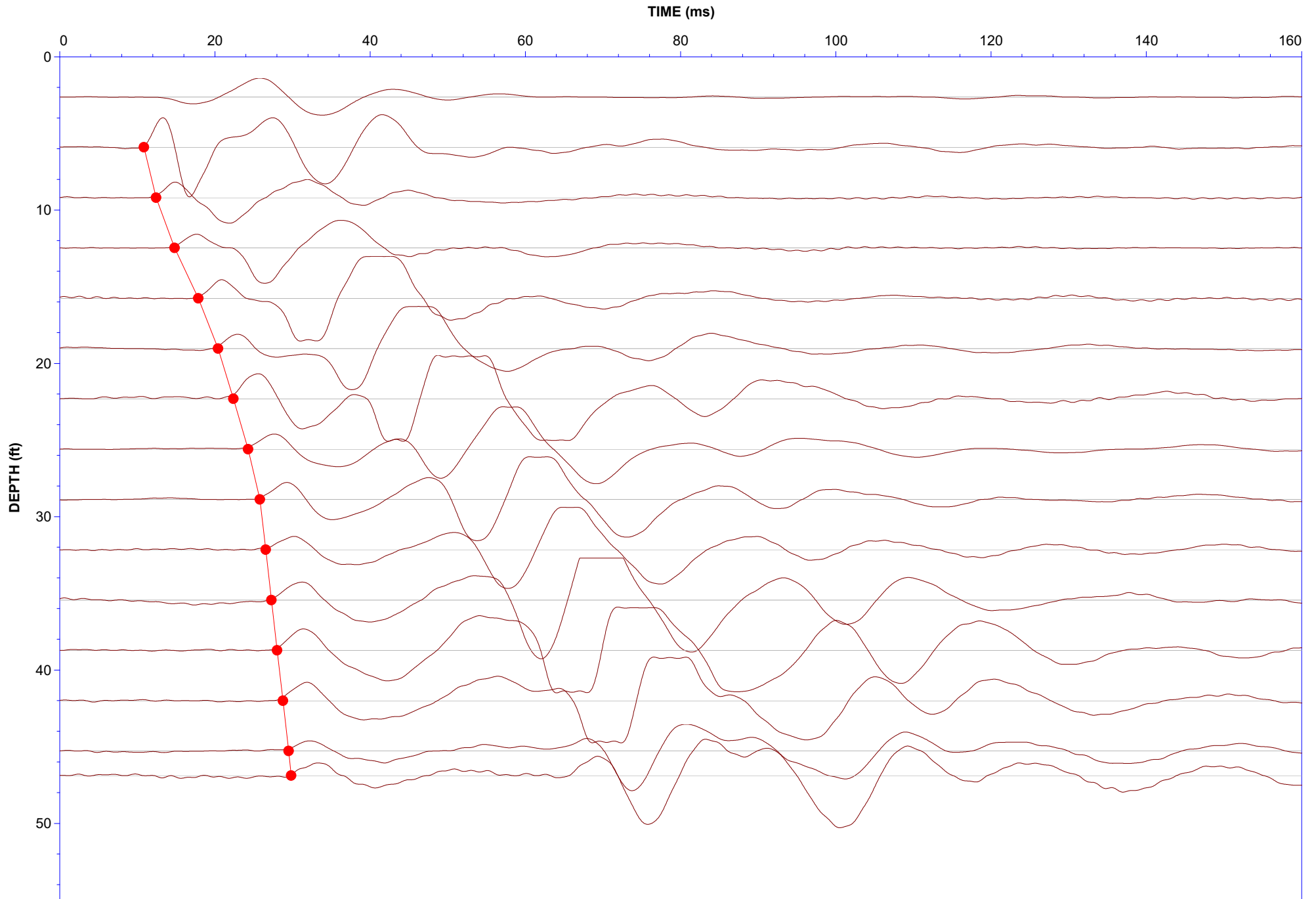
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-500 Hz

Hole: CPT-15

Date: 07:16:20 12:28





Job No: 20-52-21054
Cone: 552:T1500F15U500

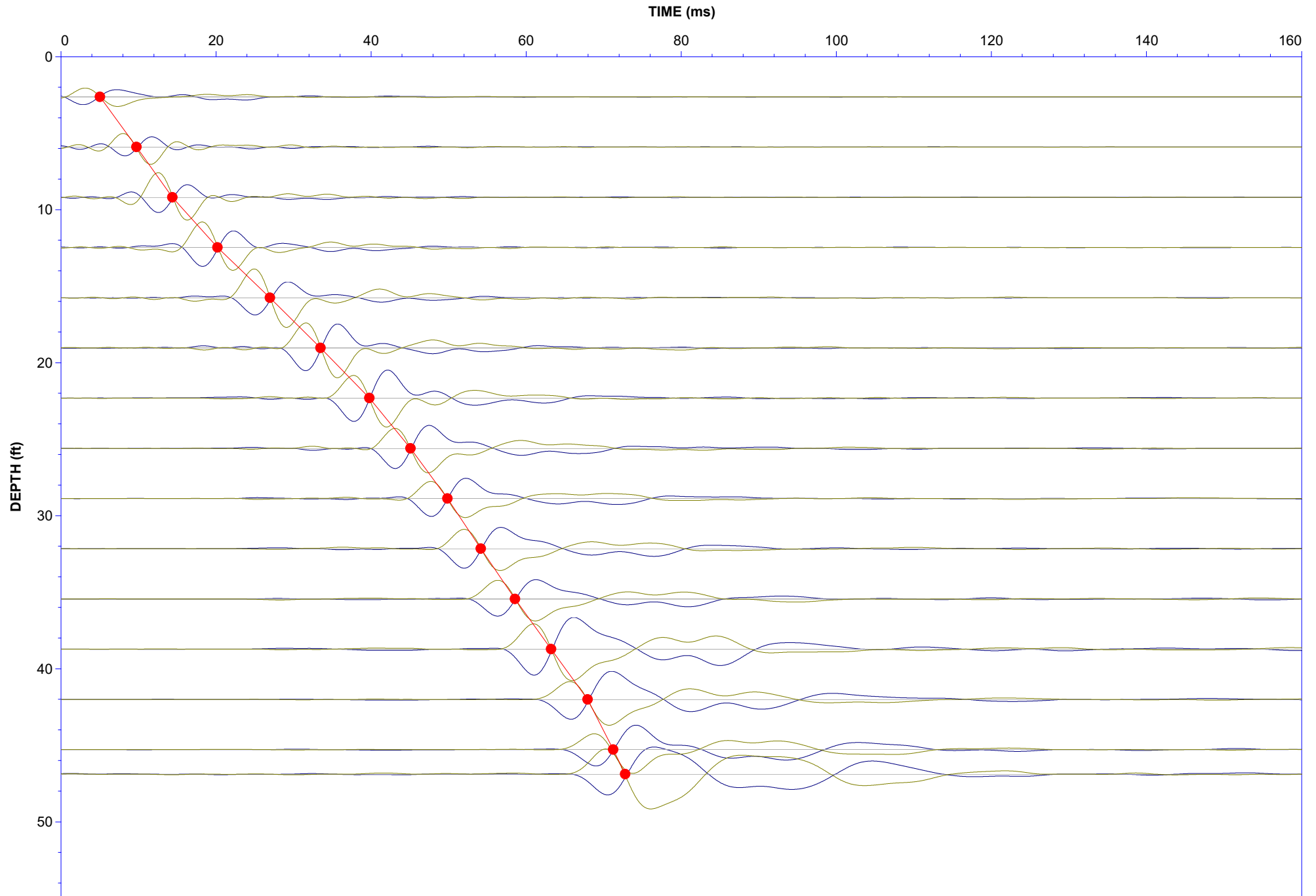
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-200 Hz

Hole: CPT-15

Date: 07:16:20 12:28





Job No: 20-52-21054
Cone: 552:T1500F15U500

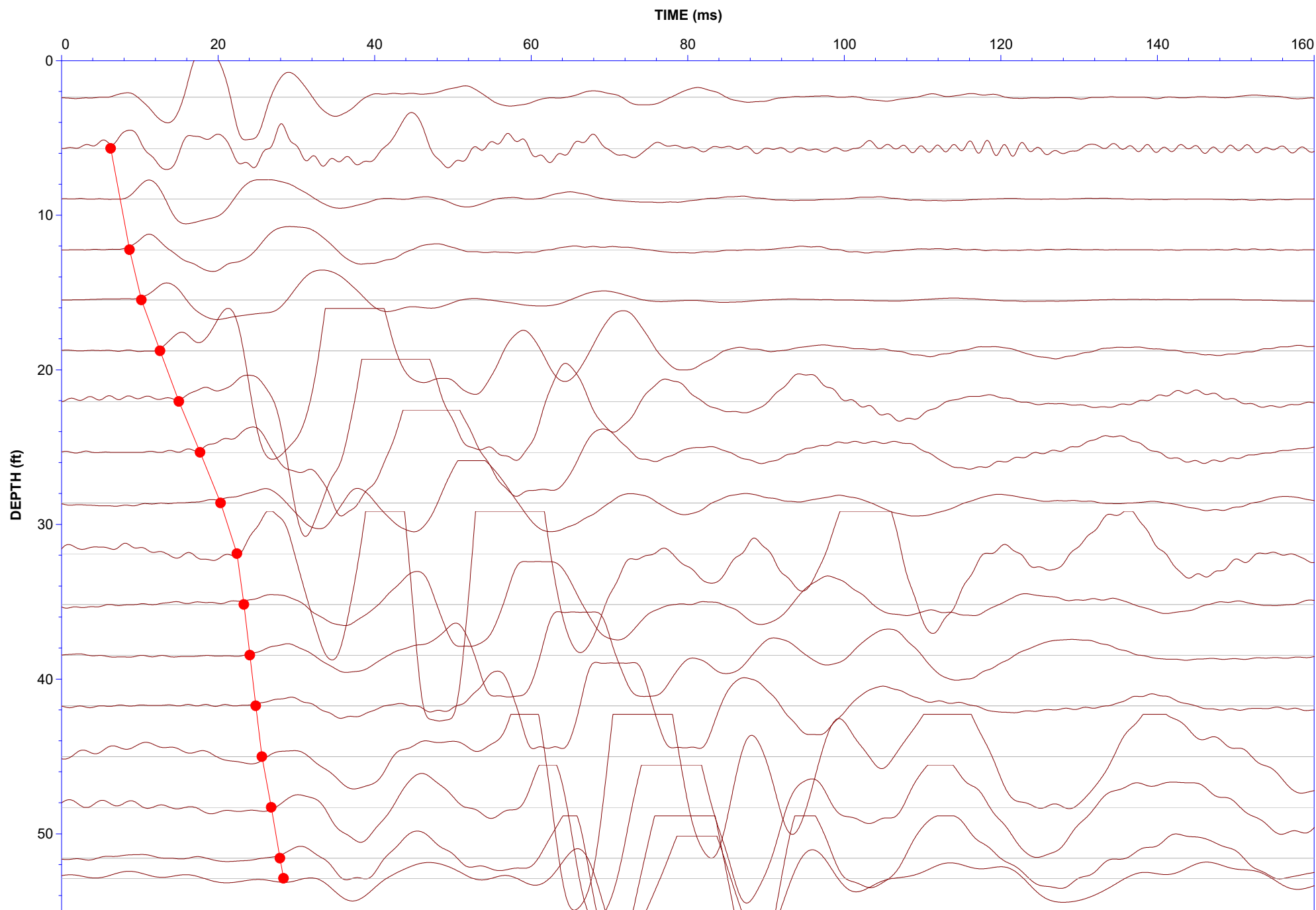
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-500 Hz

Hole: CPT-16

Date: 07:14:20 14:26





Job No: 20-52-21054
Cone: 552:T1500F15U500

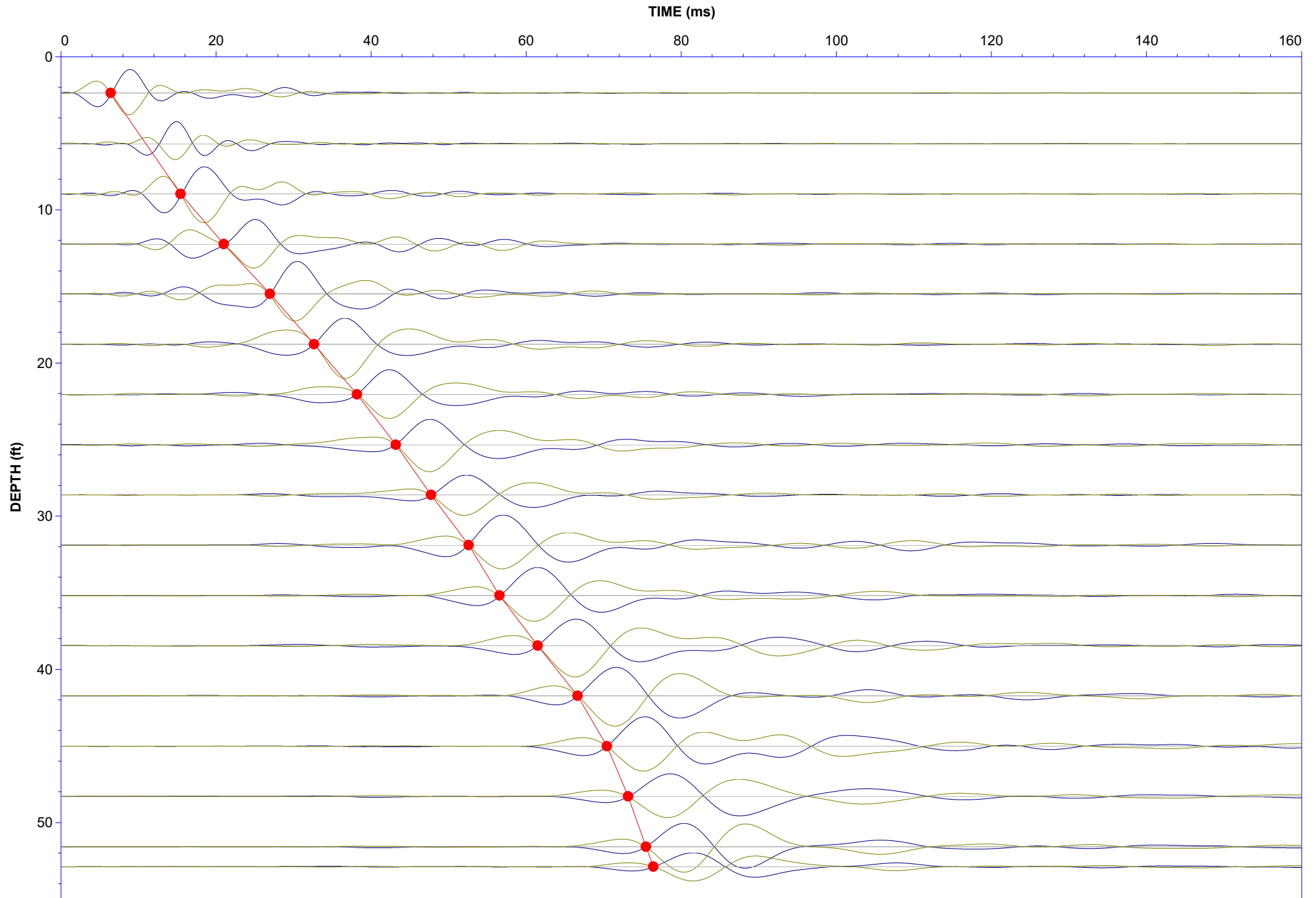
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-200 Hz

Hole: CPT-16

Date: 07:14:20 14:26





Job No: 20-52-21054
Cone: 552:T1500F15U500

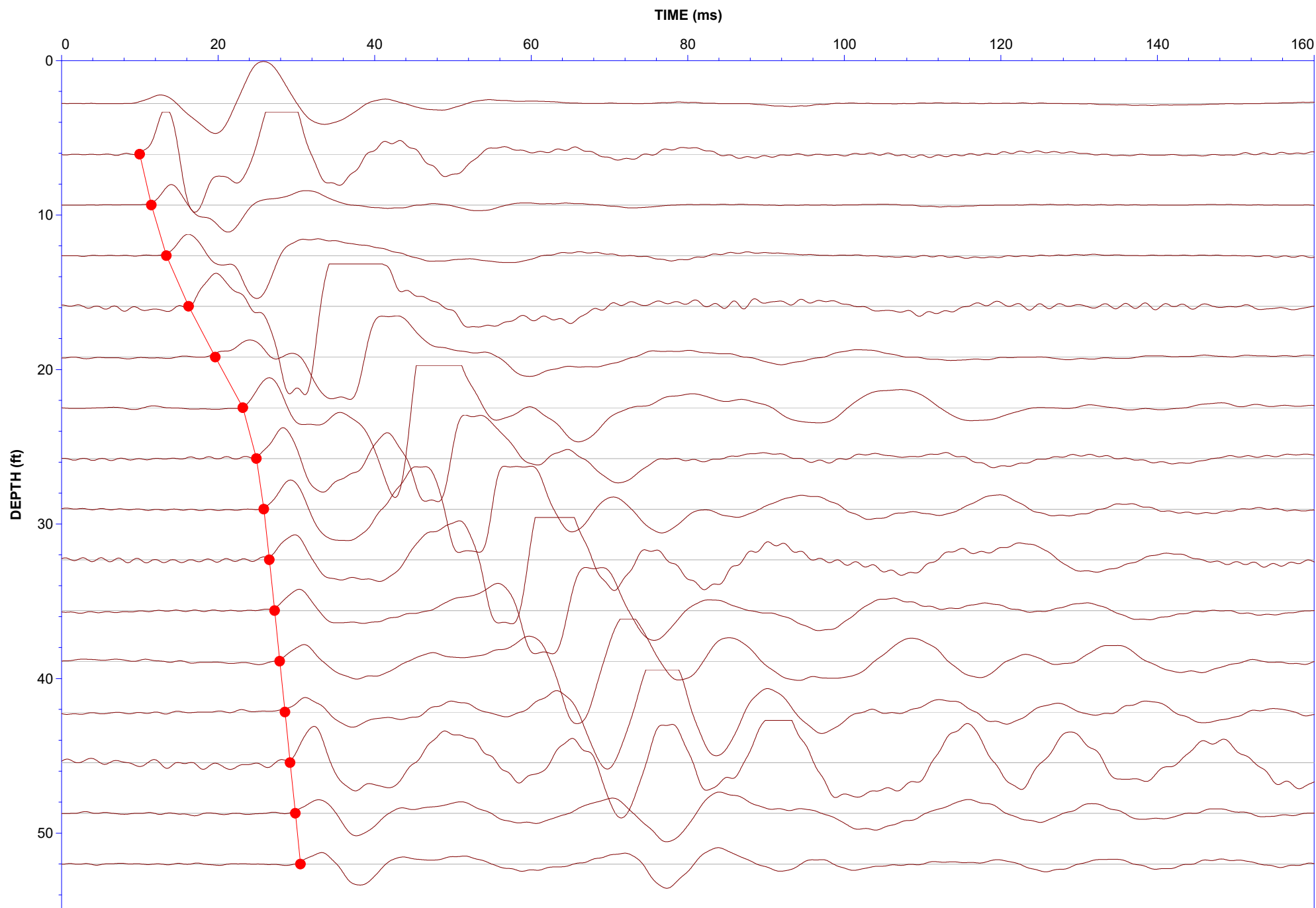
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-500 Hz

Hole: CPT-17

Date: 07:14:20 12:46





Job No: 20-52-21054
Cone: 552:T1500F15U500

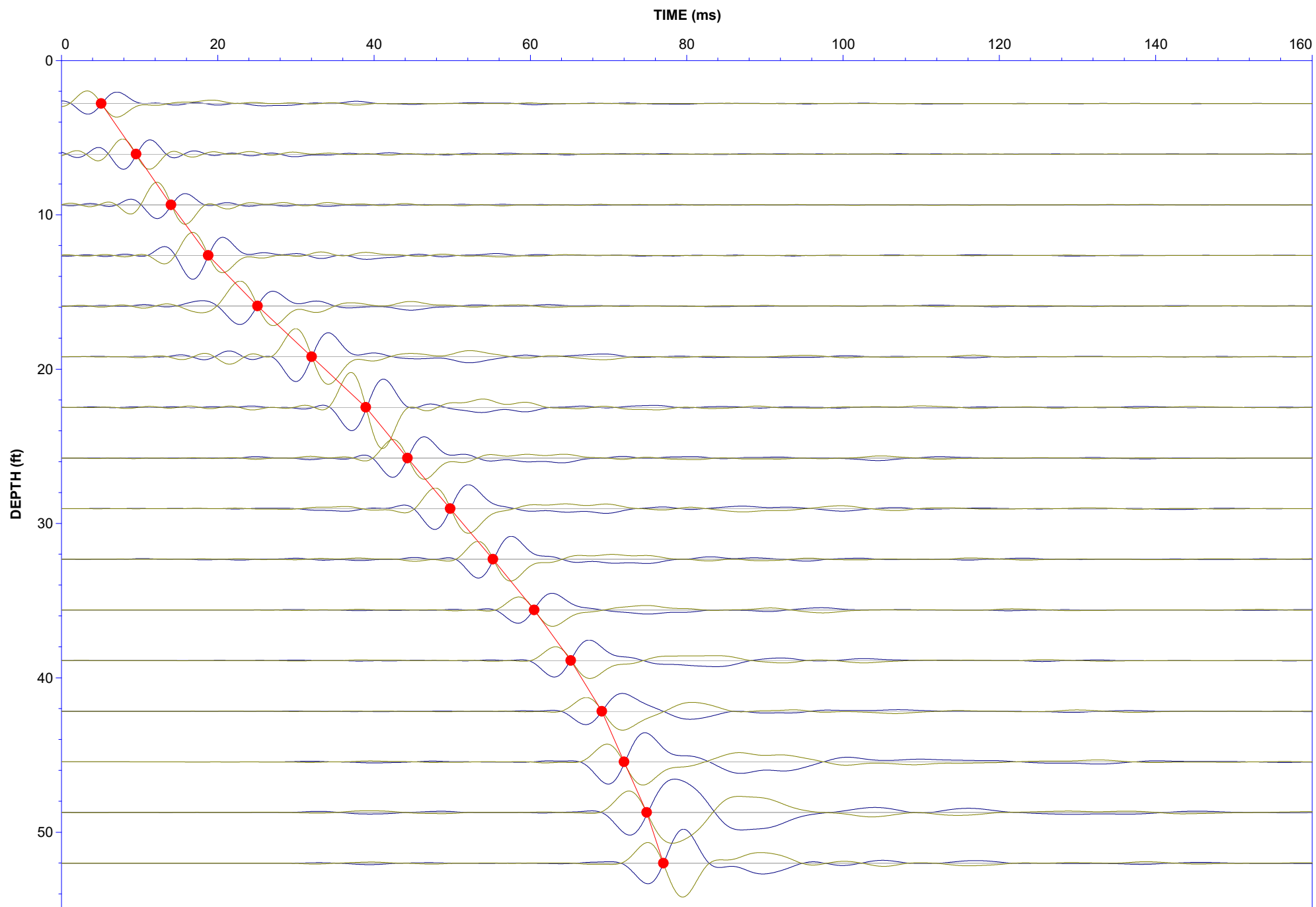
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-200 Hz

Hole: CPT-17

Date: 07:14:20 12:46





Job No: 20-52-21054
Cone: 552:T1500F15U500

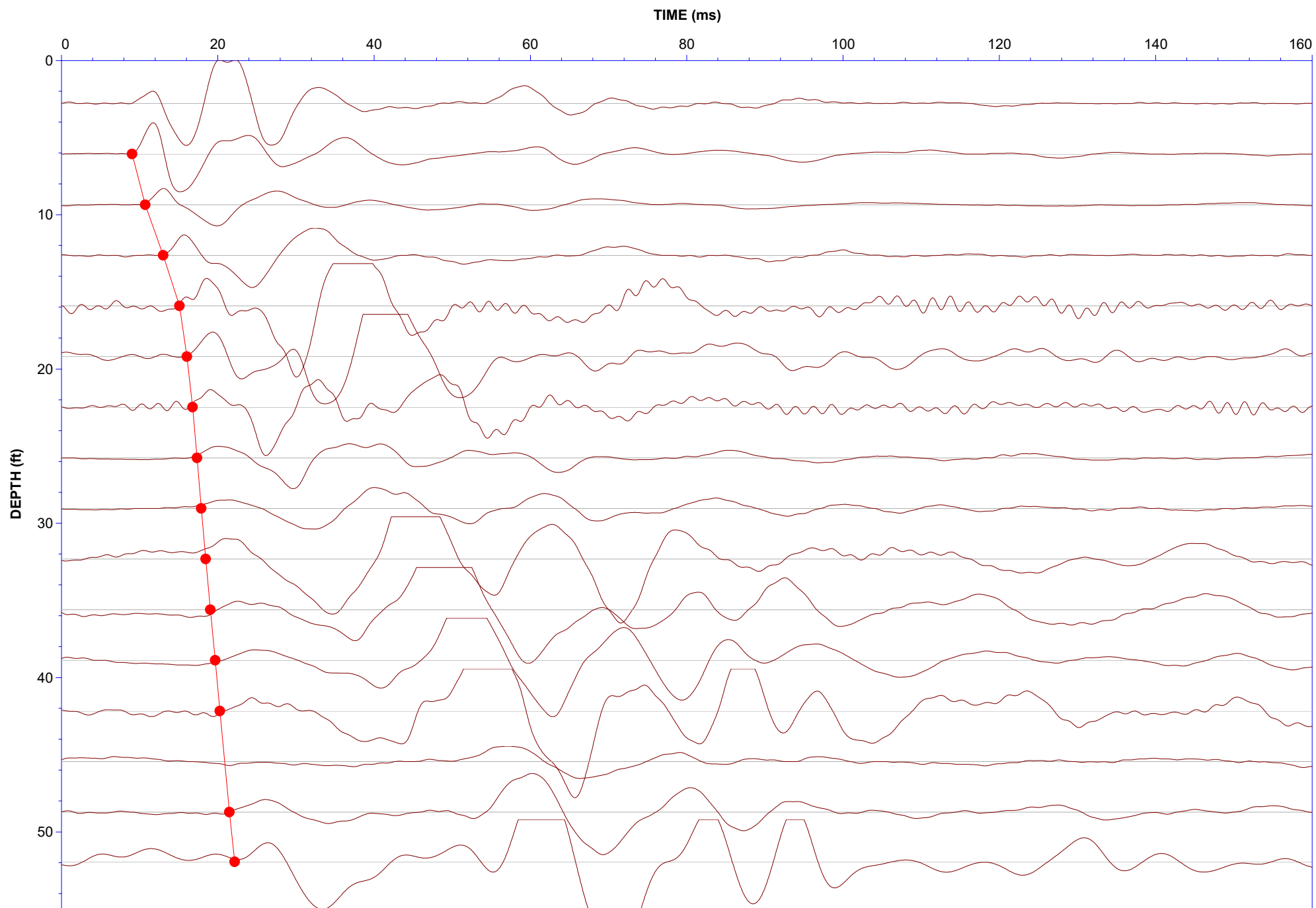
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-500 Hz

Hole: CPT-18

Date: 07:14:20 10:41





Job No: 20-52-21054
Cone: 552:T1500F15U500

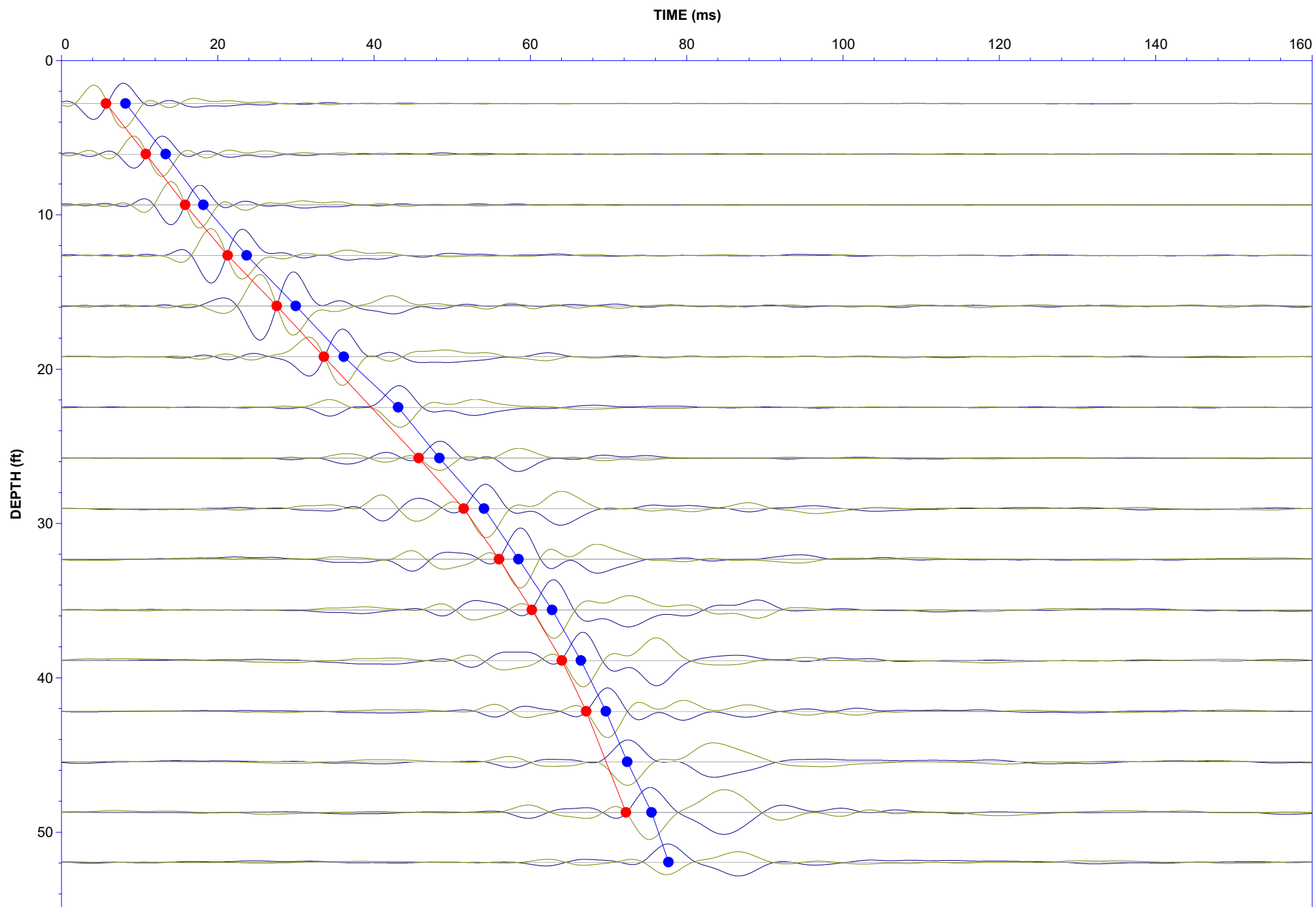
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-200 Hz

Hole: CPT-18

Date: 07:14:20 10:41





Job No: 20-52-21054
Cone: 552:T1500F15U500

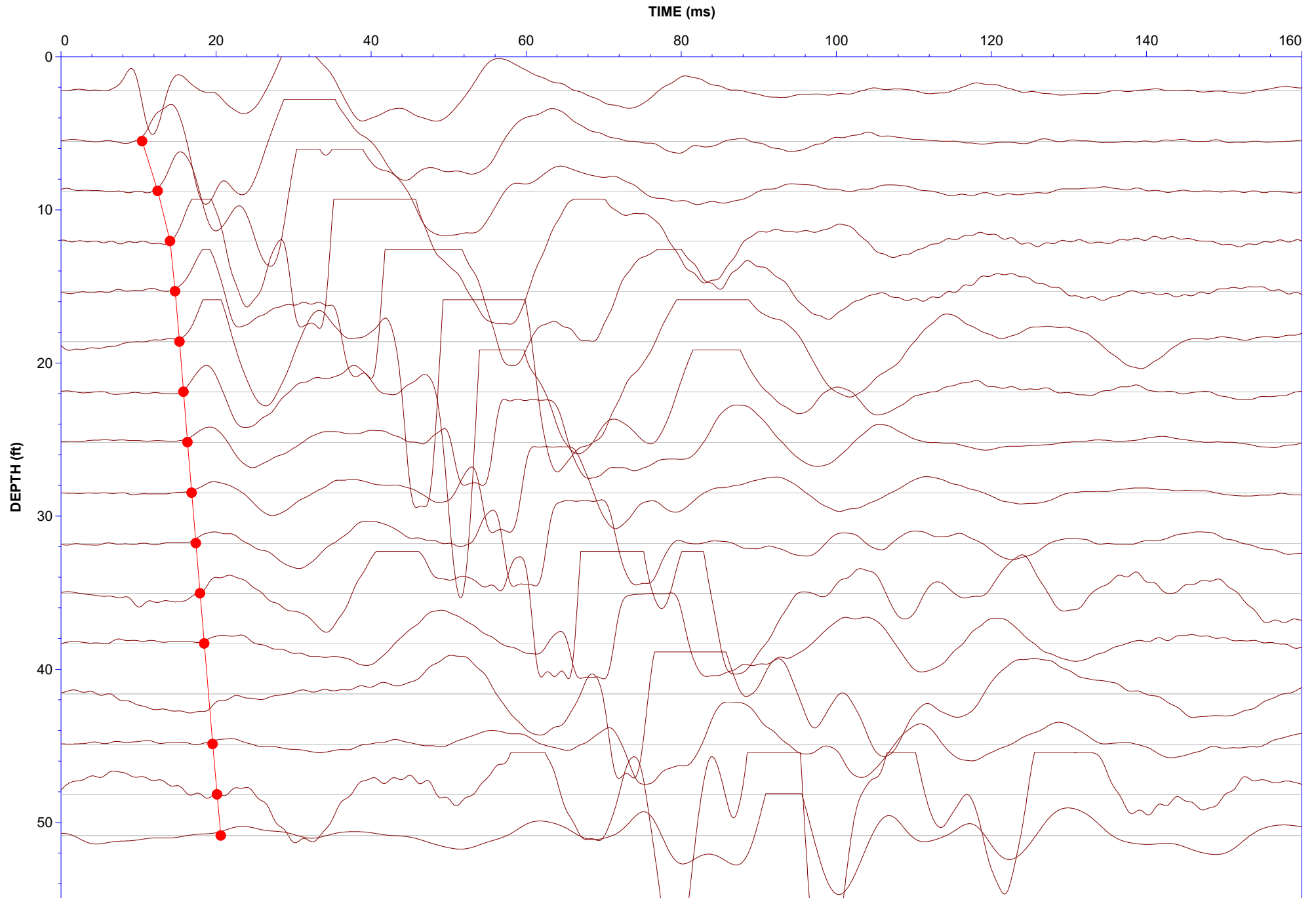
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-500 Hz

Hole: CPT-19

Date: 07:14:20 08:23





Job No: 20-52-21054
Cone: 552:T1500F15U500

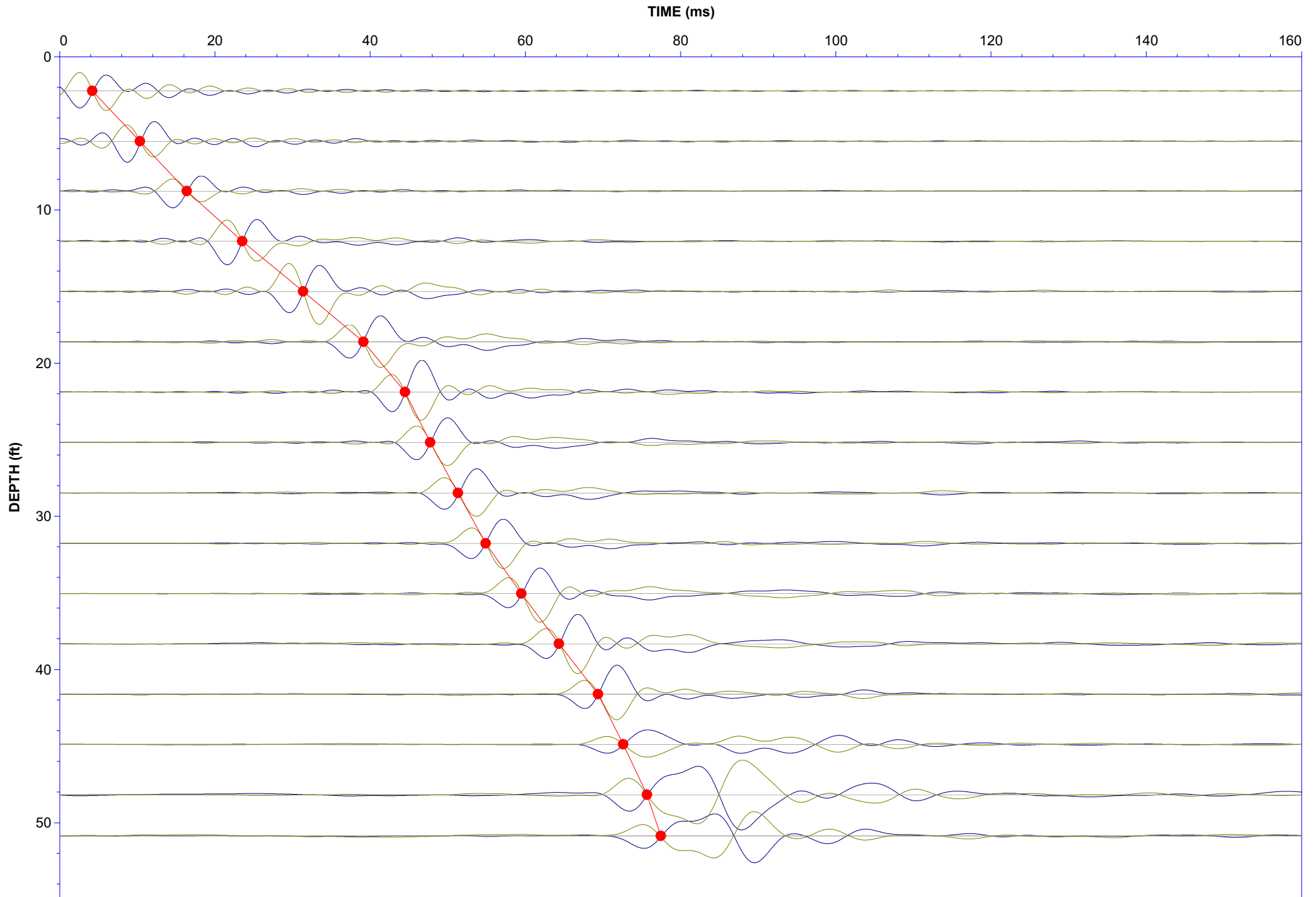
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-200 Hz

Hole: CPT-19

Date: 07:14:20 08:23





Job No: 20-52-21054
Cone: 552:T1500F15U500

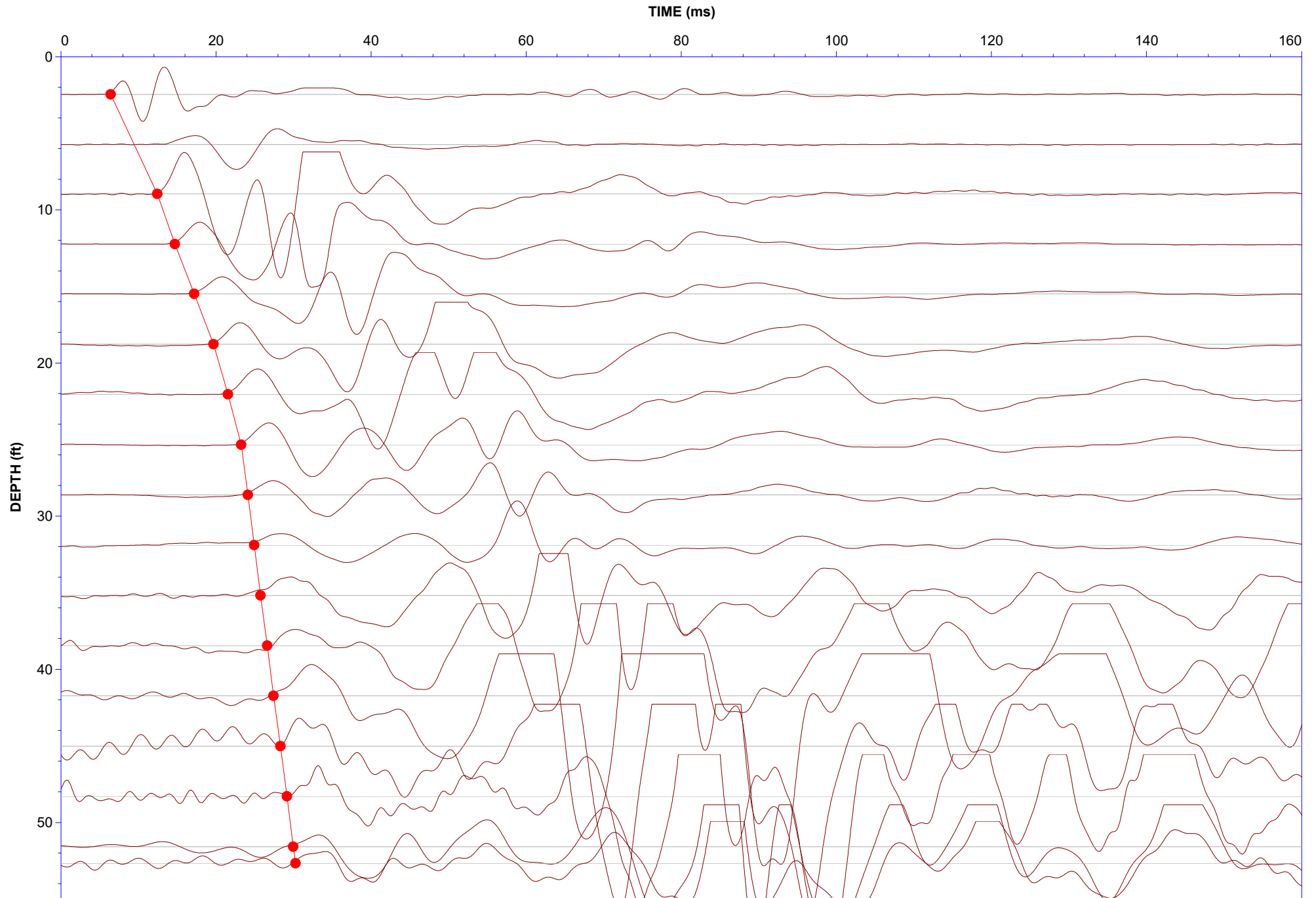
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-500 Hz

Hole: CPT-20

Date: 07:13:20 11:34





Job No: 20-52-21054
Cone: 552:T1500F15U500

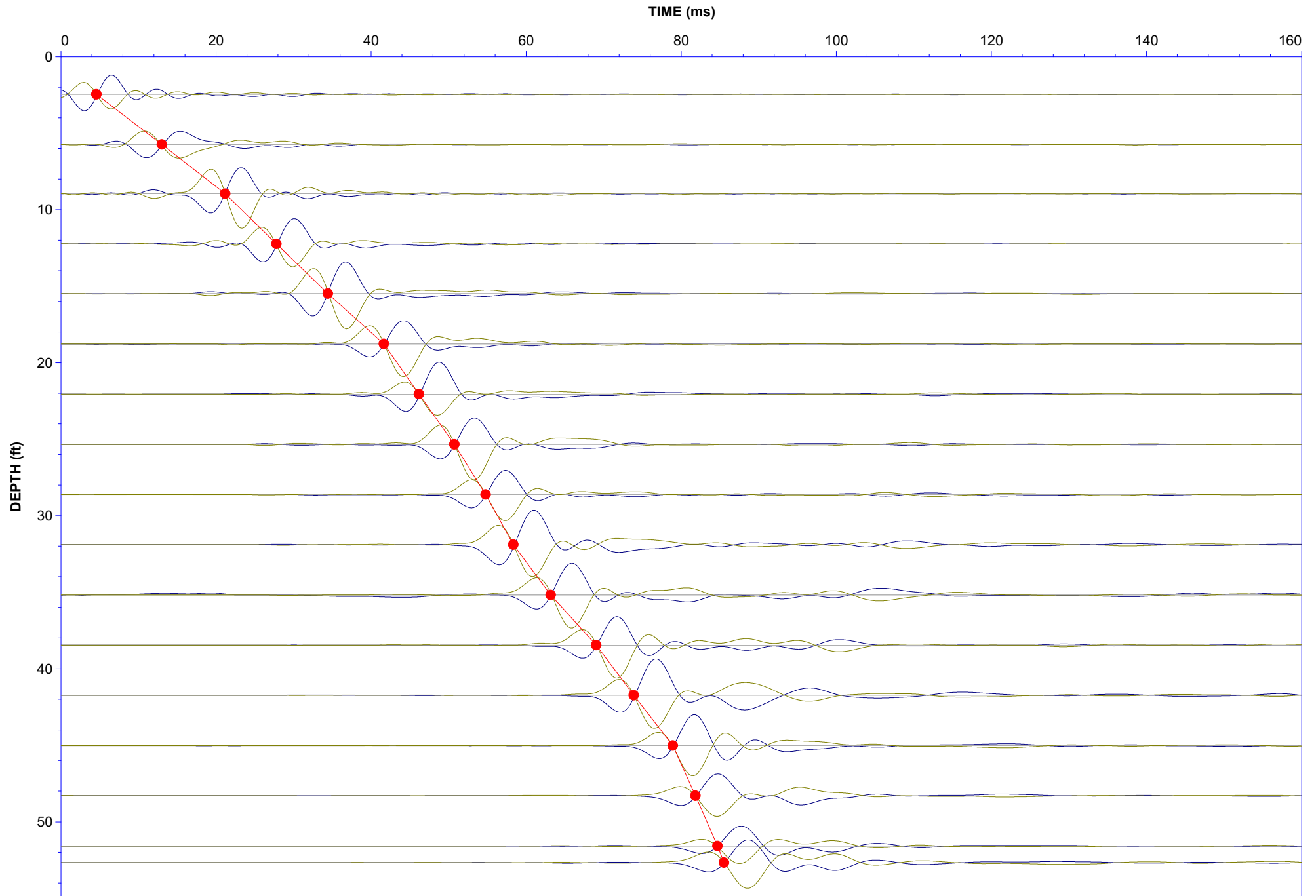
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-200 Hz

Hole: CPT-20

Date: 07:13:20 11:34





Job No: 20-52-21054
Cone: 552:T1500F15U500

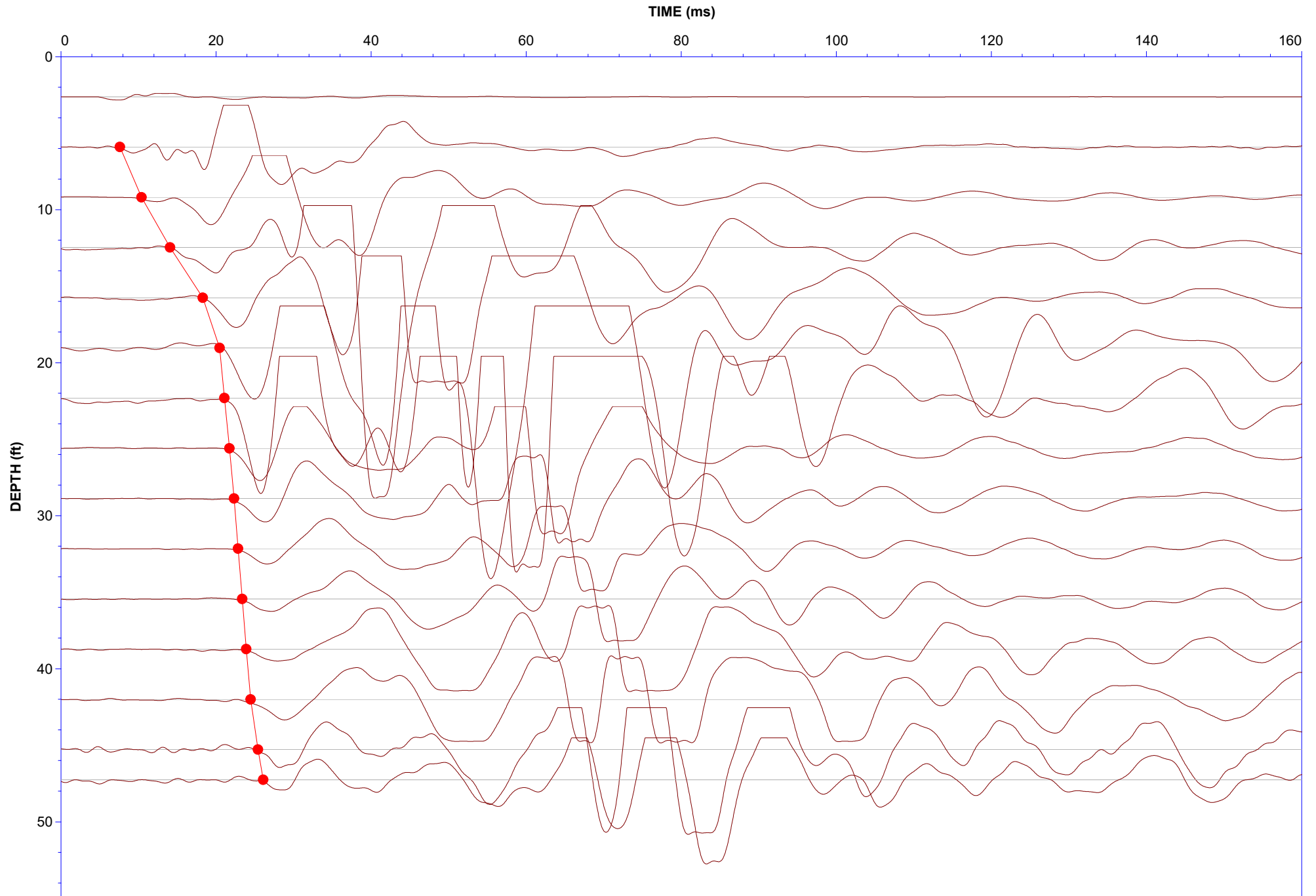
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-500 Hz

Hole: CPT-21

Date: 07:13:20 14:09





Job No: 20-52-21054
Cone: 552:T1500F15U500

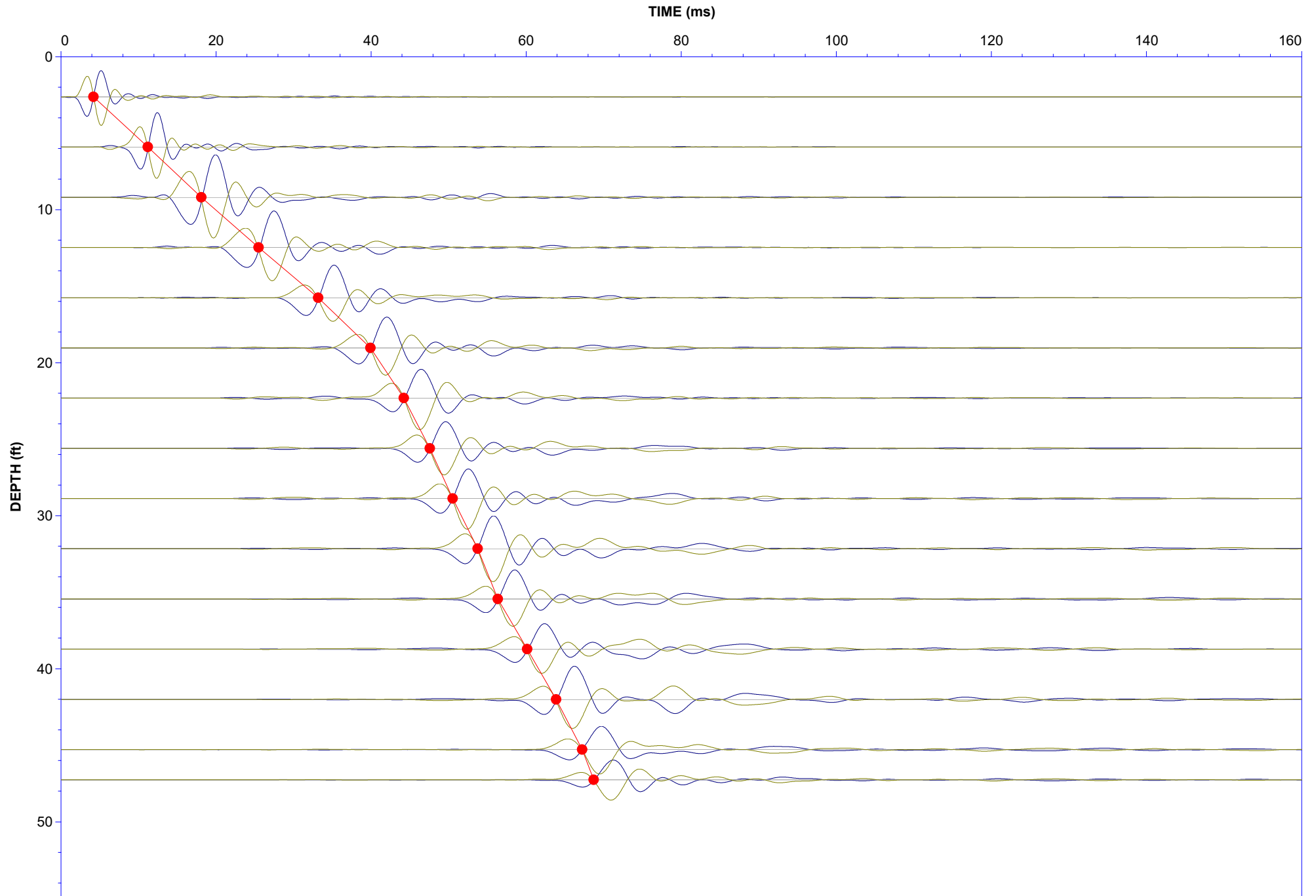
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-500 Hz

Hole: CPT-21

Date: 07:13:20 14:09





Job No: 20-52-21054
Cone: 552:T1500F15U500

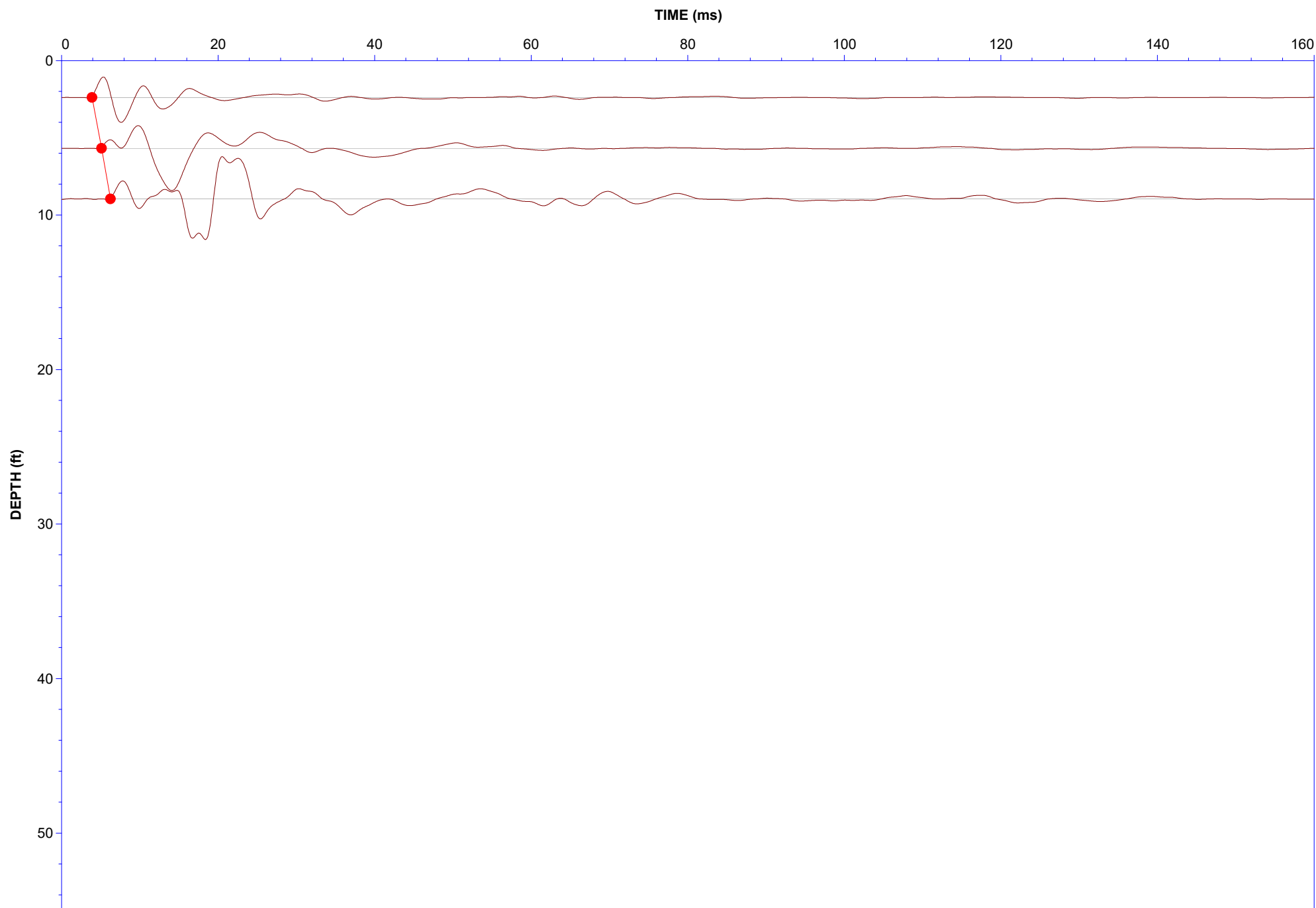
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-500 Hz

Hole: CPT-22

Date: 07:13:20 11:25





Job No: 20-52-21054
Cone: 552:T1500F15U500

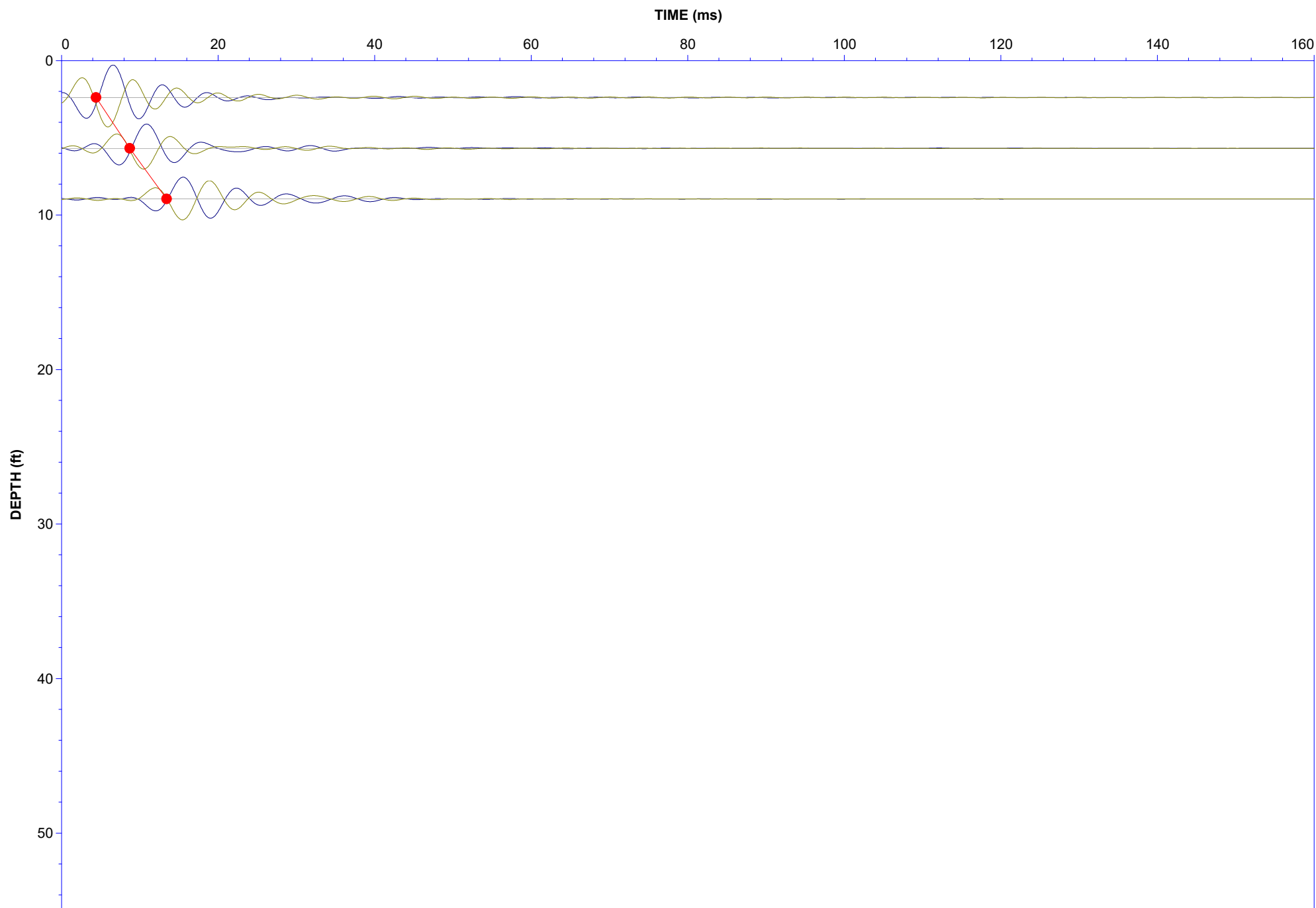
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-200 Hz

Hole: CPT-22

Date: 07:13:20 11:25





Job No: 20-52-21054
Cone: 552:T1500F15U500

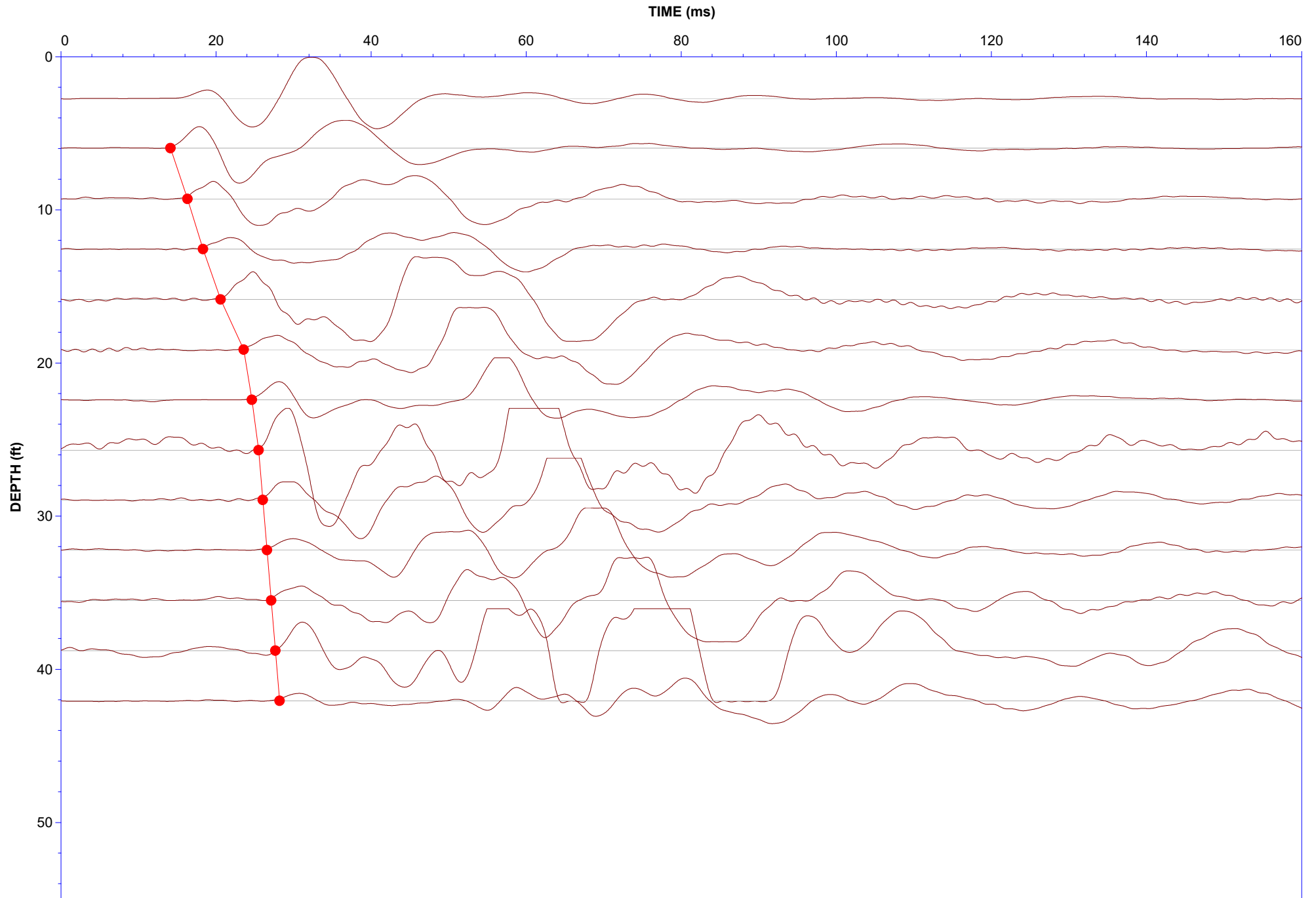
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-500 Hz

Hole: CPT-23

Date: 07:16:20 14:09





Job No: 20-52-21054
Cone: 552:T1500F15U500

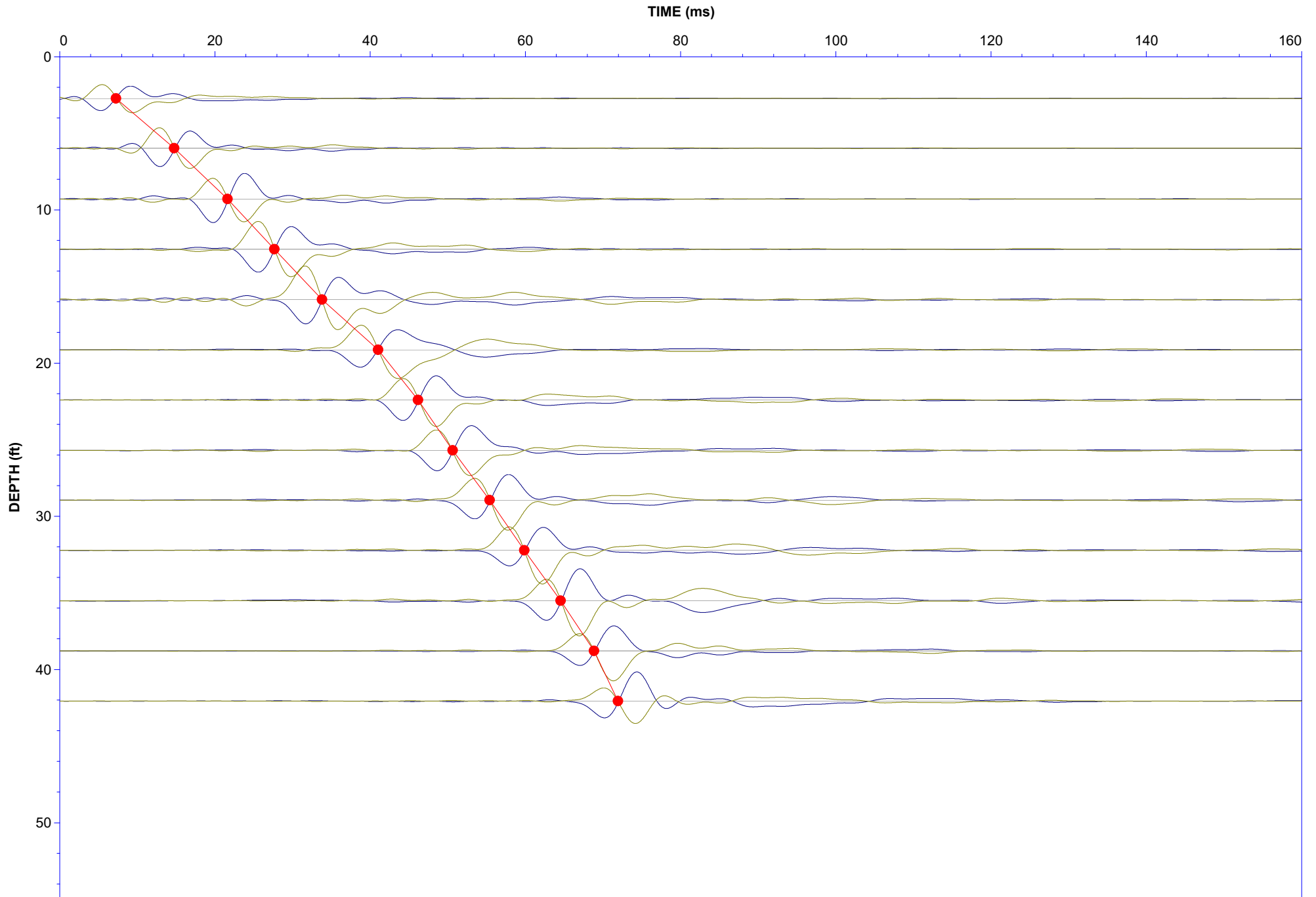
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-200 Hz

Hole: CPT-23

Date: 07:16:20 14:09





Job No: 20-52-21054
Cone: 552:T1500F15U500

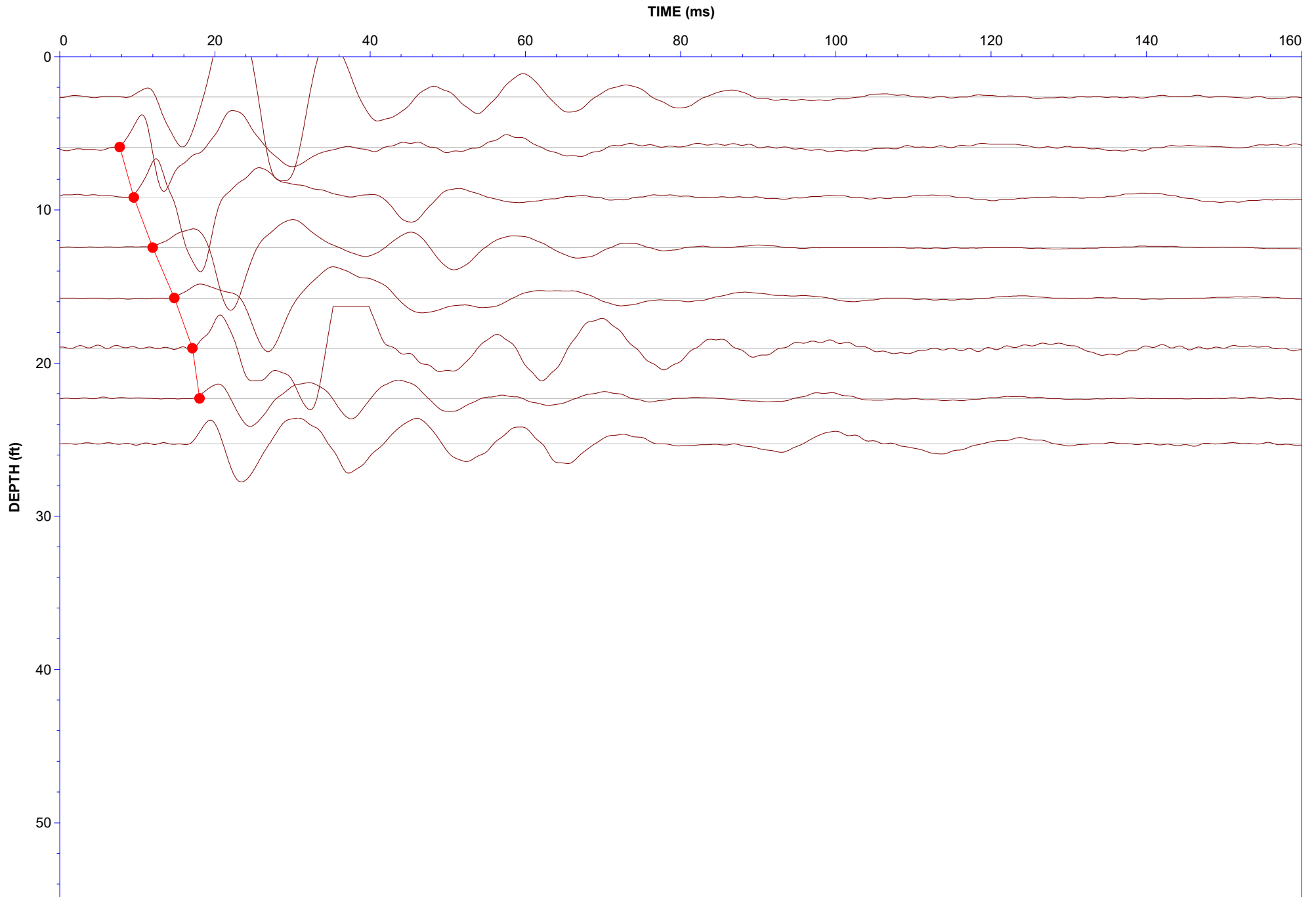
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-500 Hz

Hole: CPT-24

Date: 07:19:20 15:11





Job No: 20-52-21054
Cone: 552:T1500F15U500

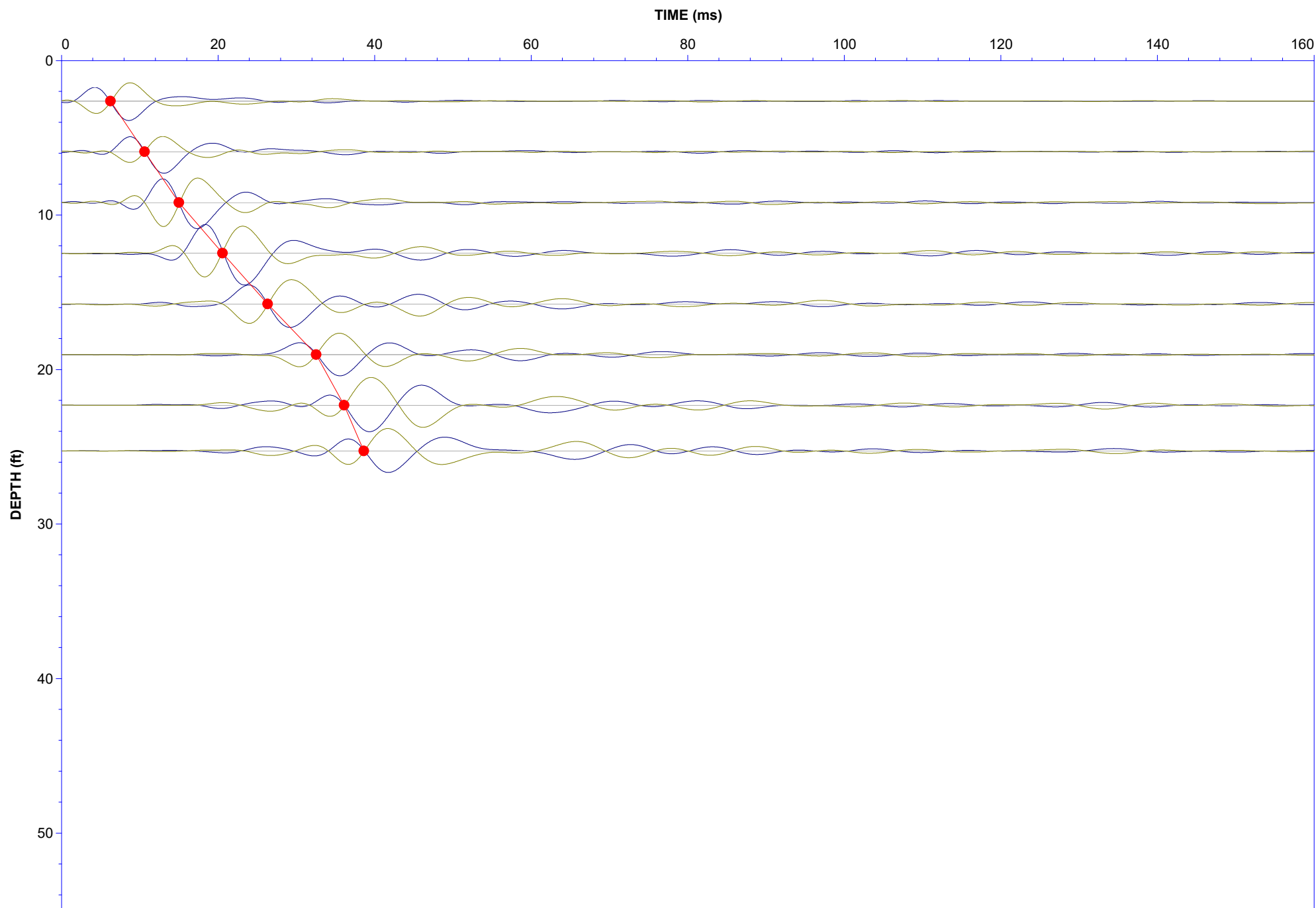
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-200 Hz

Hole: CPT-24

Date: 07:19:20 15:11





Job No: 20-52-21054
Cone: 657:T1500F15U500

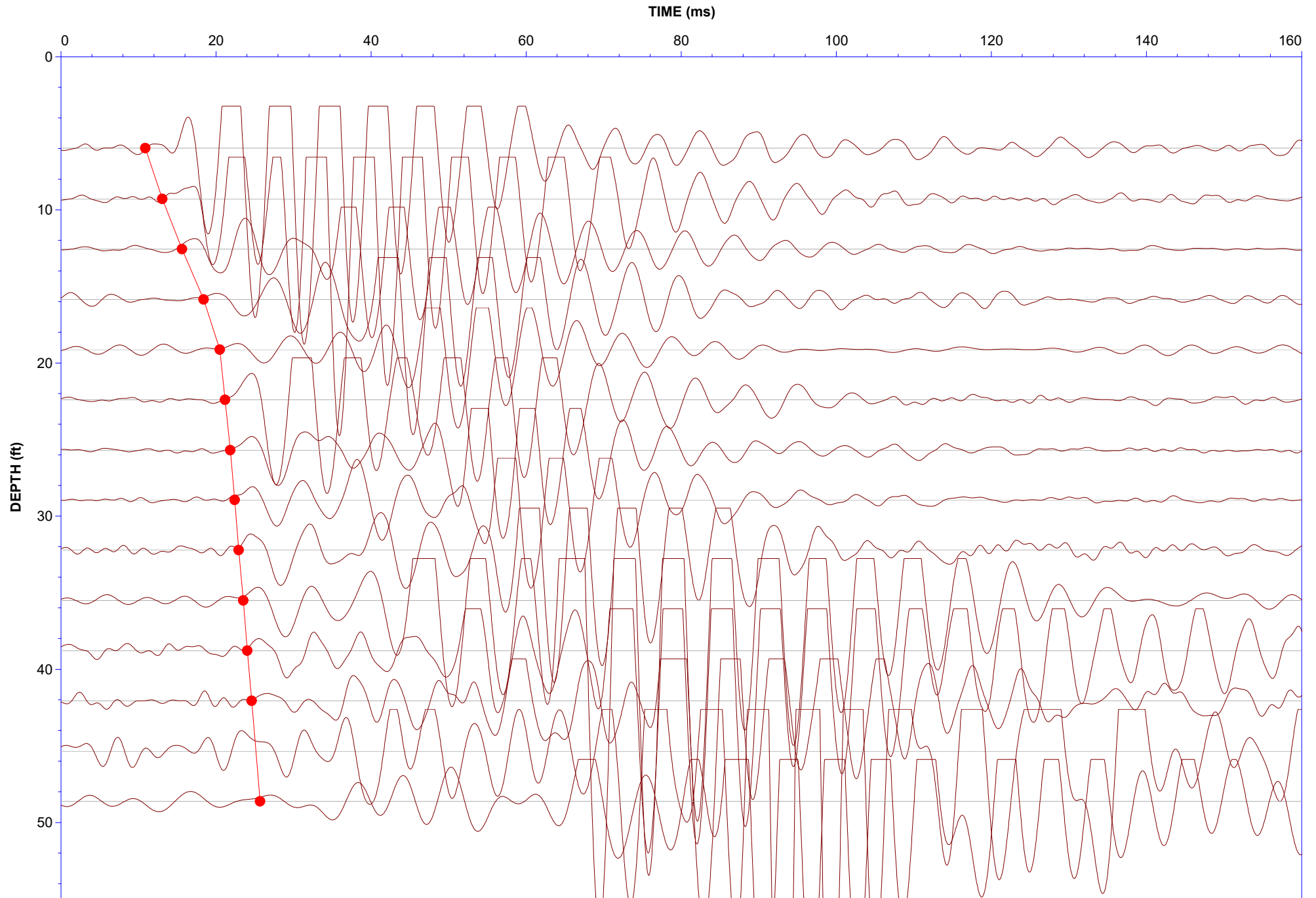
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-900 Hz

Hole: CPT-25

Date: 07:20:20 09:53





Job No: 20-52-21054
Cone: 657:T1500F15U500

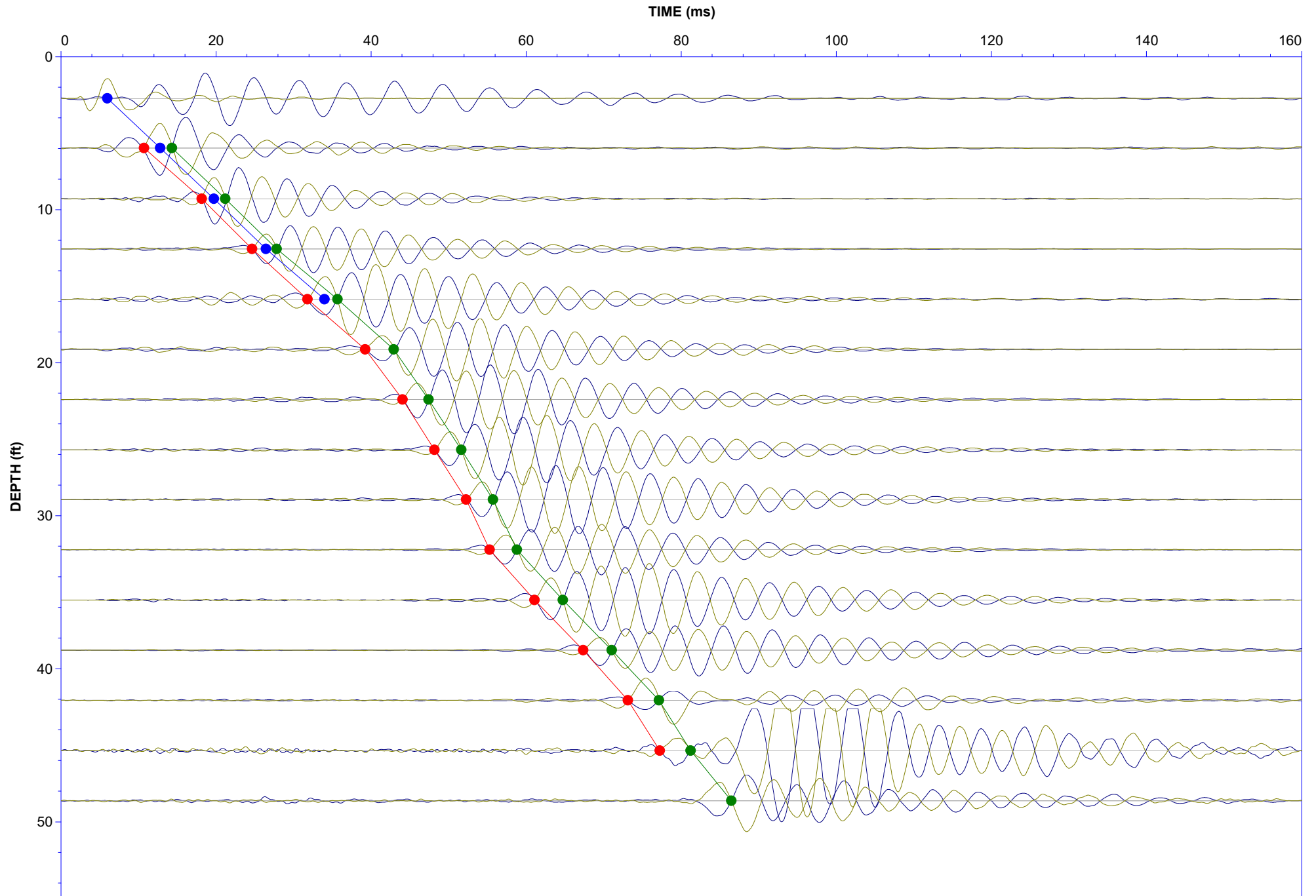
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-900 Hz

Hole: CPT-25

Date: 07:20:20 09:53





Job No: 20-52-21054
Cone: 657:T1500F15U500

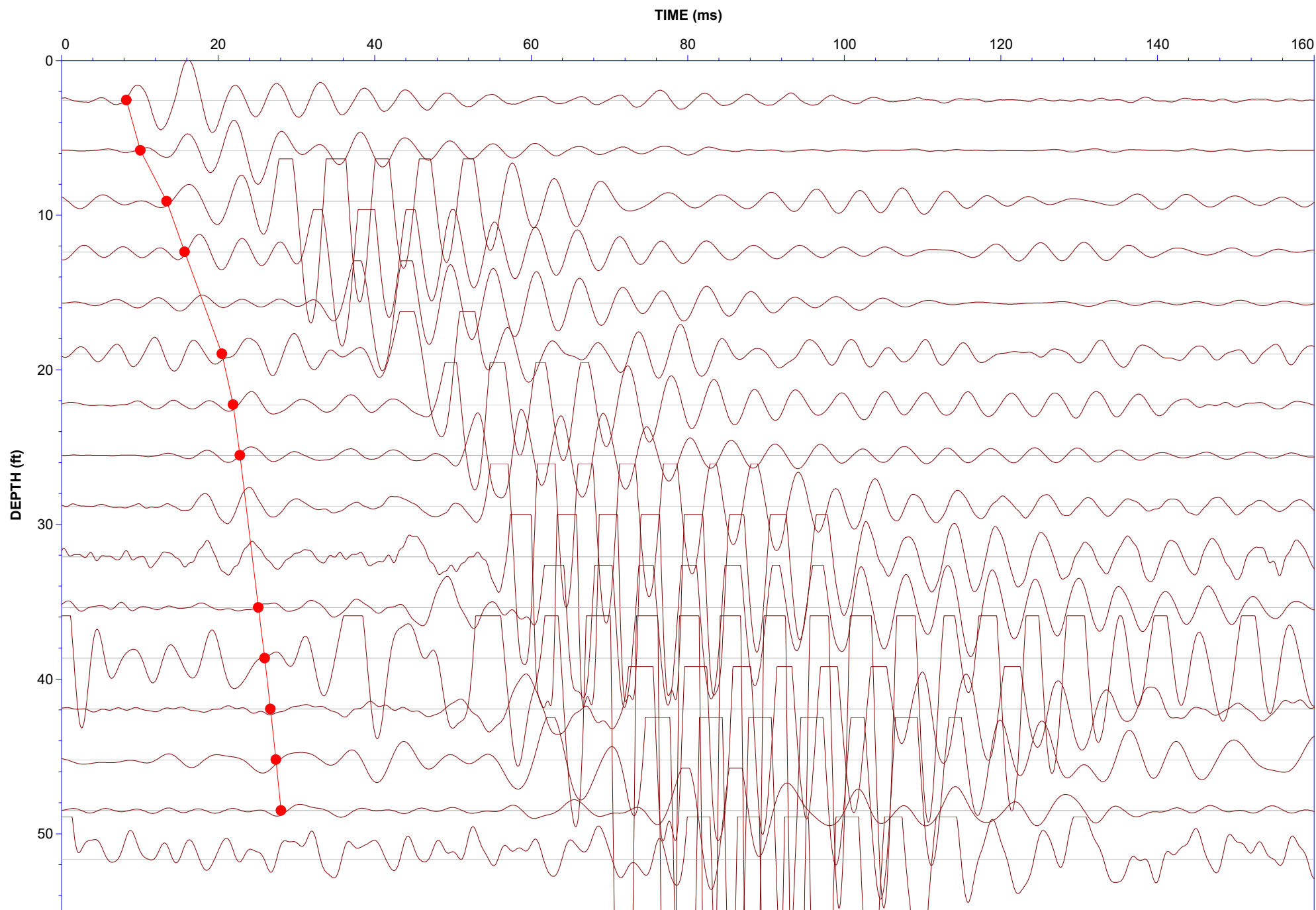
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-500 Hz

Hole: CPT-26

Date: 07:20:20 11:28





Job No: 20-52-21054
Cone: 657:T1500F15U500

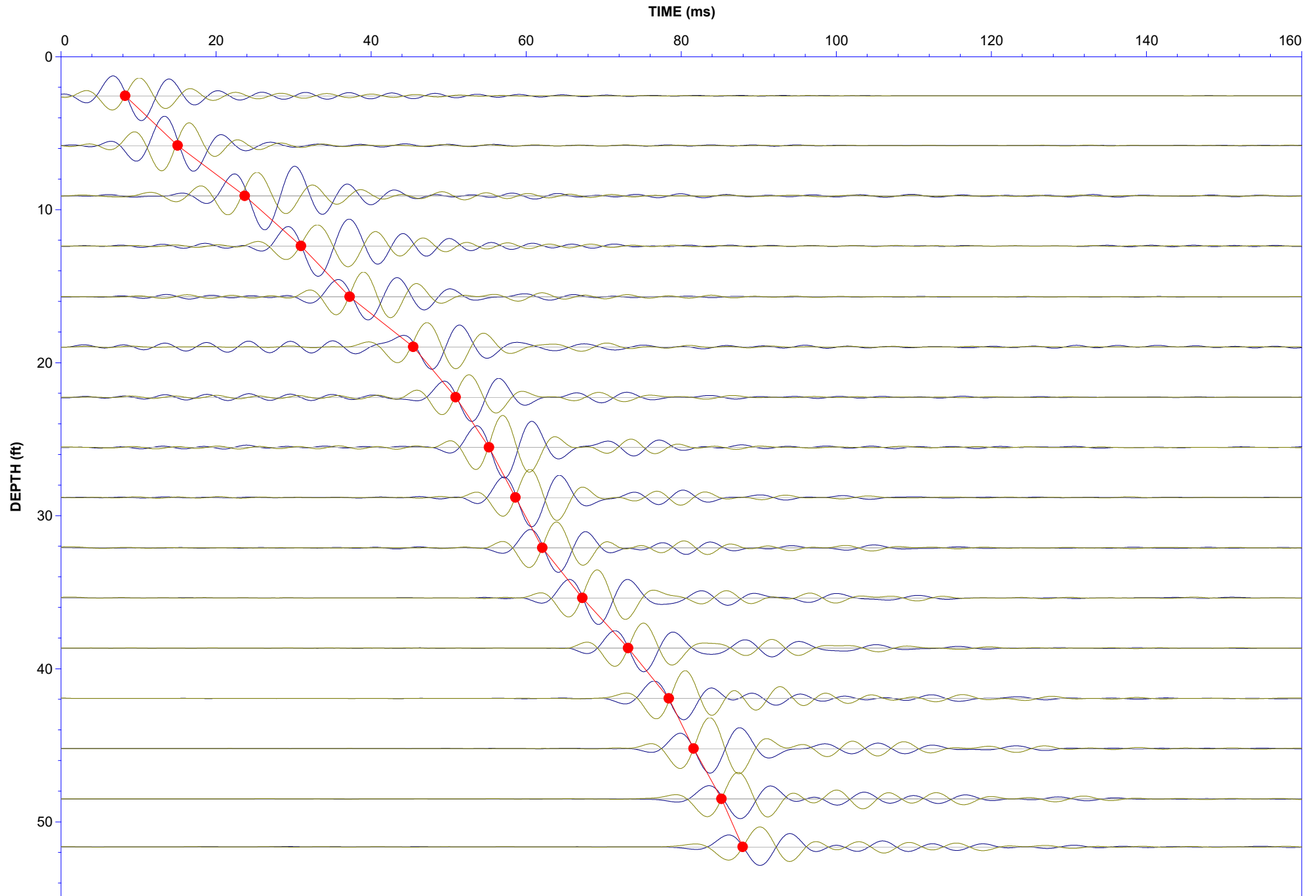
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-200 Hz

Hole: CPT-26

Date: 07:20:20 11:28





Job No: 20-52-21054
Cone: 657:T1500F15U500

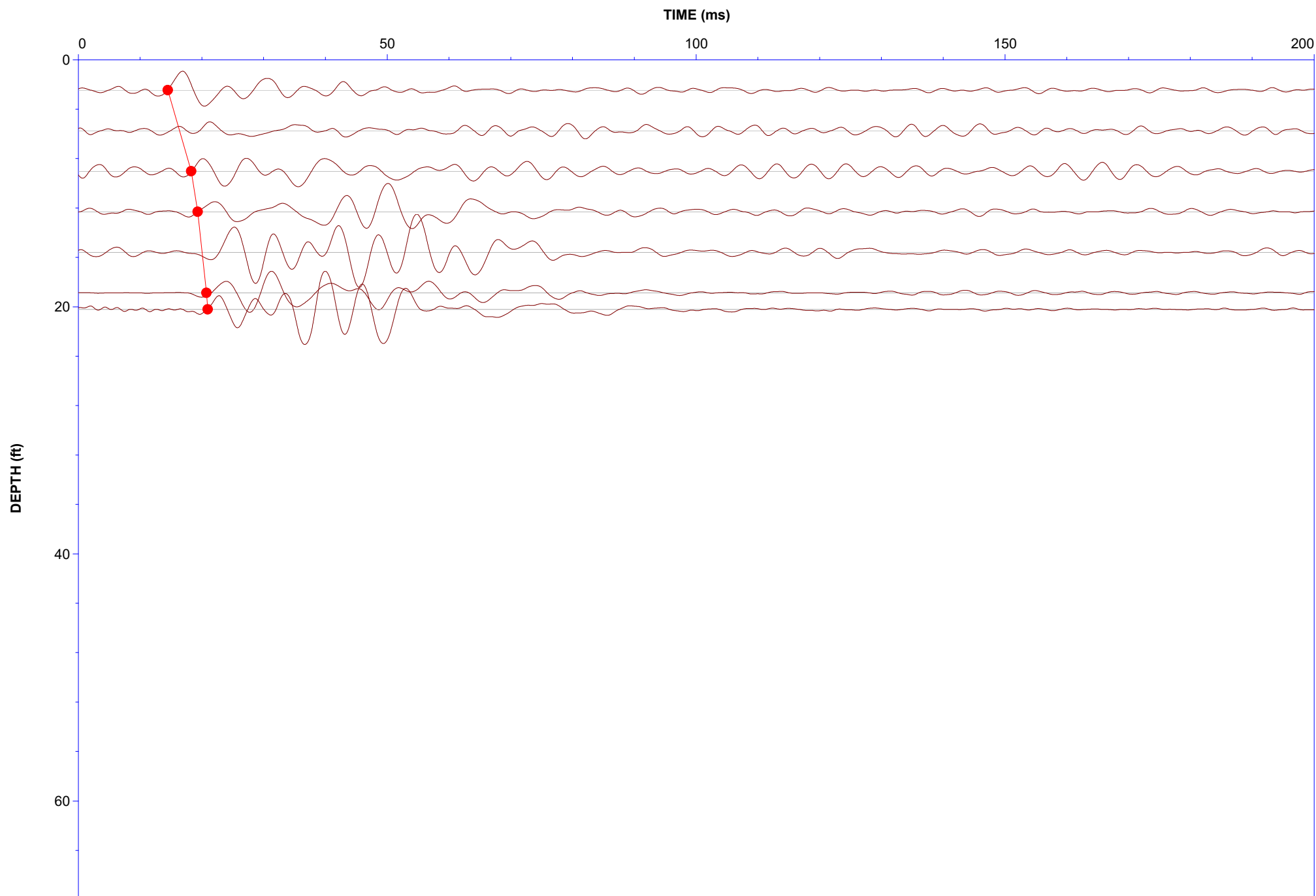
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-500 Hz

Hole: CPT-27

Date: 07:20:20 12:56





Job No: 20-52-21054
Cone: 657:T1500F15U500

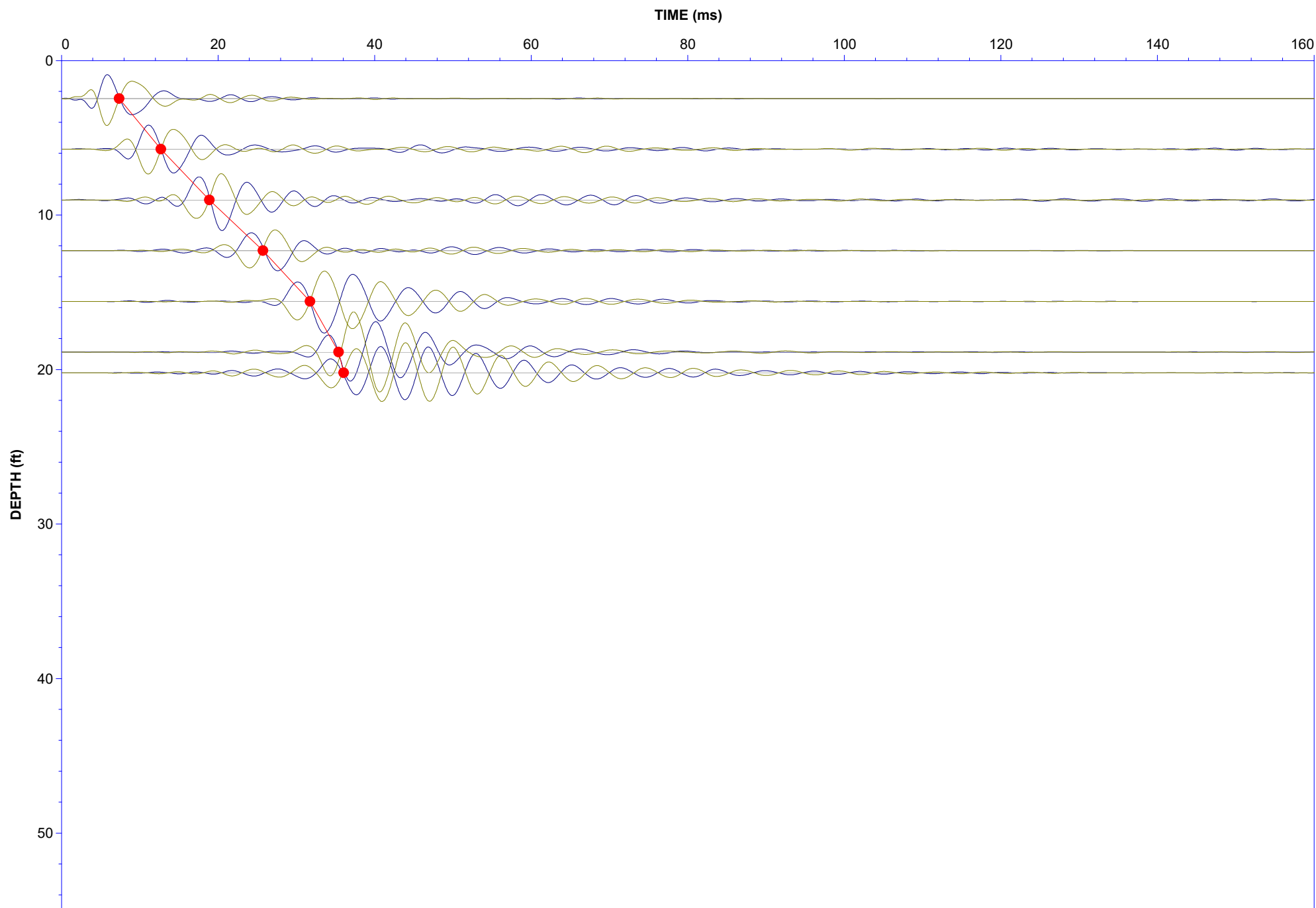
Client: Wood plc

Project Title: Cholla Power Plant

Filter: BP 0-500 Hz

Hole: CPT-27

Date: 07:20:20 12:56



Pore Pressure Dissipation Summary and
Pore Pressure Dissipation Plots



Job No: 20-52-21054
 Client: Wood plc
 Project: Cholla Power Plant
 Start Date: 12-Jul-2020
 End Date: 22-Jul-2020

CPTu PORE PRESSURE DISSIPATION SUMMARY

Sounding ID	File Name	Cone Area (cm ²)	Duration (s)	Test Depth (ft)	Estimated Equilibrium Pore Pressure U _{eq} (ft) ¹	Calculated Phreatic Surface (ft) ¹	Refer to Notation Number
CPT-01	20-52-21054_SP01	15	290	6.23	0.00		
CPT-05	20-52-21054_SP05	15	985	9.68	1.34	8.3	
CPT-07	20-52-21054_SP07	15	480	16.40	0.00		
CPT-08	20-52-21054_SP08	15	480	16.73	0.44	16.3	
CPT-09	20-52-21054_SP09	15	930	20.92	1.49	19.4	
CPT-09	20-52-21054_SP09	15	300	30.02	10.66	19.4	
CPT-10	20-52-21054_SP10	15	1780	17.55			1
CPT-10	20-52-21054_SP10	15	370	28.71	8.81	19.9	
CPT-11	20-52-21054_SP11	15	360	17.22	0.70	16.5	
CPT-12	20-52-21054_SP12	15	1600	19.60	2.93	16.7	
CPT-13	20-52-21054_SP13	15	660	33.87			1
CPT-14	20-52-21054_SP14	15	255	15.67	0.00		
CPT-14	20-52-21054_SP14	15	495	39.86	19.79	20.1	
CPT-14	20-52-21054_SP14	15	1945	49.54	28.75	20.8	
CPT-15	20-52-21054_SP15	15	680	46.34	23.31	23.0	
CPT-16	20-52-21054_SP16	15	400	15.99	3.87	12.1	
CPT-16	20-52-21054_SP16	15	500	48.31	25.24	23.1	
CPT-17	20-52-21054_SP17	15	1830	44.62	31.00	13.6	
CPT-18	20-52-21054_SP18	15	280	4.18	0.00		
CPT-18	20-52-21054_SP18	15	300	12.63	0.00		
CPT-18	20-52-21054_SP18	15	505	17.22	0.00		
CPT-18	20-52-21054_SP18	15	1880	38.88	18.64	20.2	
CPT-18	20-52-21054_SP18	15	300	42.16	21.59	20.6	
CPT-19	20-52-21054_SP19	15	1000	4.02	3.33	0.7	
CPT-19	20-52-21054_SP19	15	1800	22.39	24.40	-2.0	
CPT-19	20-52-21054_SP19	15	905	50.20	28.20	22.0	
CPT-20	20-52-21054_SP20	15	640	12.22			1
CPT-20	20-52-21054_SP20	15	1890	22.06			1
CPT-20	20-52-21054_SP20	15	975	41.75	26.43	15.3	
CPT-20	20-52-21054_SP20	15	400	43.72	21.40	22.3	



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Start Date: 12-Jul-2020
End Date: 22-Jul-2020

CPT_u PORE PRESSURE DISSIPATION SUMMARY

Sounding ID	File Name	Cone Area (cm ²)	Duration (s)	Test Depth (ft)	Estimated Equilibrium Pore Pressure U _{eq} (ft) ¹	Calculated Phreatic Surface (ft) ¹	Refer to Notation Number
CPT-21	20-52-21054_SP21	15	1800	6.89			1
CPT-21	20-52-21054_SP21	15	1200	35.43			1
CPT-21	20-52-21054_SP21	15	400	42.90	19.87	23.0	
CPT-21	20-52-21054_SP21	15	280	47.24	0.48	46.8	
CPT-22	20-52-21054_SP22	15	1200	9.92	5.86	4.1	
CPT-23	20-52-21054_SP23	15	860	4.92			1
CPT-23	20-52-21054_SP23	15	970	14.03	0.92	13.1	
CPT-23	20-52-21054_SP23	15	250	40.35	20.26	20.1	
CPT-23	20-52-21054_SP23	15	250	42.49	22.36	20.1	
CPT-24	20-52-21054_SP24	15	900	19.60	6.20	13.4	
CPT-24	20-52-21054_SP24	15	1200	24.11	7.28	16.8	
CPT-25	20-52-21054_SP25	15	1845	30.92	22.77	8.1	
CPT-26	20-52-21054_SP26	15	900	41.26	18.77	22.5	
CPT-27	20-52-21054_SP27	15	500	18.54	19.30	-0.8	
CPT-27	20-52-21054_SP27	15	690	20.34			1

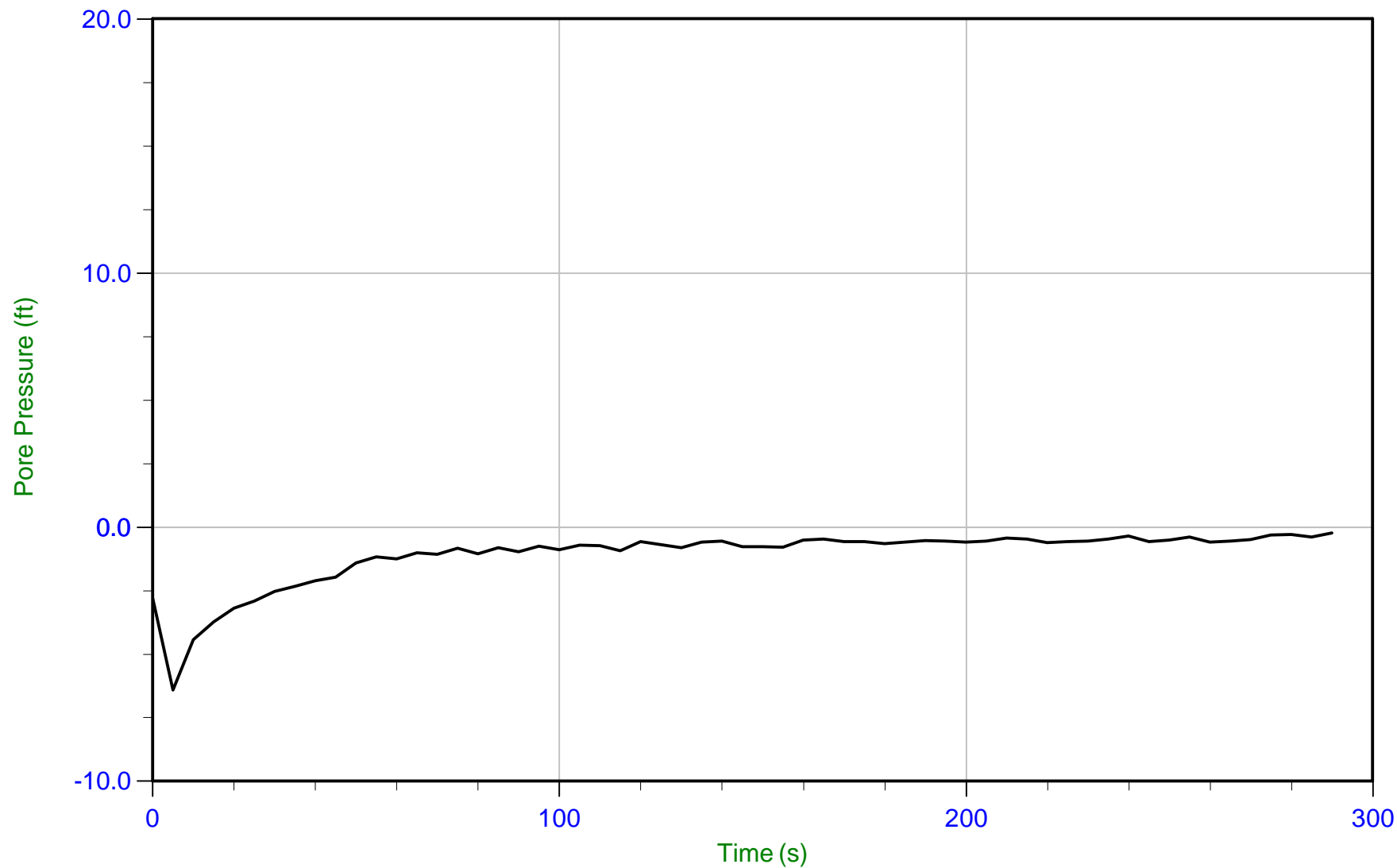
1. Dissipation test ended by client.



Wood plc

Job No: 20-52-21054
Date: 07/15/2020 08:09
Site: Cholla Power Plant

Sounding: CPT-01
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP01.PPF
Depth: 1.900 m / 6.234 ft
Duration: 290.0 s

u Min: -6.4 ft
u Max: -0.2 ft
u Final: -0.2 ft

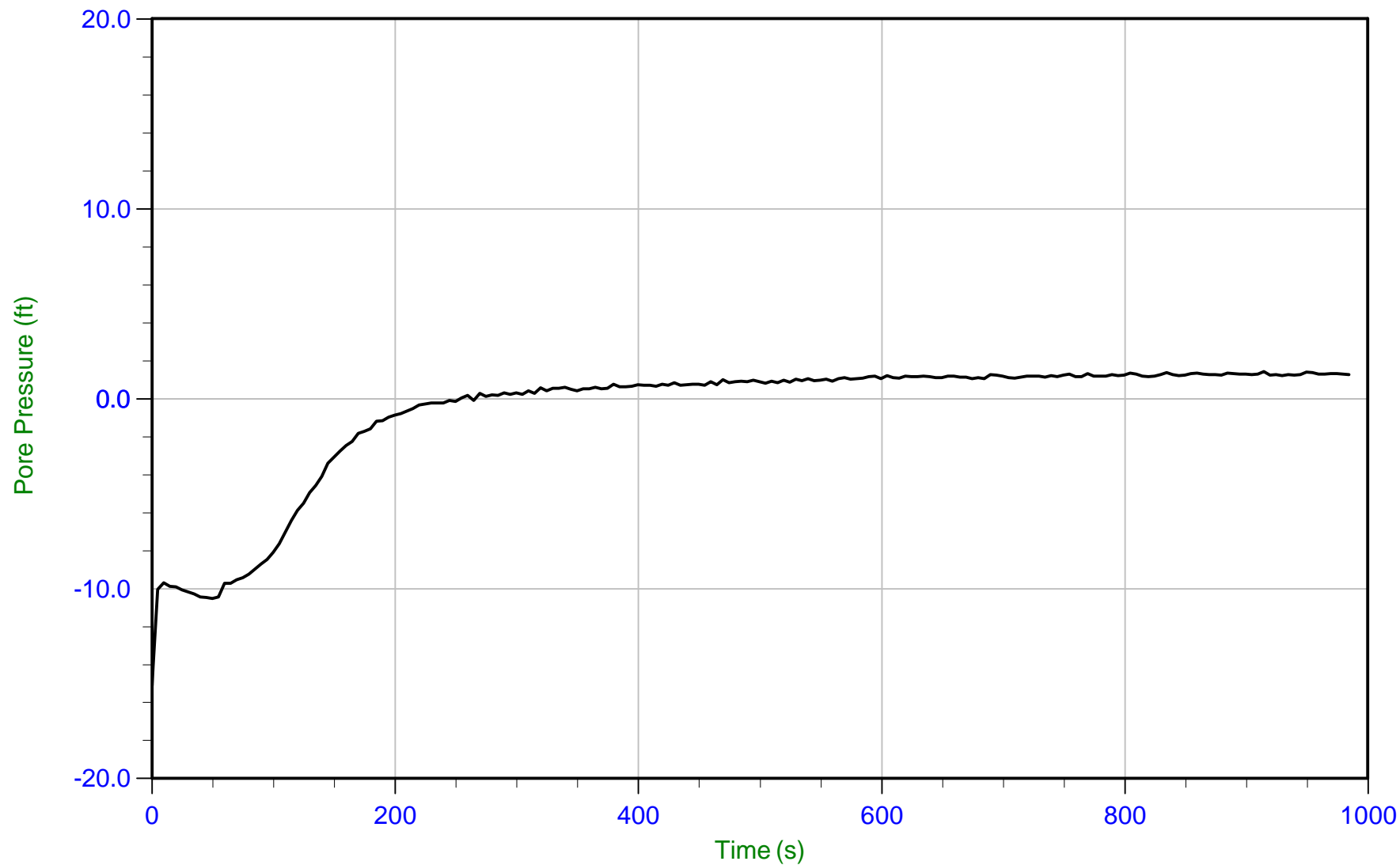
WT: 1.900 m / 6.234 ft
Ueq: 0.0 ft



Wood plc

Job No: 20-52-21054
Date: 07/15/2020 09:23
Site: Cholla Power Plant

Sounding: CPT-05
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP05.PPF
Depth: 2.950 m / 9.678 ft
Duration: 985.0 s

u Min: -15.1 ft
u Max: 1.4 ft
u Final: 1.3 ft

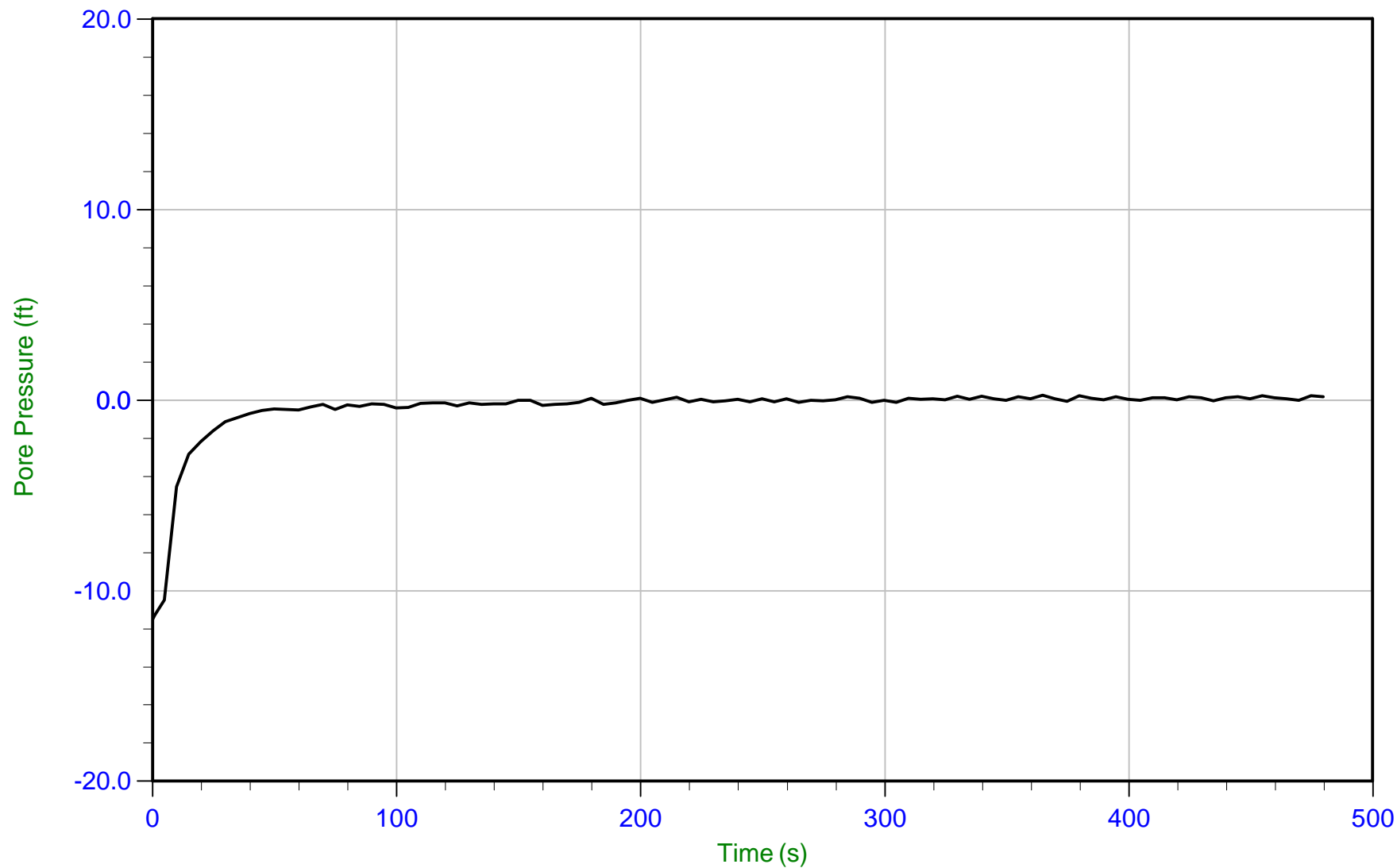
WT: 2.542 m / 8.340 ft
Ueq: 1.3 ft



Wood plc

Job No: 20-52-21054
Date: 07/15/2020 10:16
Site: Cholla Power Plant

Sounding: CPT-07
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP07.PPF
Depth: 5.000 m / 16.404 ft
Duration: 480.0 s

u Min: -11.5 ft
u Max: 0.3 ft
u Final: 0.2 ft

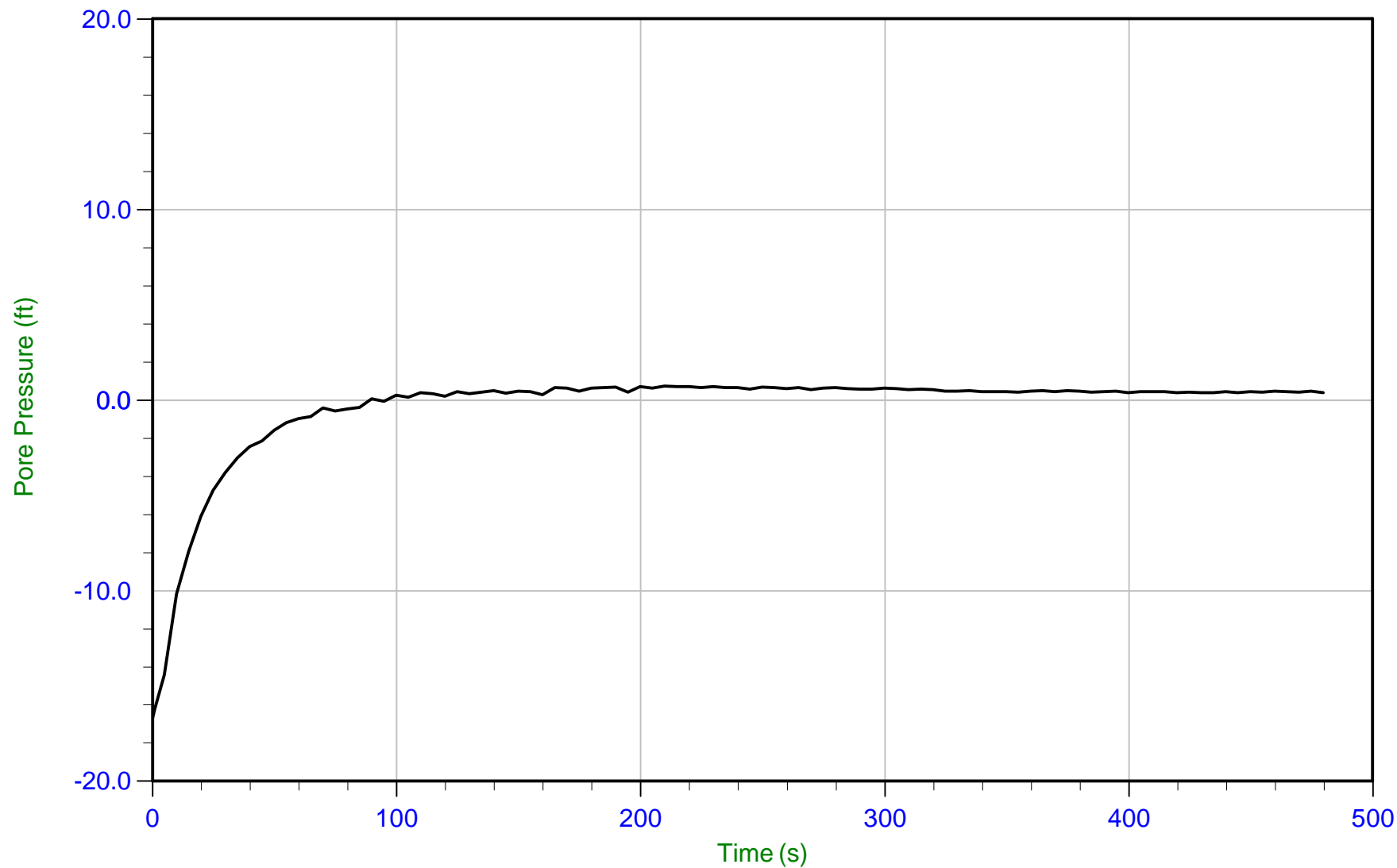
WT: 5.000 m / 16.404 ft
Ueq: 0.0 ft



Wood plc

Job No: 20-52-21054
Date: 07/15/2020 11:09
Site: Cholla Power Plant

Sounding: CPT-08
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP08.PPF
Depth: 5.100 m / 16.732 ft
Duration: 480.0 s

u Min: -16.7 ft
u Max: 0.7 ft
u Final: 0.4 ft

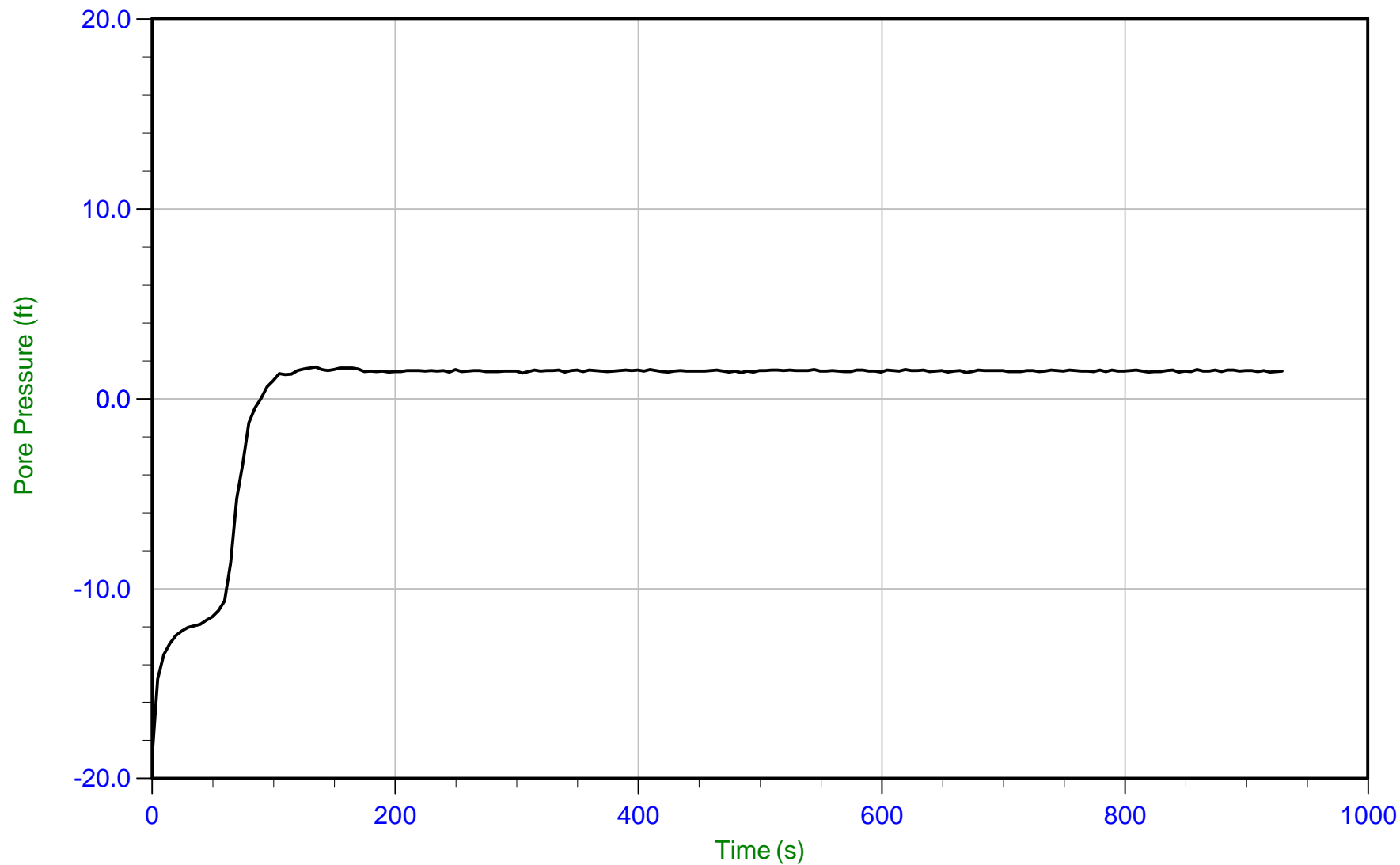
WT: 4.967 m / 16.296 ft
Ueq: 0.4 ft



Wood plc

Job No: 20-52-21054
Date: 07/15/2020 12:02
Site: Cholla Power Plant

Sounding: CPT-09
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP09.PPF
Depth: 6.375 m / 20.915 ft
Duration: 930.0 s

u Min: -18.9 ft
u Max: 1.7 ft
u Final: 1.5 ft

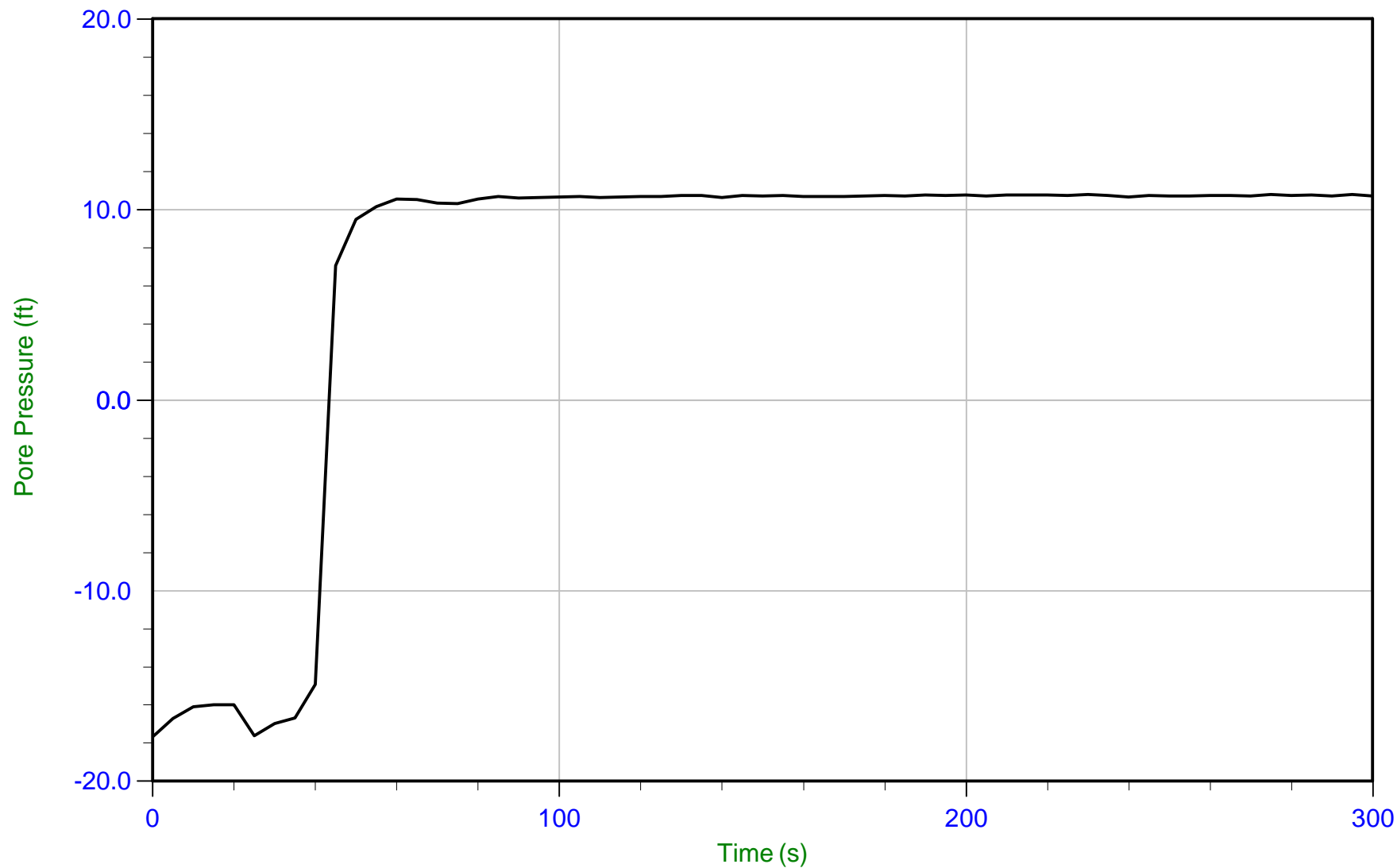
WT: 5.922 m / 19.429 ft
Ueq: 1.5 ft



Wood plc

Job No: 20-52-21054
Date: 07/15/2020 12:02
Site: Cholla Power Plant

Sounding: CPT-09
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP09.PPF
Depth: 9.150 m / 30.019 ft
Duration: 300.0 s

u Min: -17.7 ft
u Max: 10.8 ft
u Final: 10.7 ft

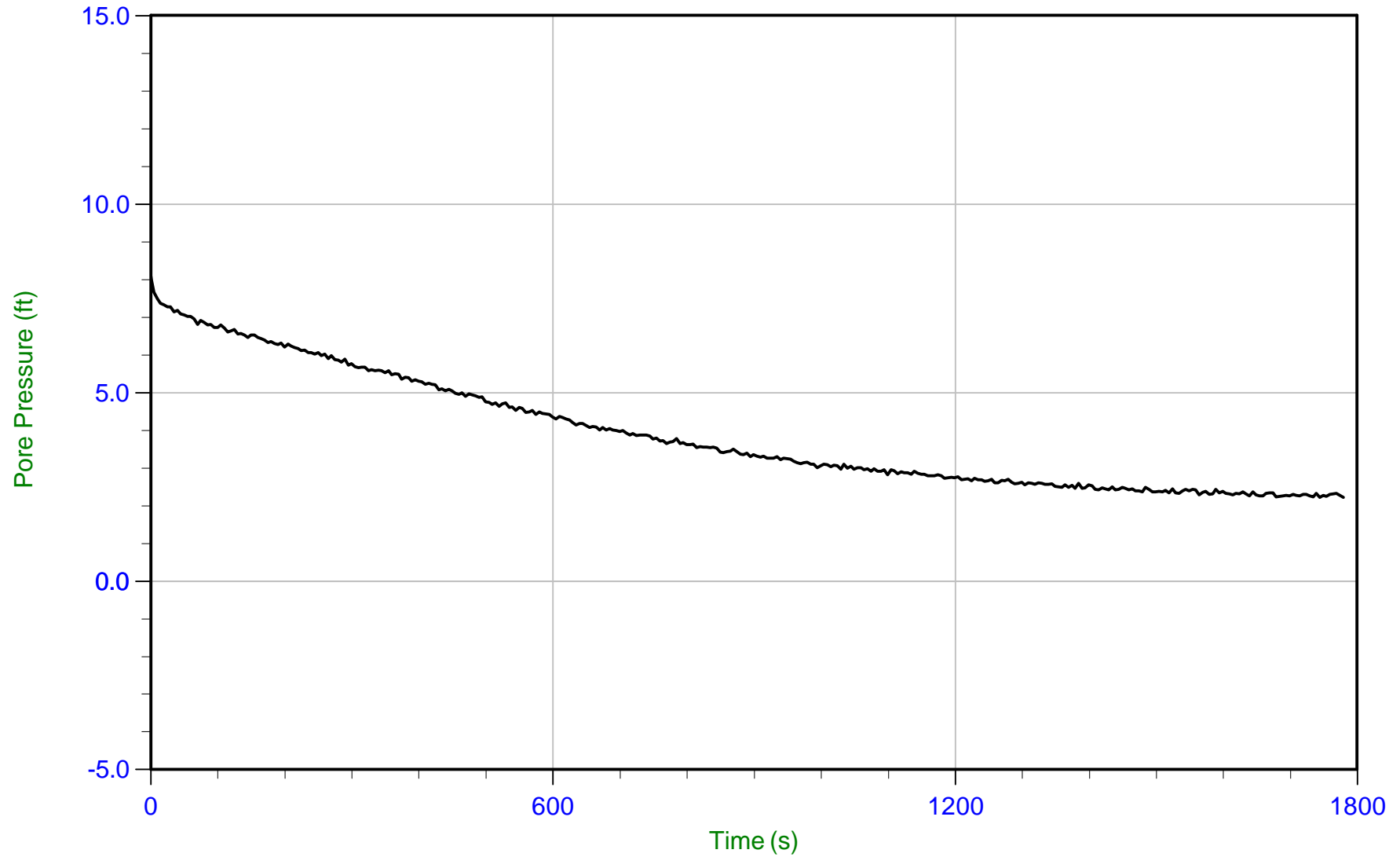
WT: 5.901 m / 19.360 ft
Ueq: 10.7 ft



Wood plc

Job No: 20-52-21054
Date: 07/15/2020 13:15
Site: Cholla Power Plant

Sounding: CPT-10
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP10.PPF
Depth: 5.350 m / 17.552 ft
Duration: 1780.0 s

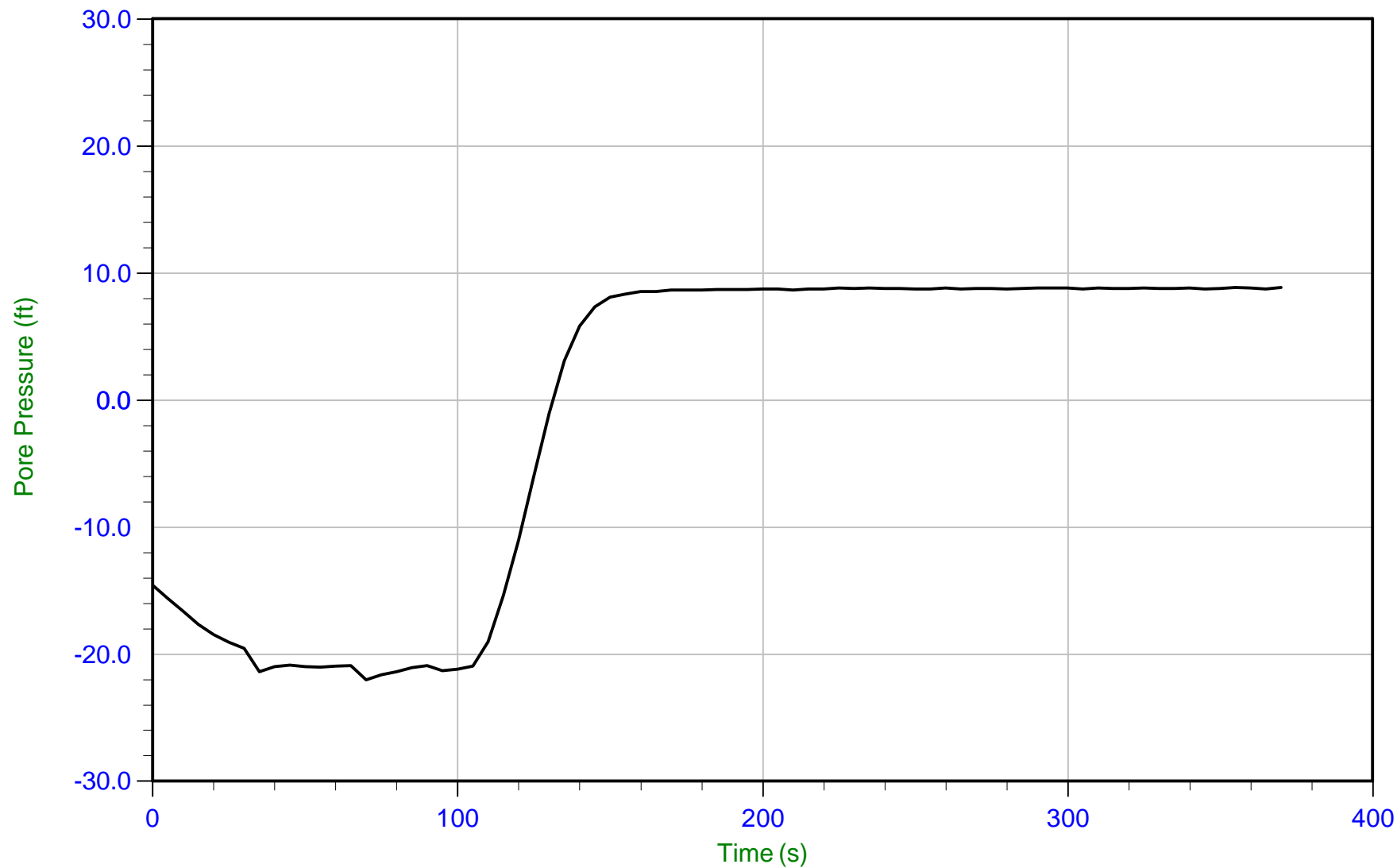
u Min: 2.2 ft
u Max: 8.1 ft
u Final: 2.2 ft



Wood plc

Job No: 20-52-21054
Date: 07/15/2020 13:15
Site: Cholla Power Plant

Sounding: CPT-10
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP10.PPF
Depth: 8.750 m / 28.707 ft
Duration: 370.0 s

u Min: -22.0 ft
u Max: 8.9 ft
u Final: 8.9 ft

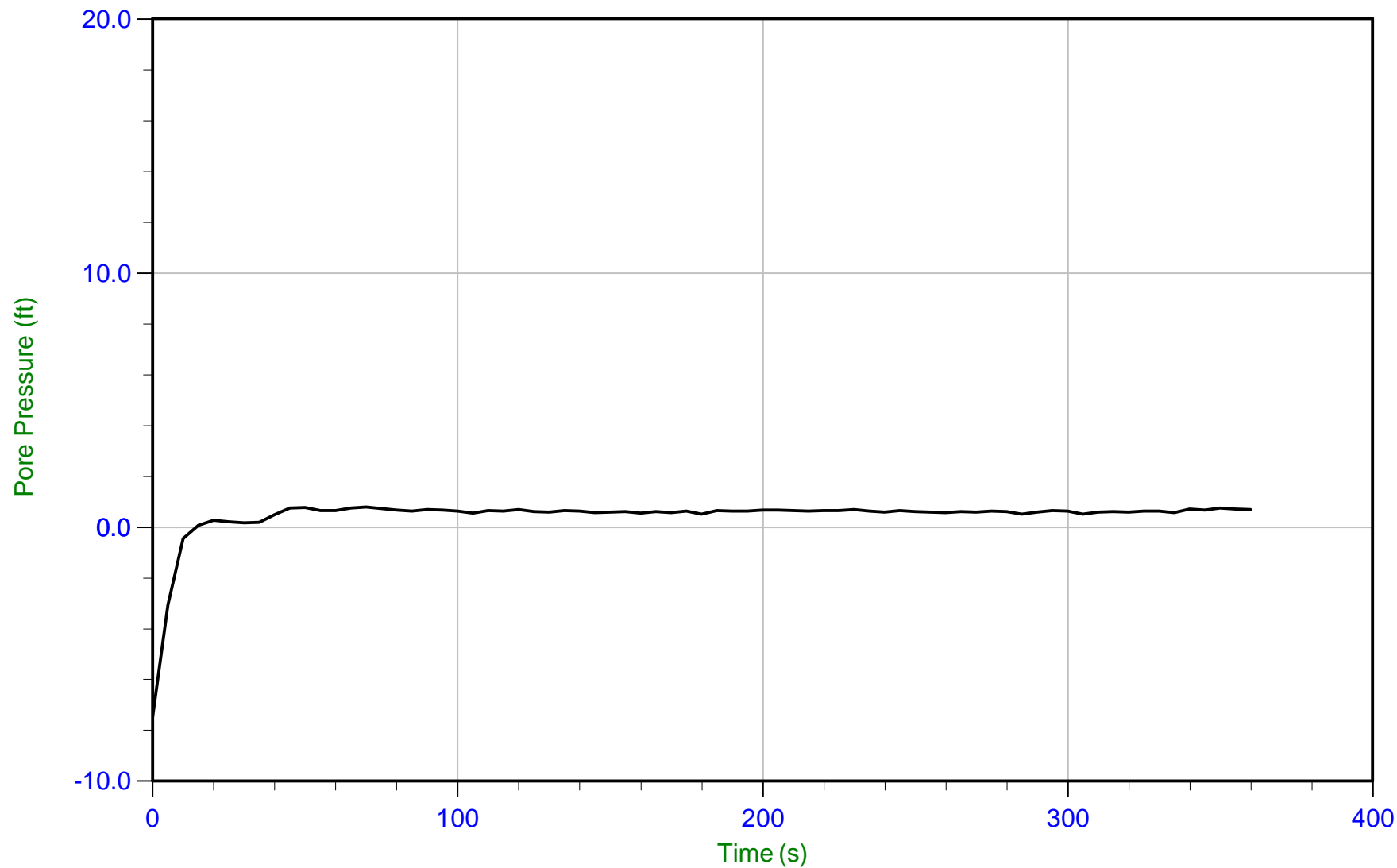
WT: 6.064 m / 19.895 ft
Ueq: 8.8 ft



Wood plc

Job No: 20-52-21054
Date: 07/15/2020 15:02
Site: Cholla Power Plant

Sounding: CPT-11
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP11.PPF
Depth: 5.250 m / 17.224 ft
Duration: 360.0 s

u Min: -7.5 ft
u Max: 0.8 ft
u Final: 0.7 ft

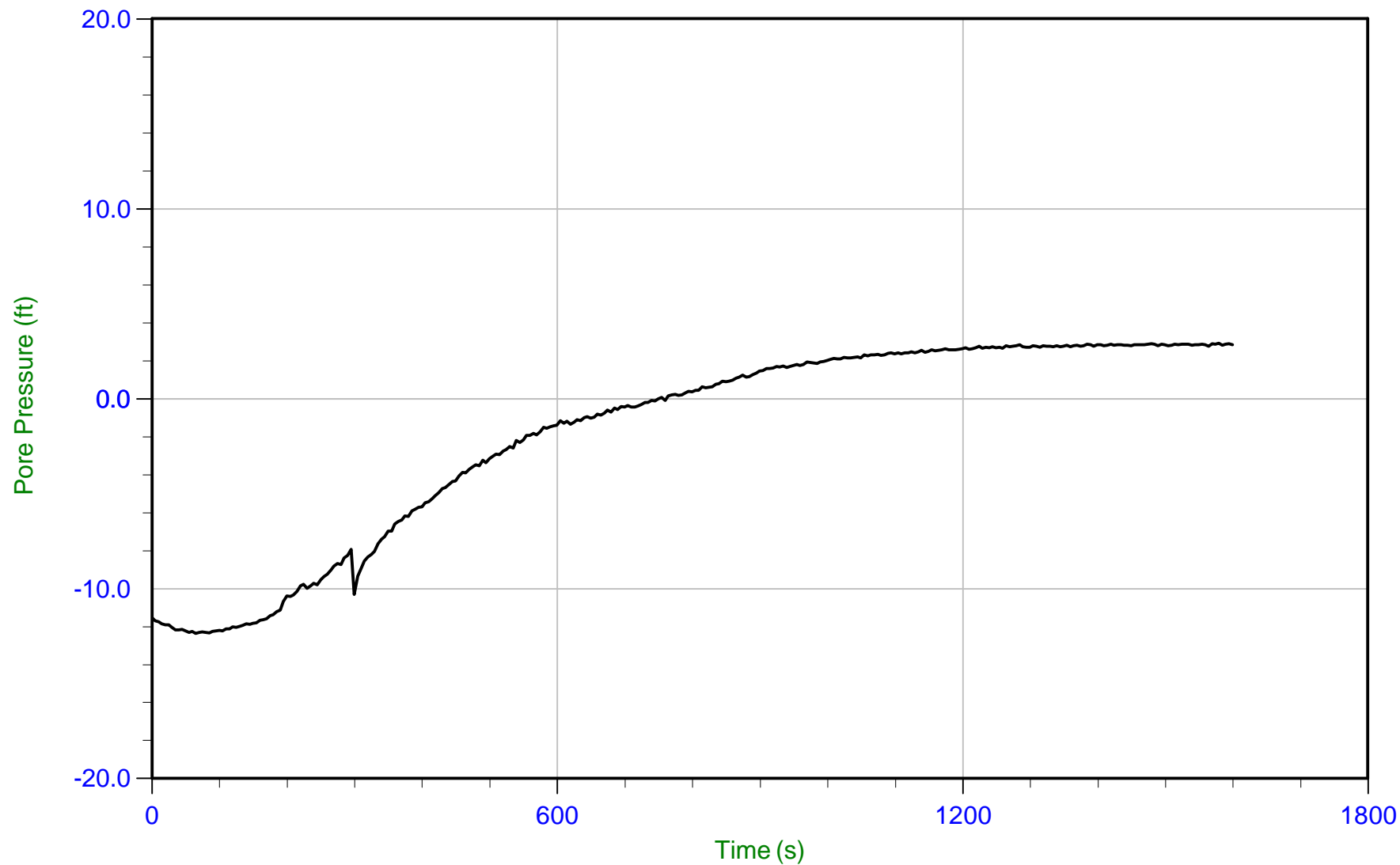
WT: 5.036 m / 16.522 ft
Ueq: 0.7 ft



Wood plc

Job No: 20-52-21054
Date: 07/16/2020 08:09
Site: Cholla Power Plant

Sounding: CPT-12
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP12.PPF
Depth: 5.975 m / 19.603 ft
Duration: 1600.0 s

u Min: -12.4 ft
u Max: 2.9 ft
u Final: 2.8 ft

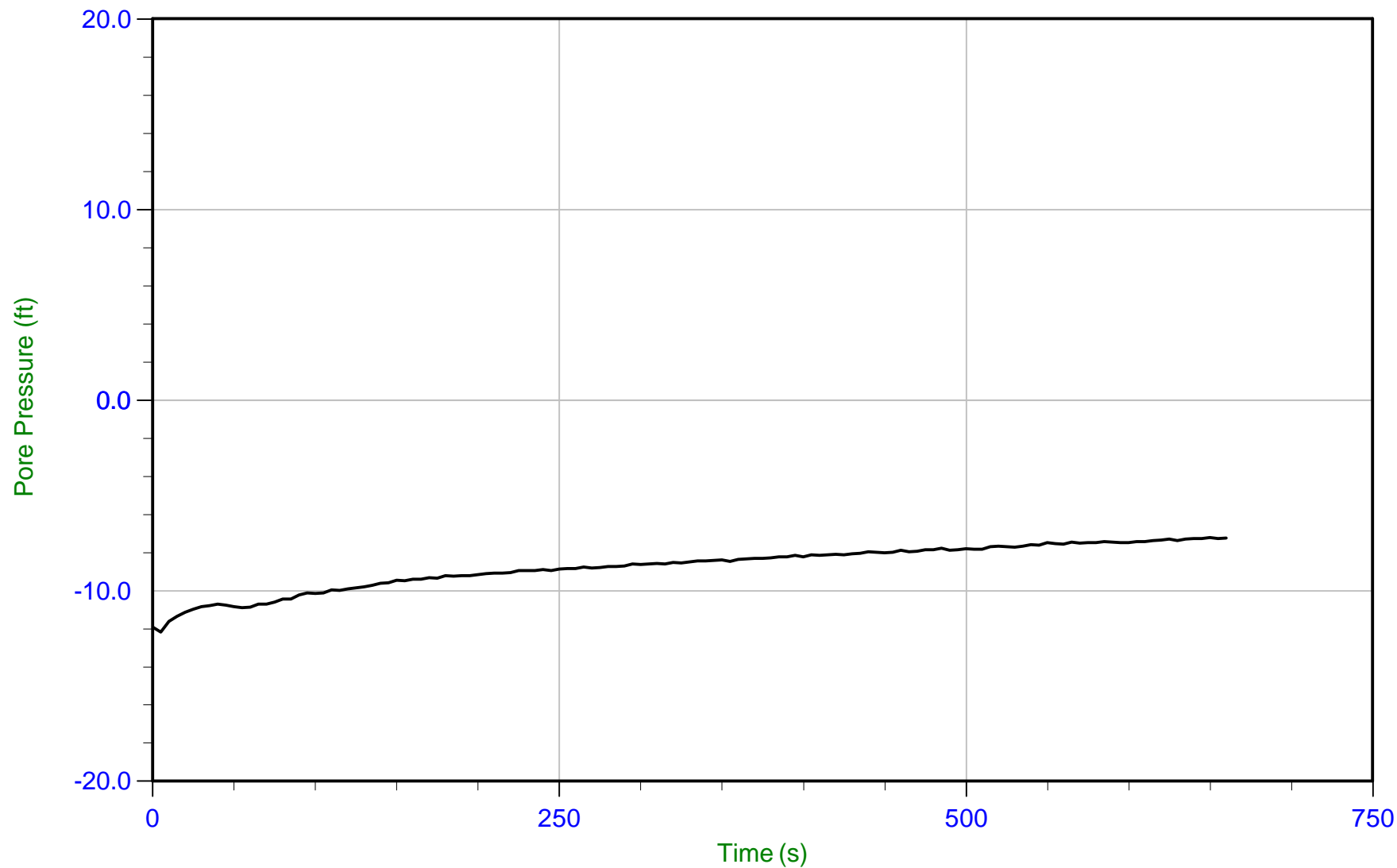
WT: 5.082 m / 16.673 ft
Ueq: 2.9 ft



Wood plc

Job No: 20-52-21054
Date: 07/16/2020 09:23
Site: Cholla Power Plant

Sounding: CPT-13
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP13.PPF
Depth: 10.325 m / 33.874 ft
Duration: 660.0 s

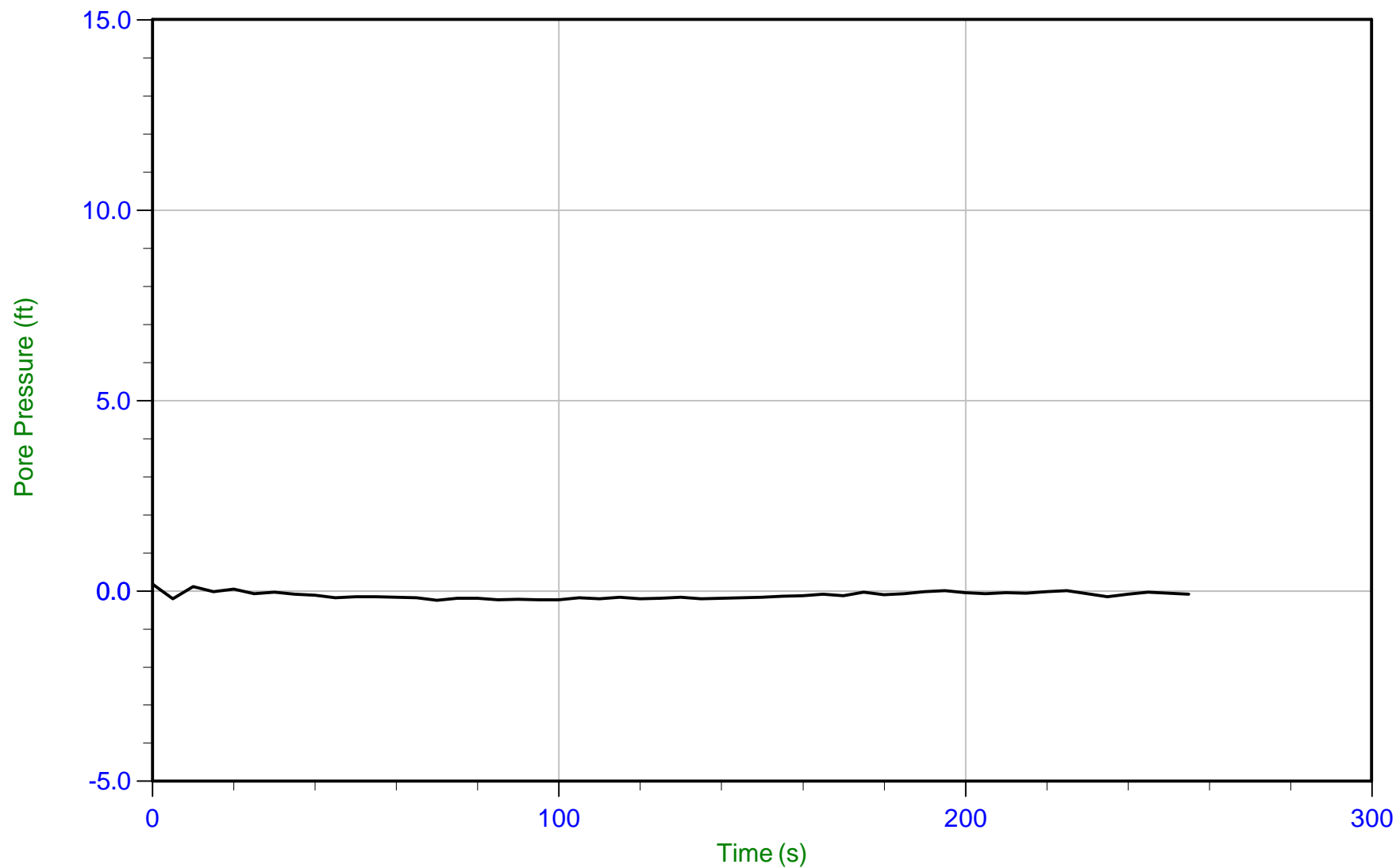
u Min: -12.2 ft
u Max: -7.2 ft
u Final: -7.2 ft



Wood plc

Job No: 20-52-21054
Date: 07/16/2020 10:34
Site: Cholla Power Plant

Sounding: CPT-14
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP14.PPF
Depth: 4.775 m / 15.666 ft
Duration: 255.0 s

u Min: -0.2 ft
u Max: 0.2 ft
u Final: -0.1 ft

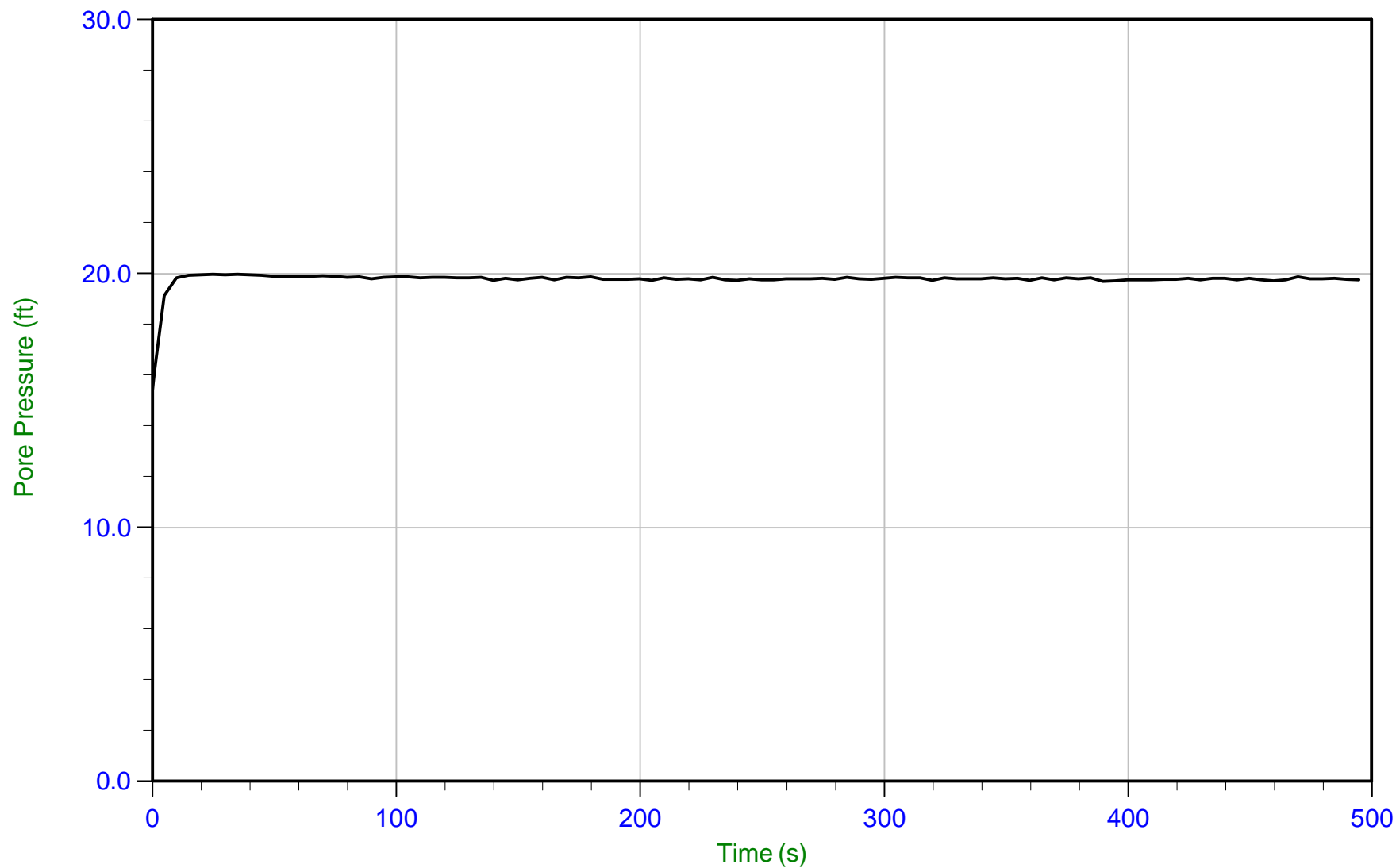
WT: 4.775 m / 15.666 ft
Ueq: 0.0 ft



Wood plc

Job No: 20-52-21054
Date: 07/16/2020 10:34
Site: Cholla Power Plant

Sounding: CPT-14
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP14.PPF
Depth: 12.150 m / 39.862 ft
Duration: 495.0 s

u Min: 15.4 ft
u Max: 20.0 ft
u Final: 19.7 ft

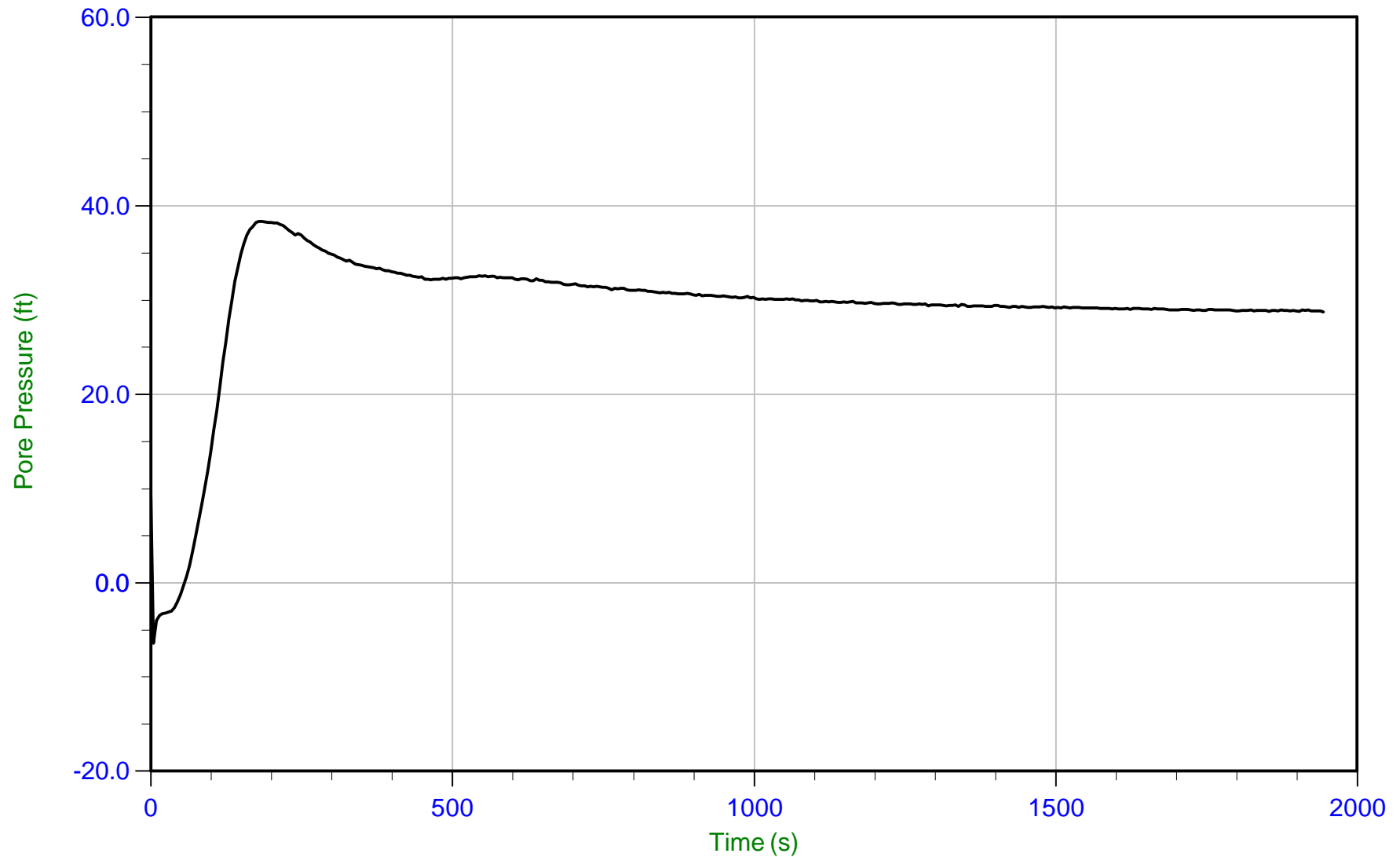
WT: 6.119 m / 20.075 ft
Ueq: 19.8 ft



Wood plc

Job No: 20-52-21054
Date: 07/16/2020 10:34
Site: Cholla Power Plant

Sounding: CPT-14
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP14.PPF
Depth: 15.100 m / 49.540 ft
Duration: 1945.0 s

u Min: -6.4 ft
u Max: 38.3 ft
u Final: 28.7 ft

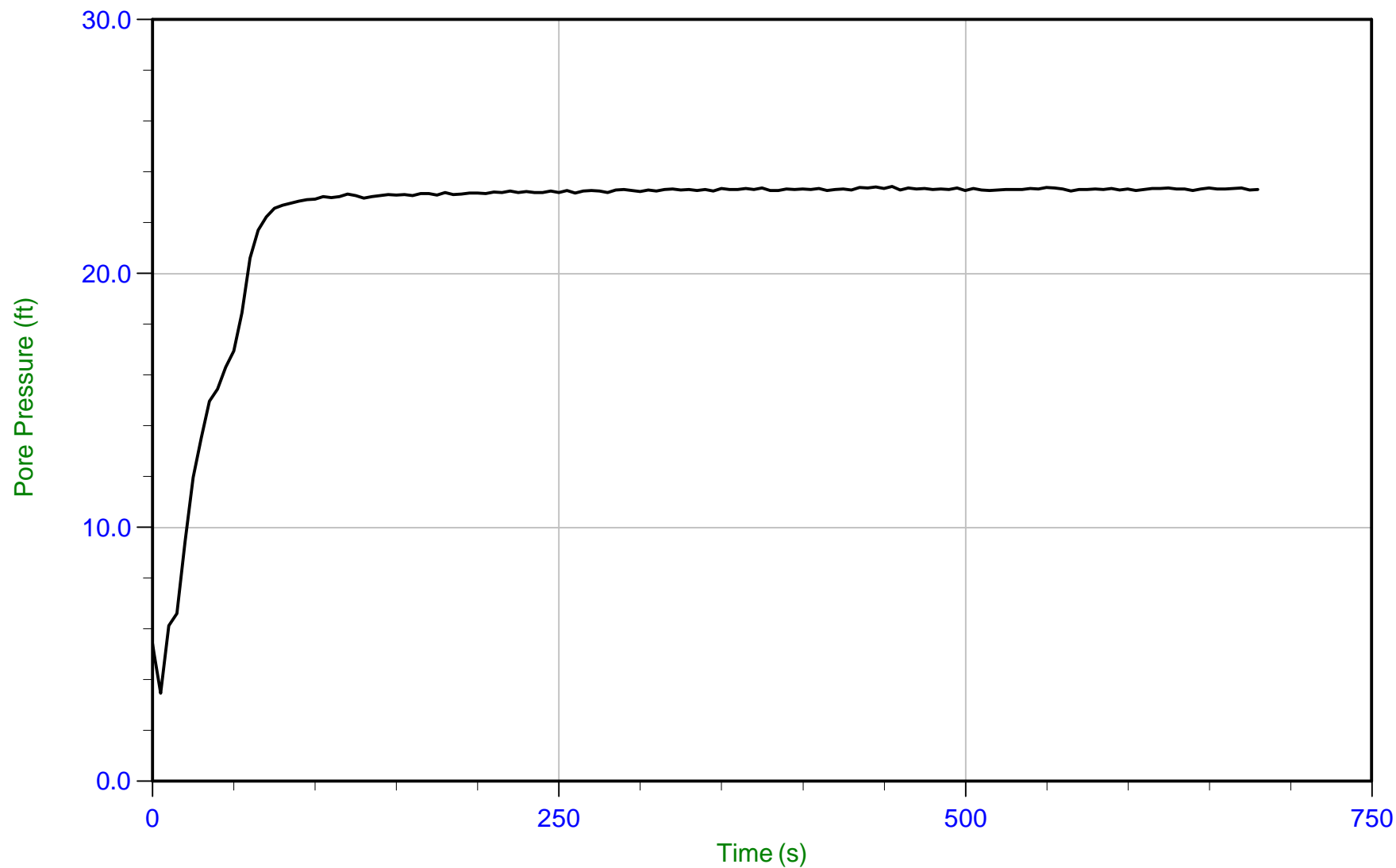
WT: 6.338 m / 20.794 ft
Ueq: 28.7 ft



Wood plc

Job No: 20-52-21054
Date: 07/16/2020 12:28
Site: Cholla Power Plant

Sounding: CPT-15
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP15.PPF
Depth: 14.125 m / 46.341 ft
Duration: 680.0 s

u Min: 3.5 ft
u Max: 23.4 ft
u Final: 23.3 ft

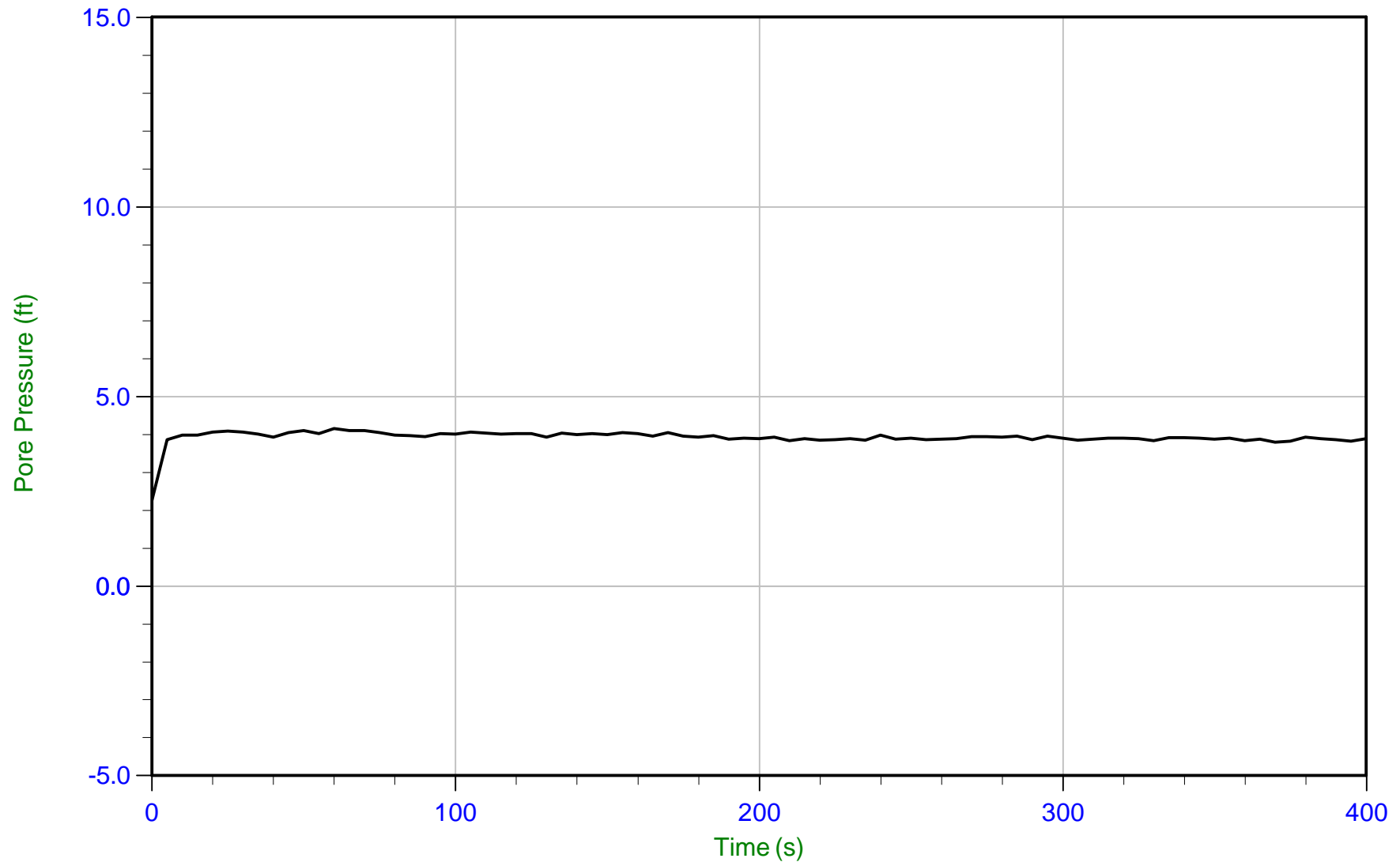
WT: 7.019 m / 23.028 ft
Ueq: 23.3 ft



Wood plc

Job No: 20-52-21054
Date: 07/14/2020 14:26
Site: Cholla Power Plant

Sounding: CPT-16
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP16.PPF
Depth: 4.875 m / 15.994 ft
Duration: 400.0 s

u Min: 2.3 ft
u Max: 4.2 ft
u Final: 3.9 ft

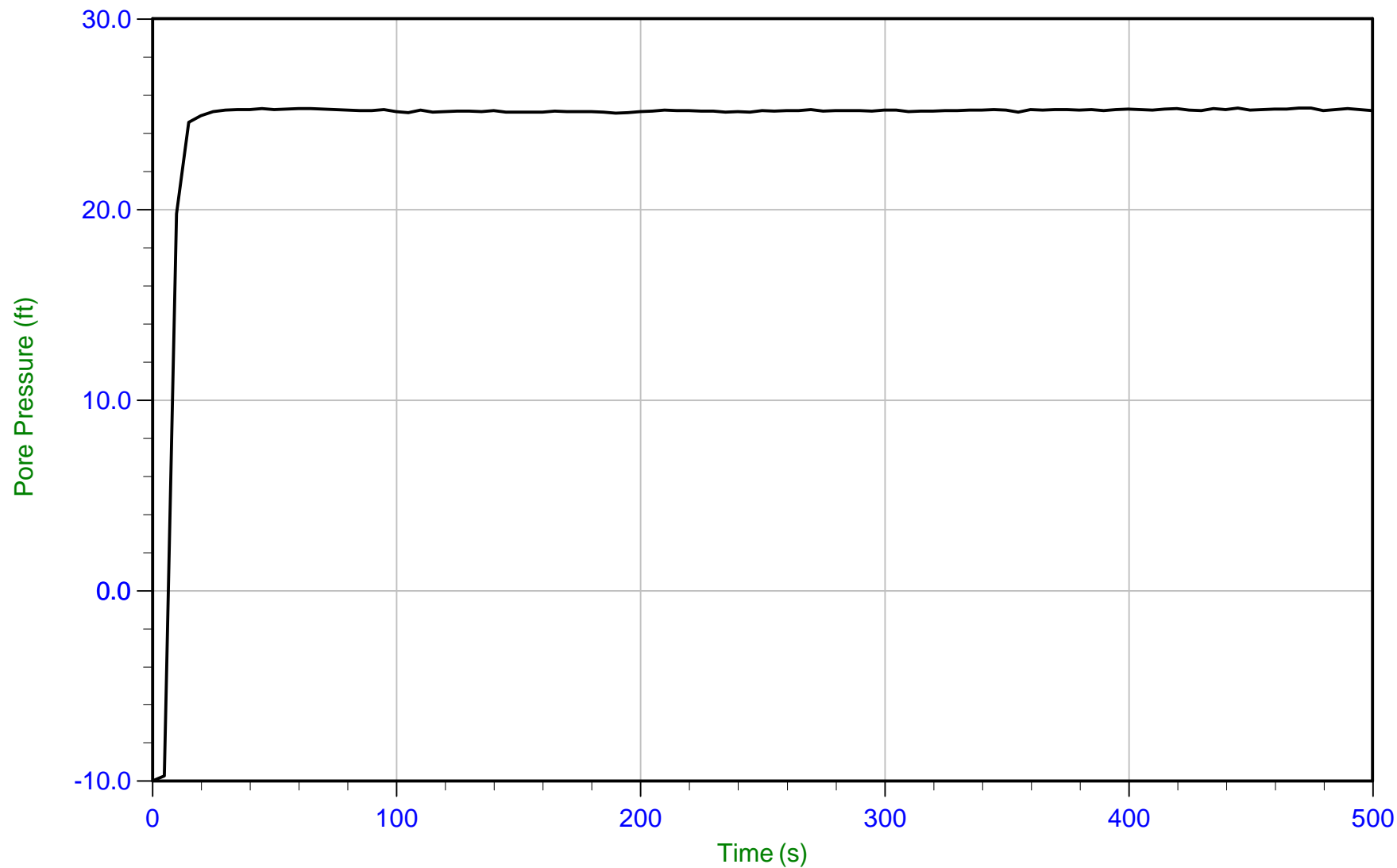
WT: 3.695 m / 12.123 ft
Ueq: 3.9 ft



Wood plc

Job No: 20-52-21054
Date: 07/14/2020 14:26
Site: Cholla Power Plant

Sounding: CPT-16
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP16.PPF
Depth: 14.725 m / 48.310 ft
Duration: 500.0 s

u Min: -10.0 ft
u Max: 25.3 ft
u Final: 25.2 ft

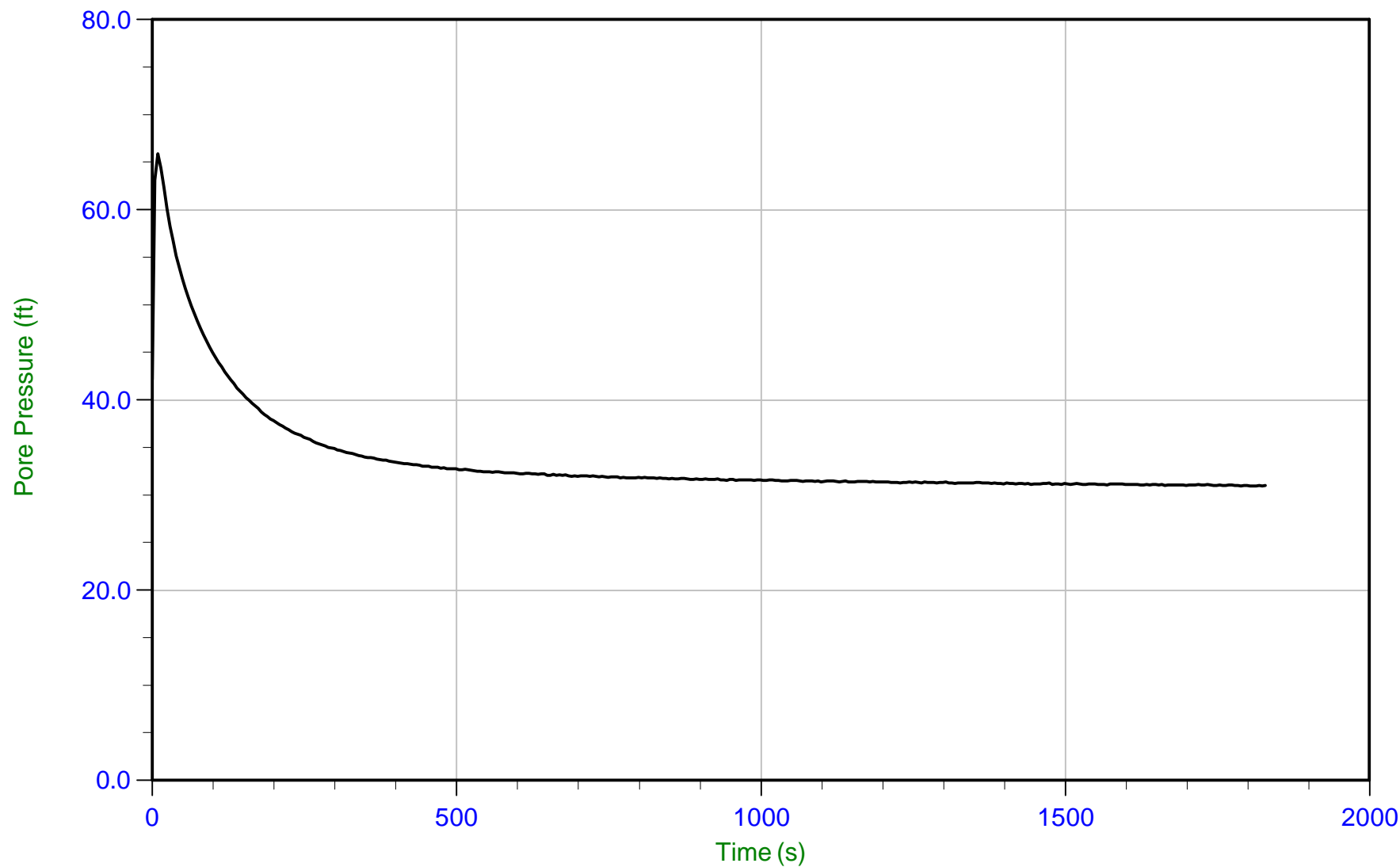
WT: 7.031 m / 23.067 ft
Ueq: 25.2 ft



Wood plc

Job No: 20-52-21054
Date: 07/14/2020 12:46
Site: Cholla Power Plant

Sounding: CPT-17
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP17.PPF
Depth: 13.600 m / 44.619 ft
Duration: 1830.0 s

u Min: 31.0 ft
u Max: 65.9 ft
u Final: 31.0 ft

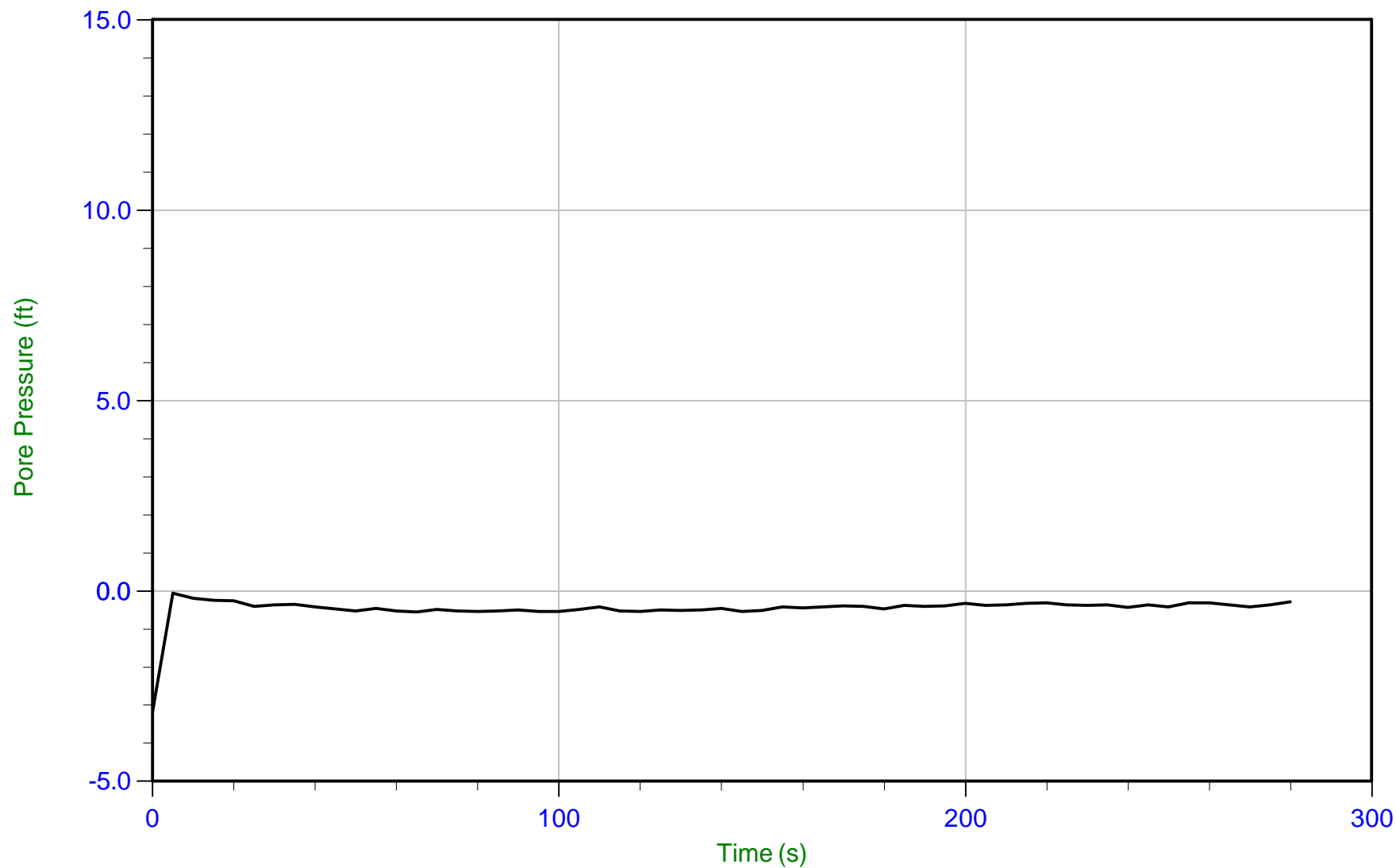
WT: 4.152 m / 13.622 ft
Ueq: 31.0 ft



Wood plc

Job No: 20-52-21054
Date: 07/14/2020 10:41
Site: Cholla Power Plant

Sounding: CPT-18
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP18.PPF
Depth: 1.275 m / 4.183 ft
Duration: 280.0 s

u Min: -3.2 ft
u Max: -0.1 ft
u Final: -0.3 ft

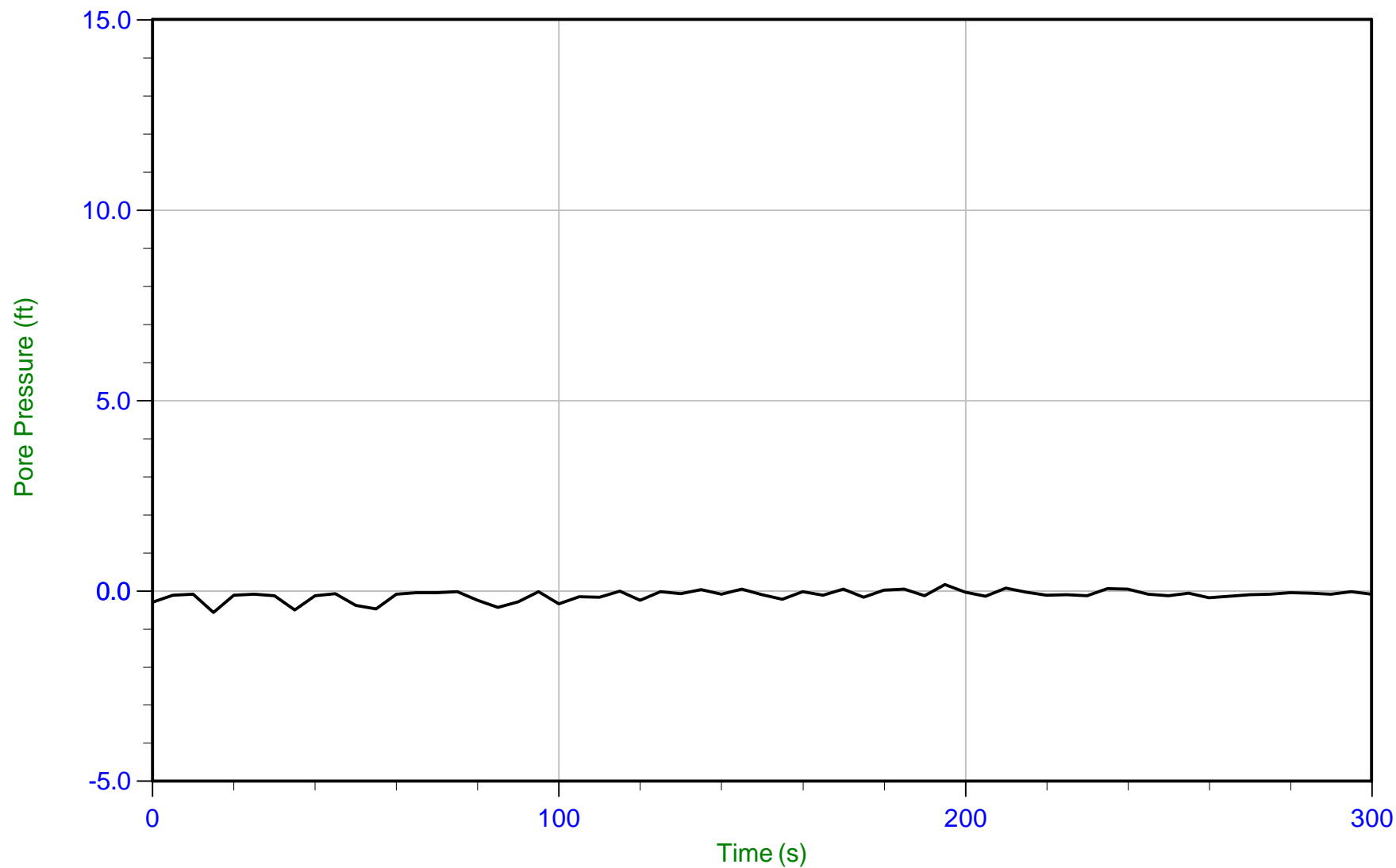
WT: 1.275 m / 4.183 ft
Ueq: 0.0 ft



Wood plc

Job No: 20-52-21054
Date: 07/14/2020 10:41
Site: Cholla Power Plant

Sounding: CPT-18
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP18.PPF
Depth: 3.850 m / 12.631 ft
Duration: 300.0 s

u Min: -0.6 ft
u Max: 0.2 ft
u Final: -0.1 ft

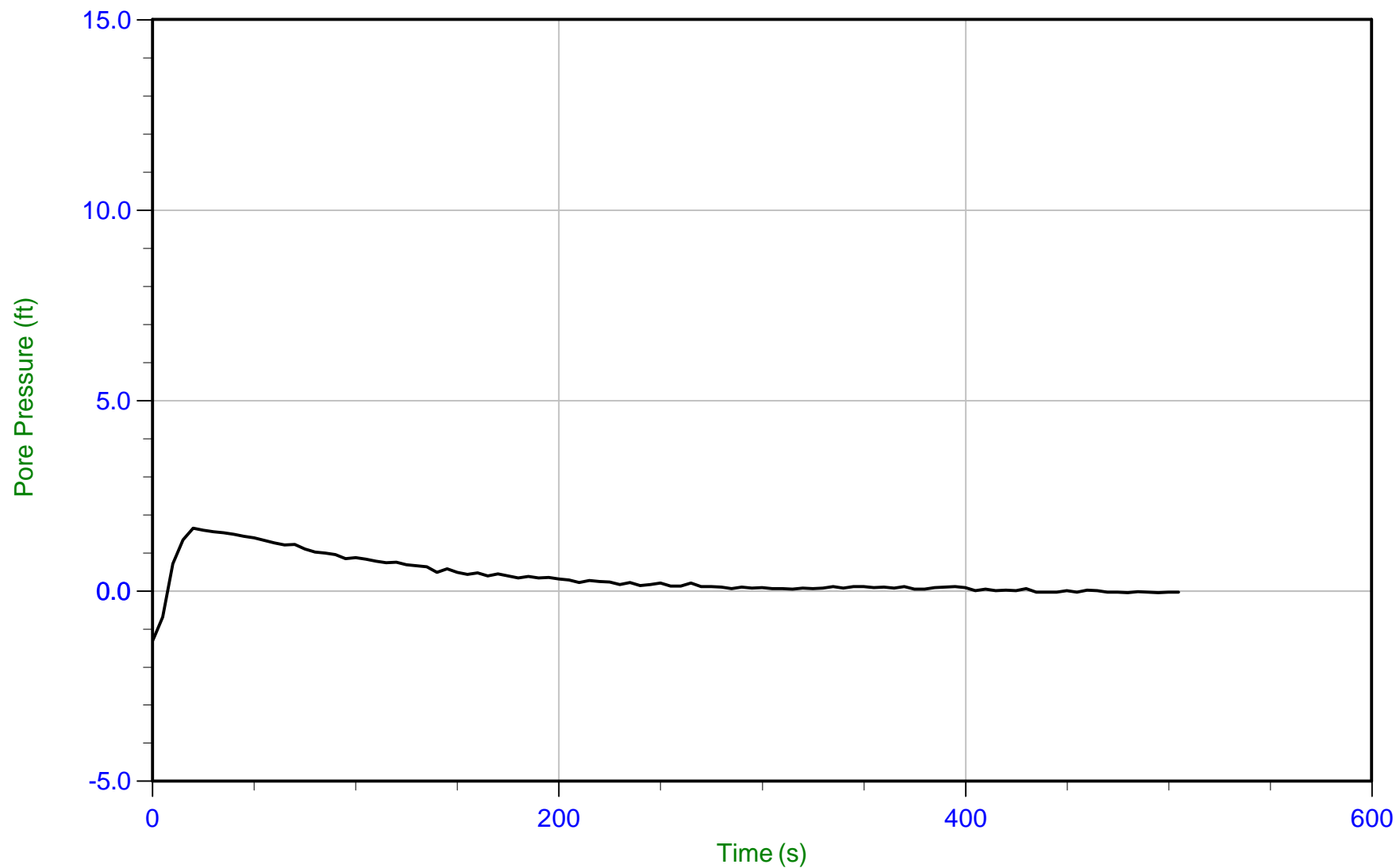
WT: 3.850 m / 12.631 ft
Ueq: 0.0 ft



Wood plc

Job No: 20-52-21054
Date: 07/14/2020 10:41
Site: Cholla Power Plant

Sounding: CPT-18
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP18.PPF
Depth: 5.250 m / 17.224 ft
Duration: 505.0 s

u Min: -1.3 ft
u Max: 1.7 ft
u Final: -0.0 ft

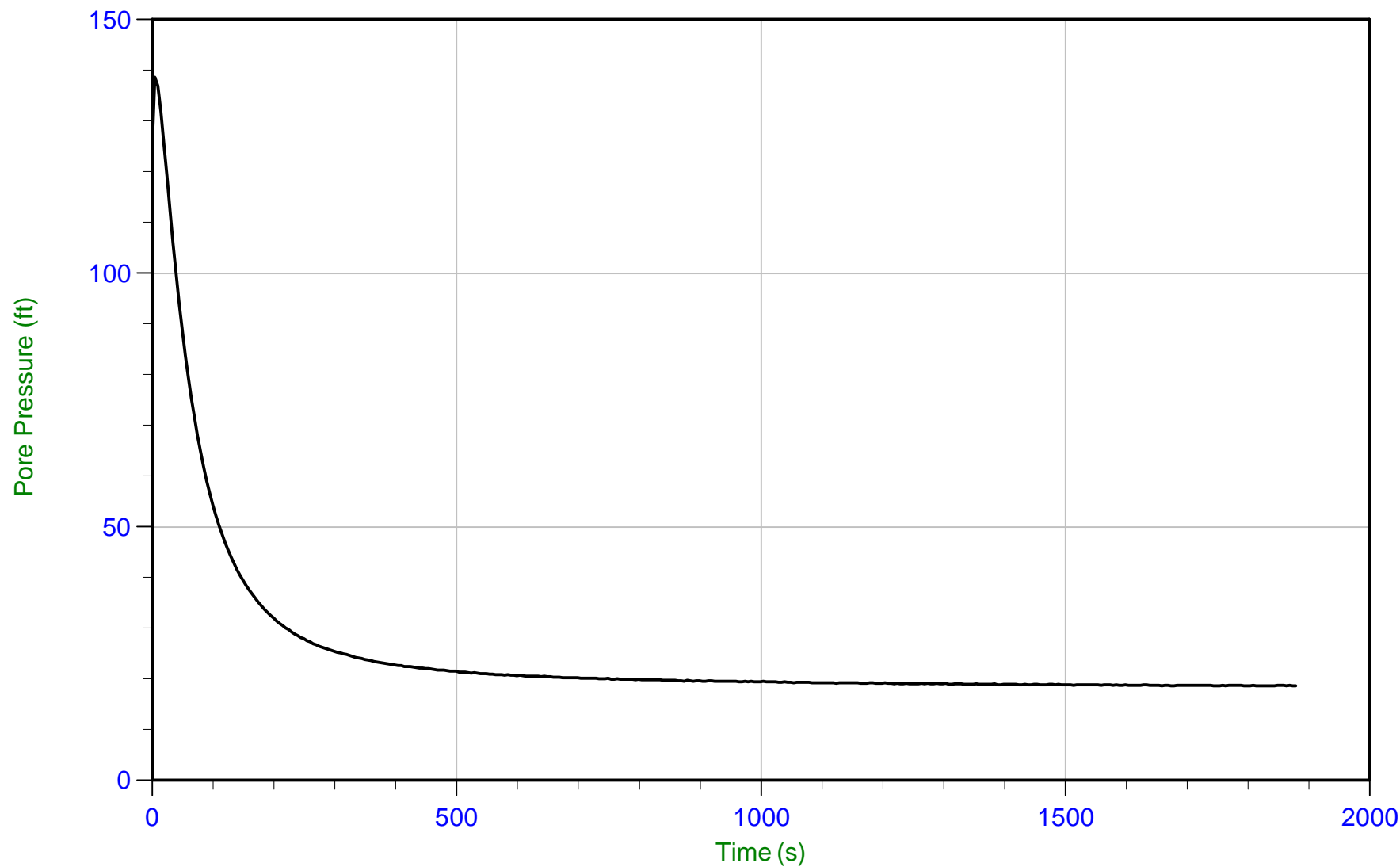
WT: 5.250 m / 17.224 ft
Ueq: 0.0 ft



Wood plc

Job No: 20-52-21054
Date: 07/14/2020 10:41
Site: Cholla Power Plant

Sounding: CPT-18
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP18.PPF
Depth: 11.850 m / 38.877 ft
Duration: 1880.0 s

u Min: 18.6 ft
u Max: 138.7 ft
u Final: 18.7 ft

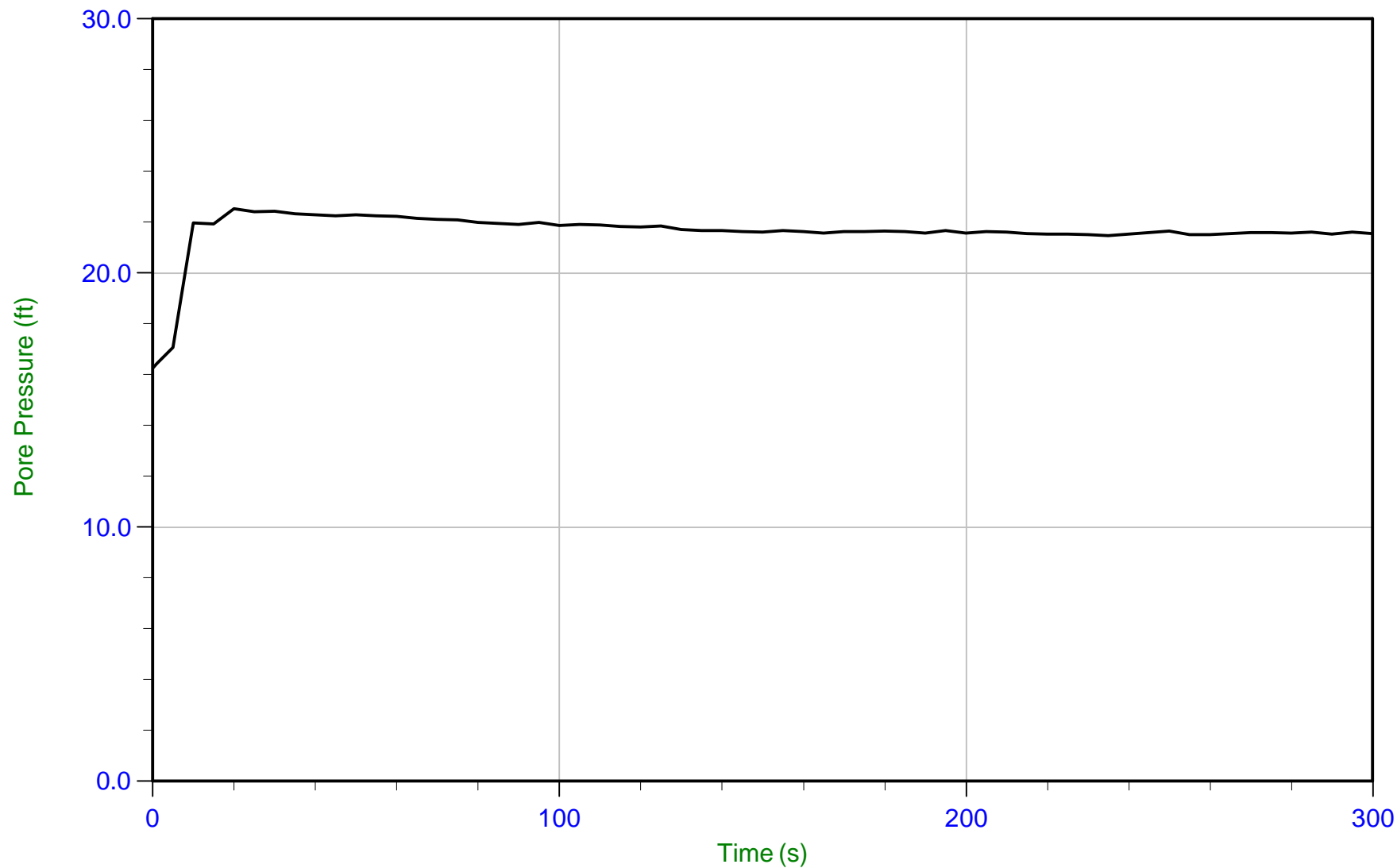
WT: 6.168 m / 20.236 ft
Ueq: 18.6 ft



Wood plc

Job No: 20-52-21054
Date: 07/14/2020 10:41
Site: Cholla Power Plant

Sounding: CPT-18
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP18.PPF
Depth: 12.850 m / 42.158 ft
Duration: 300.0 s

u Min: 16.3 ft
u Max: 22.5 ft
u Final: 21.6 ft

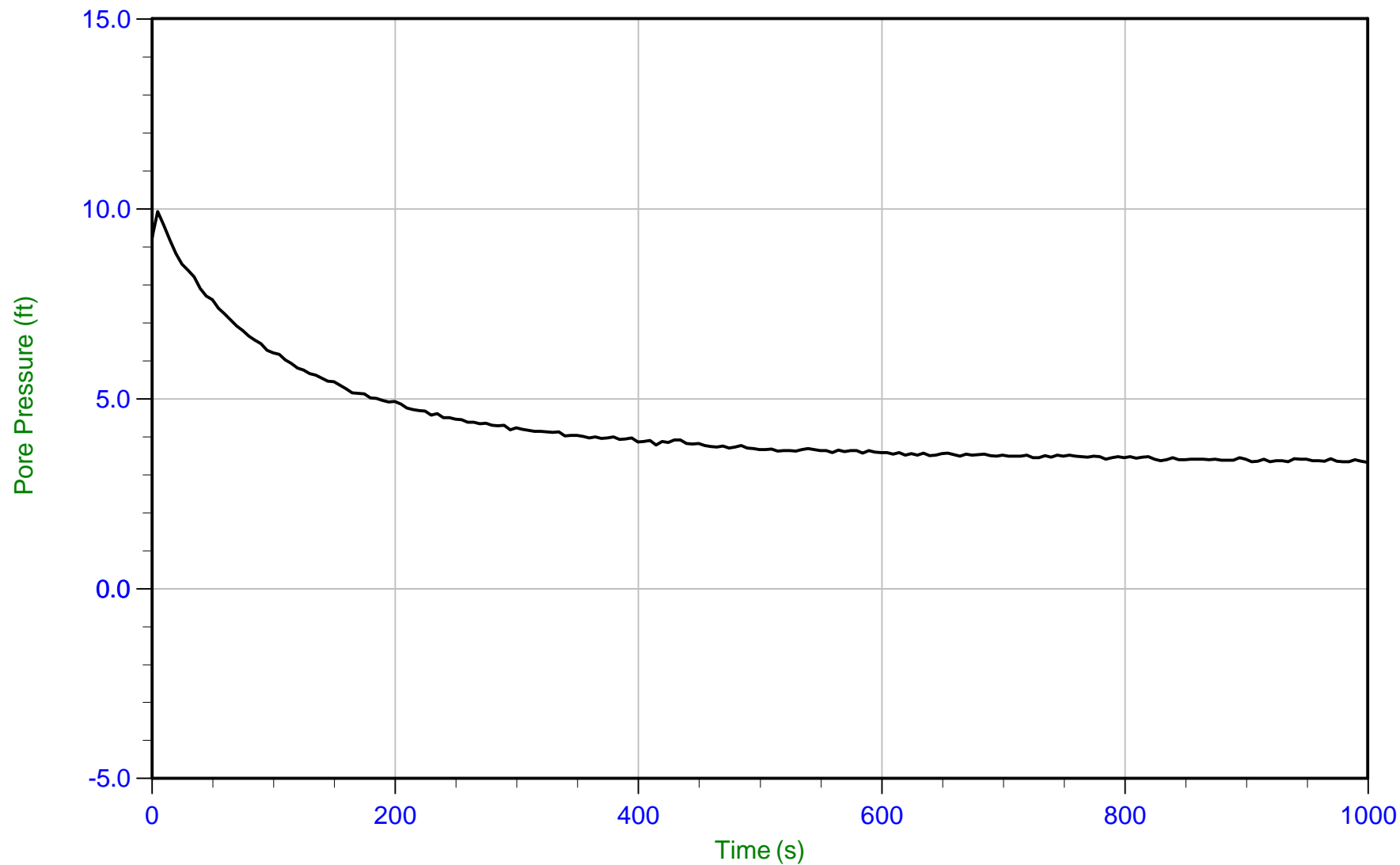
WT: 6.269 m / 20.567 ft
Ueq: 21.6 ft



Wood plc

Job No: 20-52-21054
Date: 07/14/2020 08:23
Site: Cholla Power Plant

Sounding: CPT-19
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP19.PPF
Depth: 1.225 m / 4.019 ft
Duration: 1000.0 s

u Min: 3.3 ft
u Max: 9.9 ft
u Final: 3.3 ft

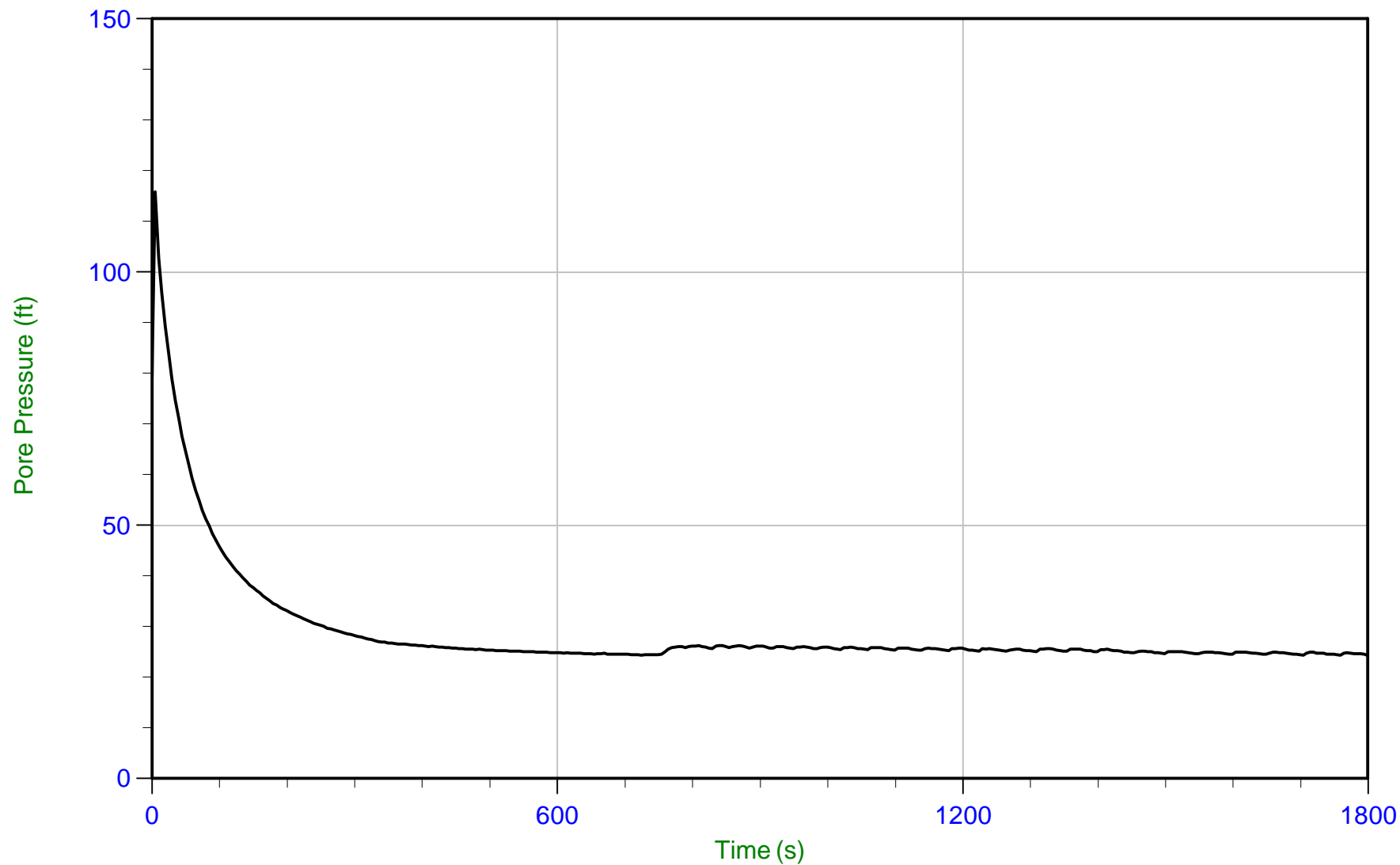
WT: 0.209 m / 0.686 ft
Ueq: 3.3 ft



Wood plc

Job No: 20-52-21054
Date: 07/14/2020 08:23
Site: Cholla Power Plant

Sounding: CPT-19
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP19.PPF
Depth: 6.825 m / 22.391 ft
Duration: 1800.0 s

u Min: 24.3 ft
u Max: 115.8 ft
u Final: 24.4 ft

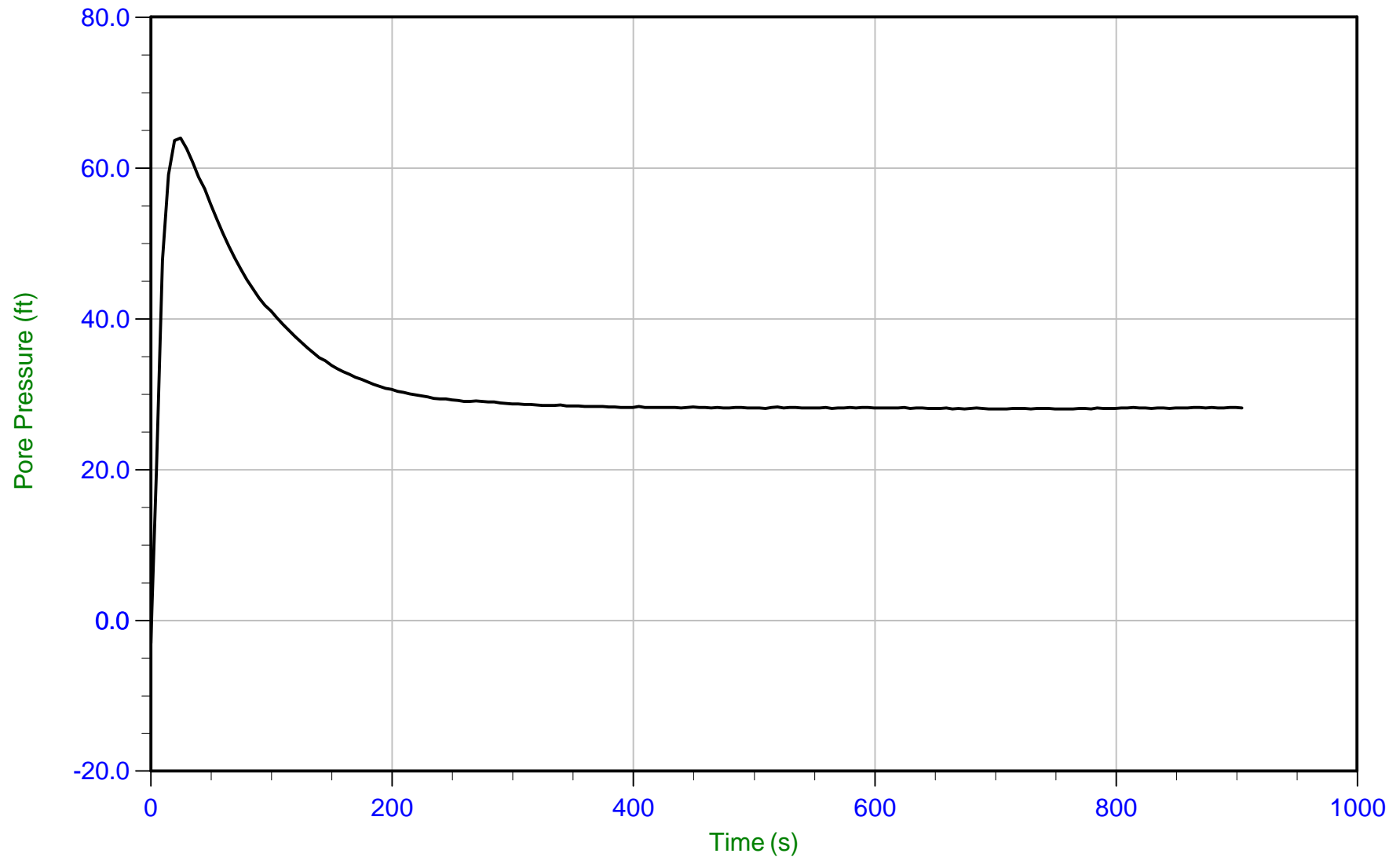
WT: -0.611 m / -2.005 ft
Ueq: 24.4 ft



Wood plc

Job No: 20-52-21054
Date: 07/14/2020 08:23
Site: Cholla Power Plant

Sounding: CPT-19
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP19.PPF
Depth: 15.300 m / 50.196 ft
Duration: 905.0 s

u Min: -3.0 ft
u Max: 64.0 ft
u Final: 28.2 ft

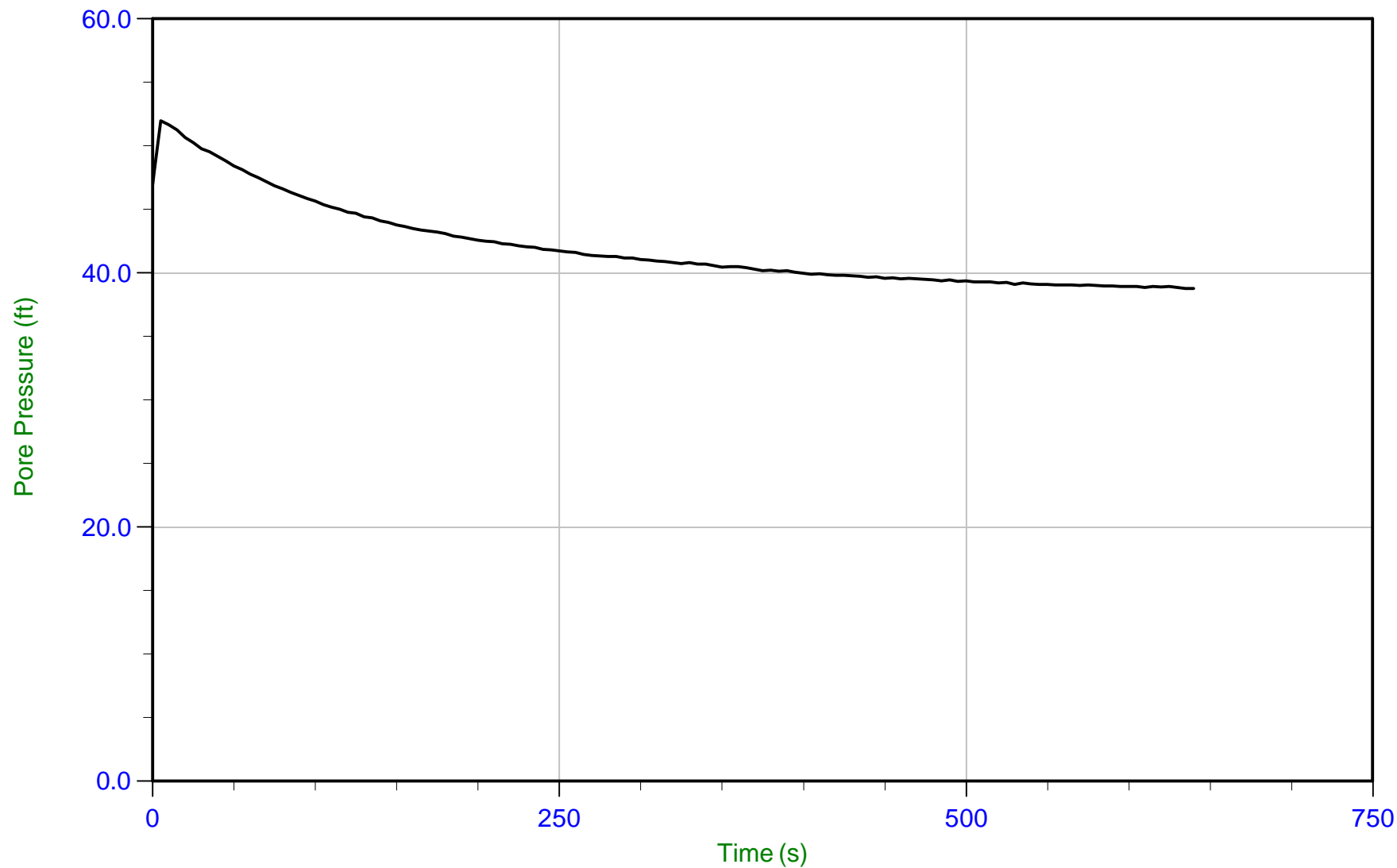
WT: 6.706 m / 22.001 ft
Ueq: 28.2 ft



Wood plc

Job No: 20-52-21054
Date: 07/13/2020 11:34
Site: Cholla Power Plant

Sounding: CPT-20
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP20.PPF
Depth: 3.725 m / 12.221 ft
Duration: 640.0 s

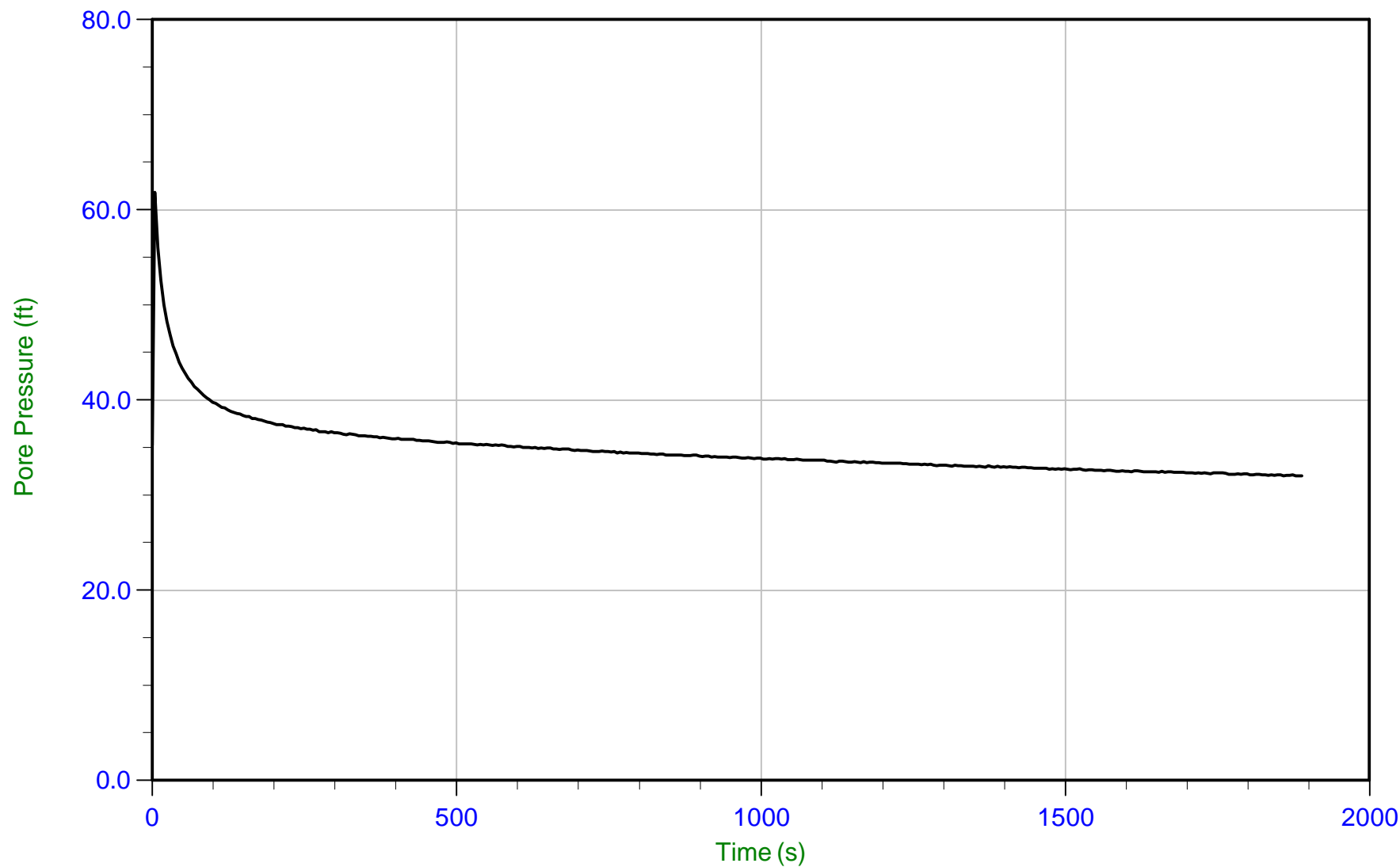
u Min: 38.8 ft
u Max: 52.0 ft
u Final: 38.8 ft



Wood plc

Job No: 20-52-21054
Date: 07/13/2020 11:34
Site: Cholla Power Plant

Sounding: CPT-20
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP20.PPF
Depth: 6.725 m / 22.063 ft
Duration: 1890.0 s

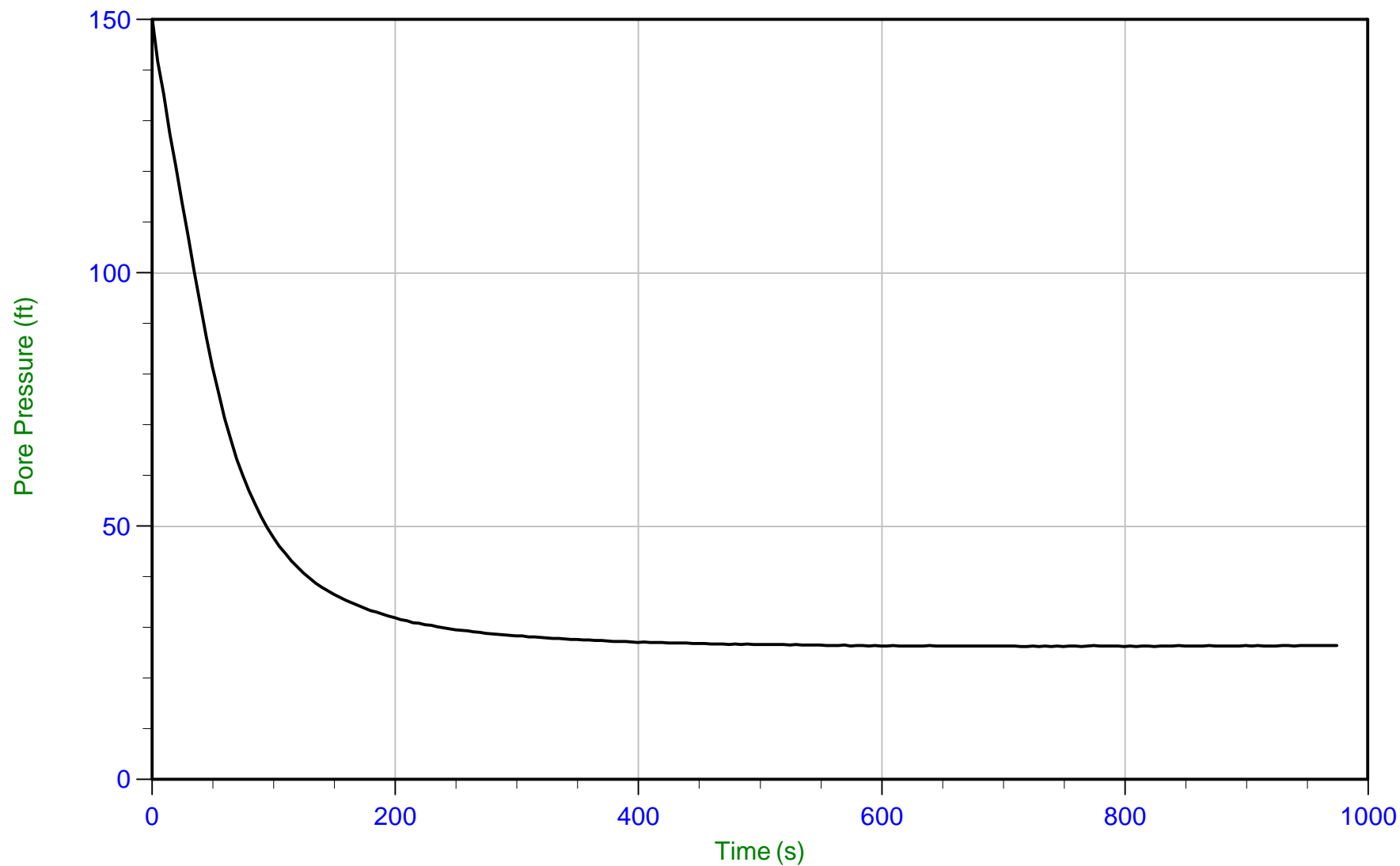
u Min: 32.0 ft
u Max: 61.9 ft
u Final: 32.0 ft



Wood plc

Job No: 20-52-21054
Date: 07/13/2020 11:34
Site: Cholla Power Plant

Sounding: CPT-20
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP20.PPF
Depth: 12.725 m / 41.748 ft
Duration: 975.0 s

u Min: 26.3 ft
u Max: 150.7 ft
u Final: 26.4 ft

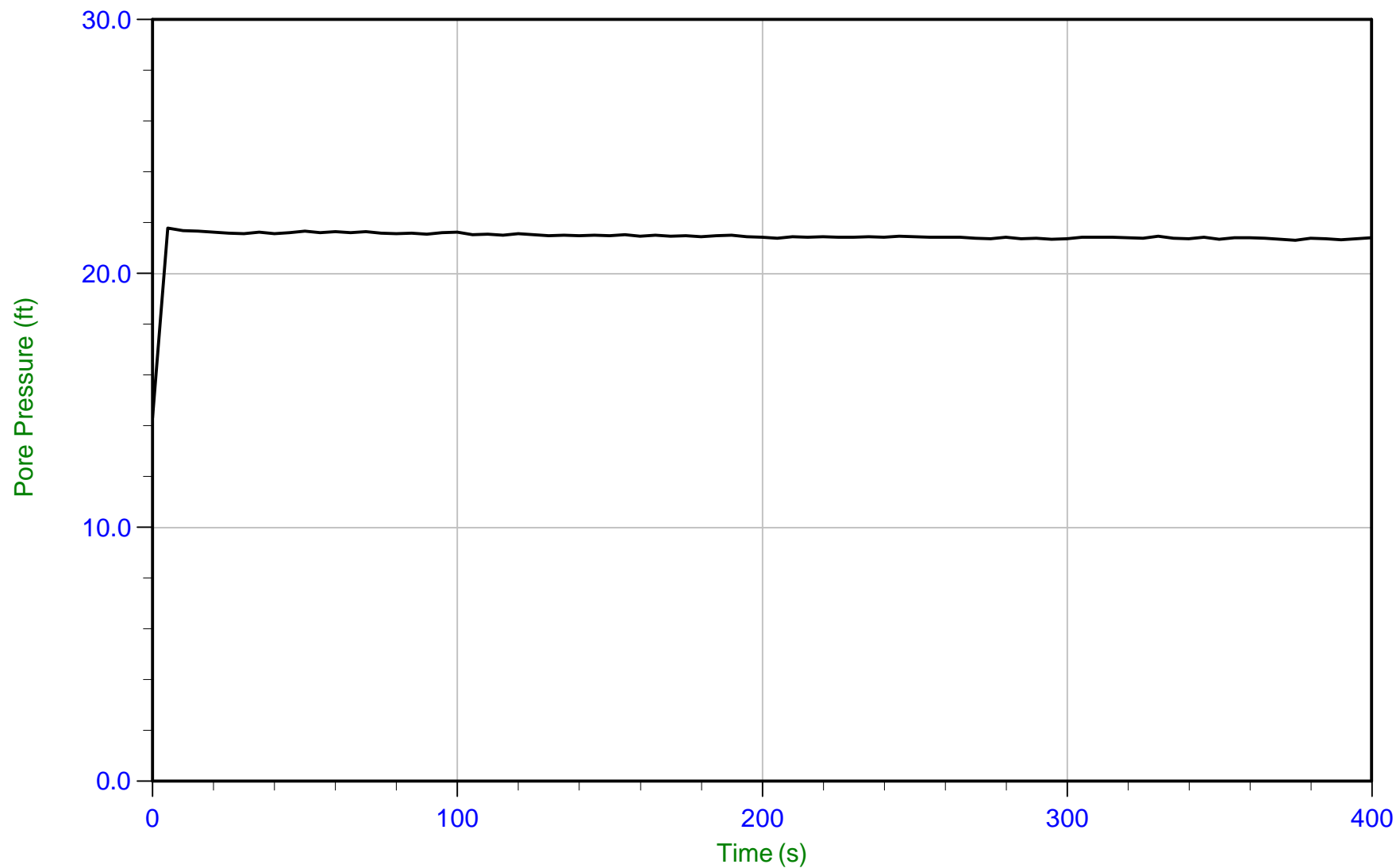
WT: 4.668 m / 15.315 ft
Ueq: 26.4 ft



Wood plc

Job No: 20-52-21054
Date: 07/13/2020 11:34
Site: Cholla Power Plant

Sounding: CPT-20
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP20.PPF
Depth: 13.325 m / 43.717 ft
Duration: 400.0 s

u Min: 14.3 ft
u Max: 21.8 ft
u Final: 21.4 ft

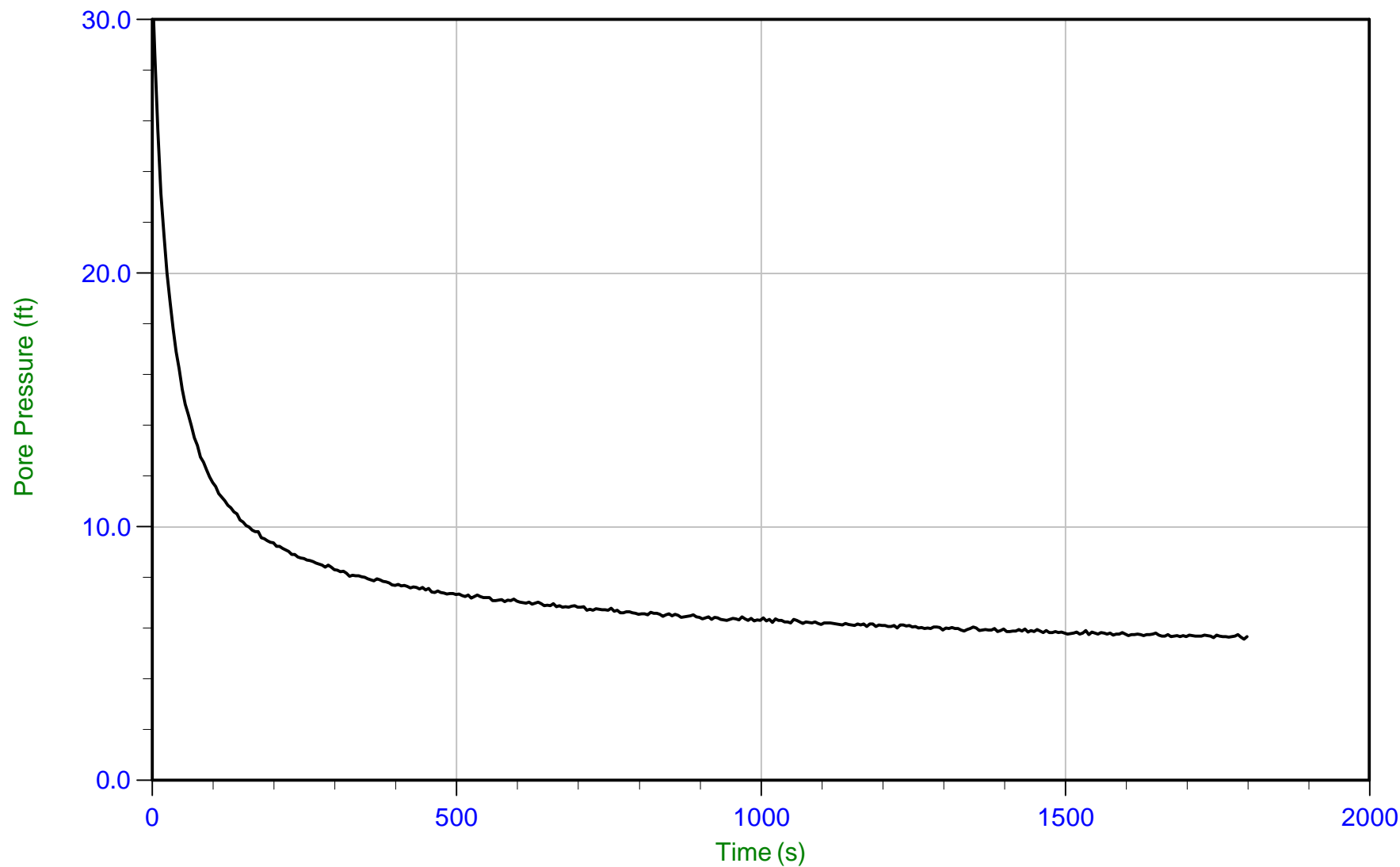
WT: 6.802 m / 22.316 ft
Ueq: 21.4 ft



Wood plc

Job No: 20-52-21054
Date: 07/13/2020 14:09
Site: Cholla Power Plant

Sounding: CPT-21
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP21.PPF
Depth: 2.100 m / 6.890 ft
Duration: 1800.0 s

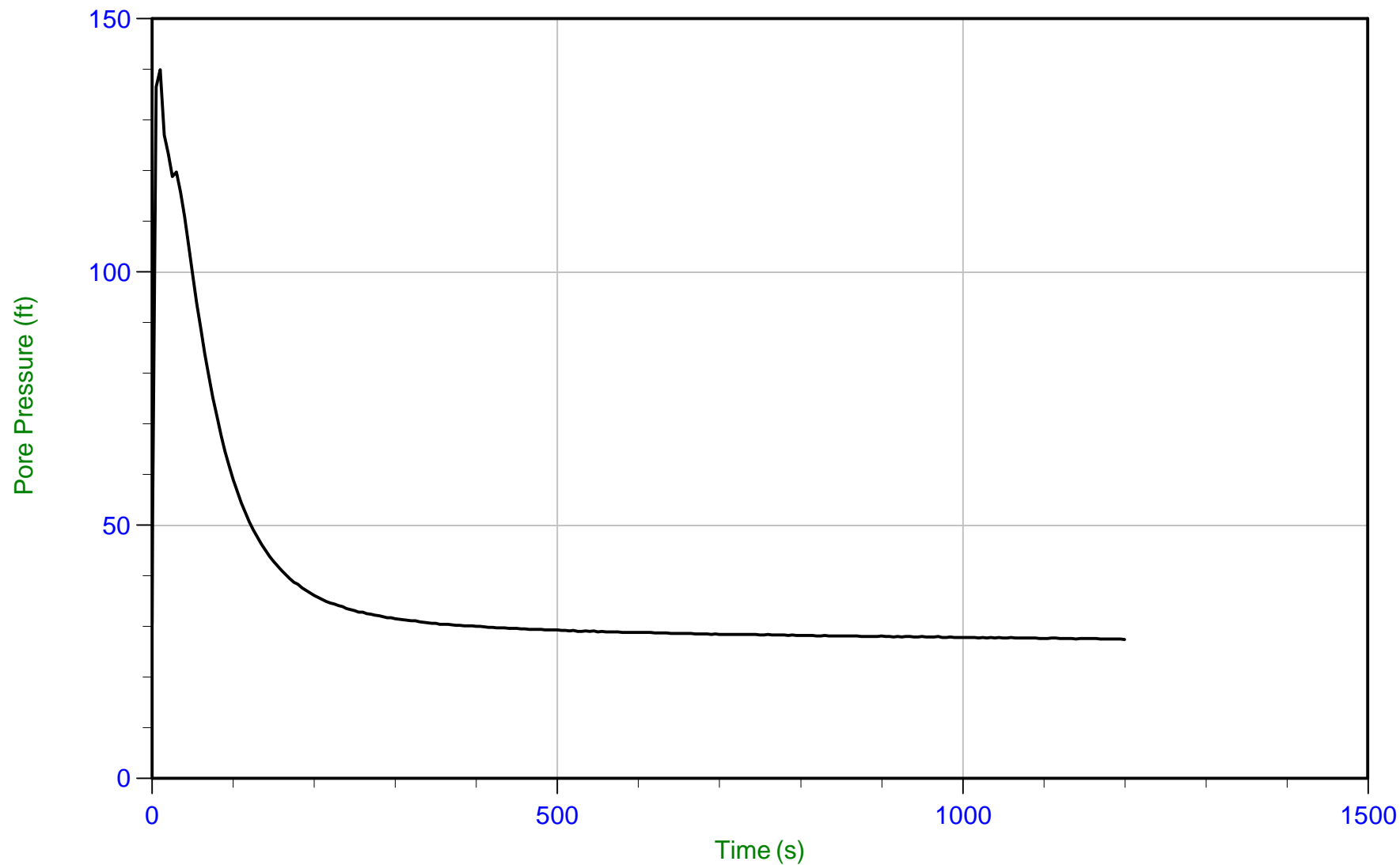
u Min: 5.6 ft
u Max: 31.5 ft
u Final: 5.7 ft



Wood plc

Job No: 20-52-21054
Date: 07/13/2020 14:09
Site: Cholla Power Plant

Sounding: CPT-21
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP21.PPF
Depth: 10.800 m / 35.433 ft
Duration: 1200.0 s

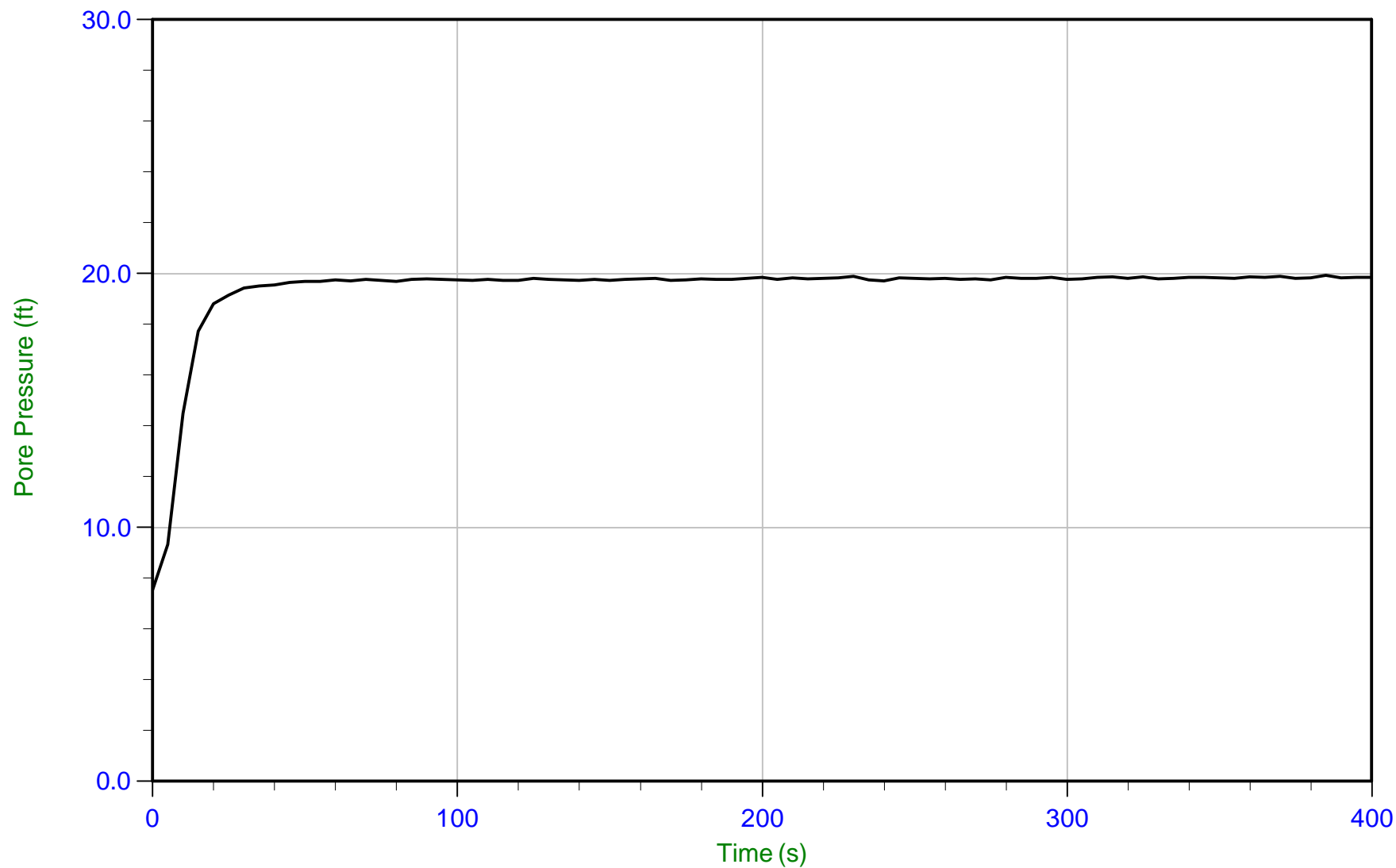
u Min: 27.5 ft
u Max: 139.9 ft
u Final: 27.5 ft



Wood plc

Job No: 20-52-21054
Date: 07/13/2020 14:09
Site: Cholla Power Plant

Sounding: CPT-21
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP21.PPF
Depth: 13.075 m / 42.896 ft
Duration: 400.0 s

u Min: 7.5 ft
u Max: 19.9 ft
u Final: 19.8 ft

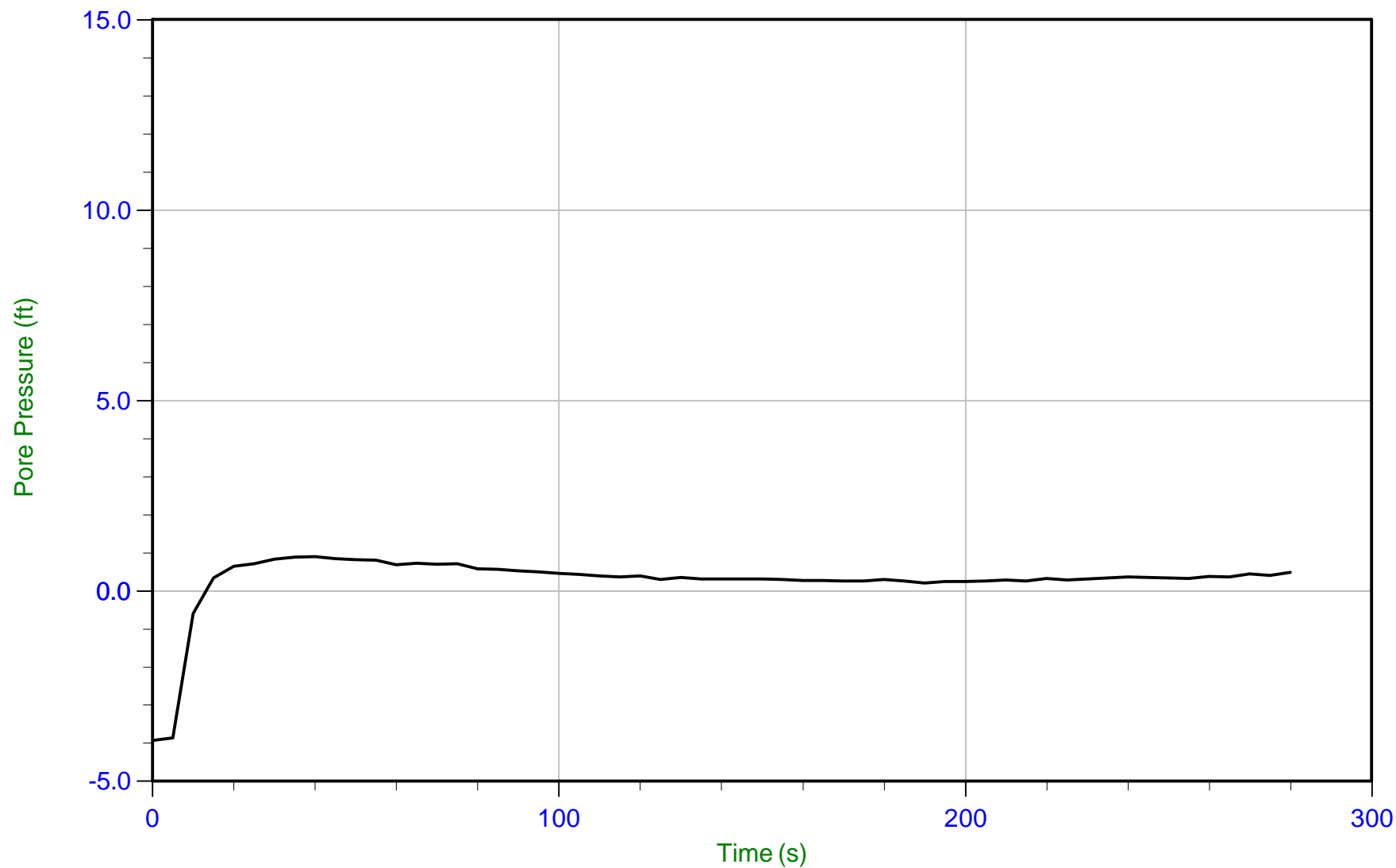
WT: 7.018 m / 23.025 ft
Ueq: 19.9 ft



Wood plc

Job No: 20-52-21054
Date: 07/13/2020 14:09
Site: Cholla Power Plant

Sounding: CPT-21
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP21.PPF
Depth: 14.400 m / 47.244 ft
Duration: 280.0 s

u Min: -3.9 ft
u Max: 0.9 ft
u Final: 0.5 ft

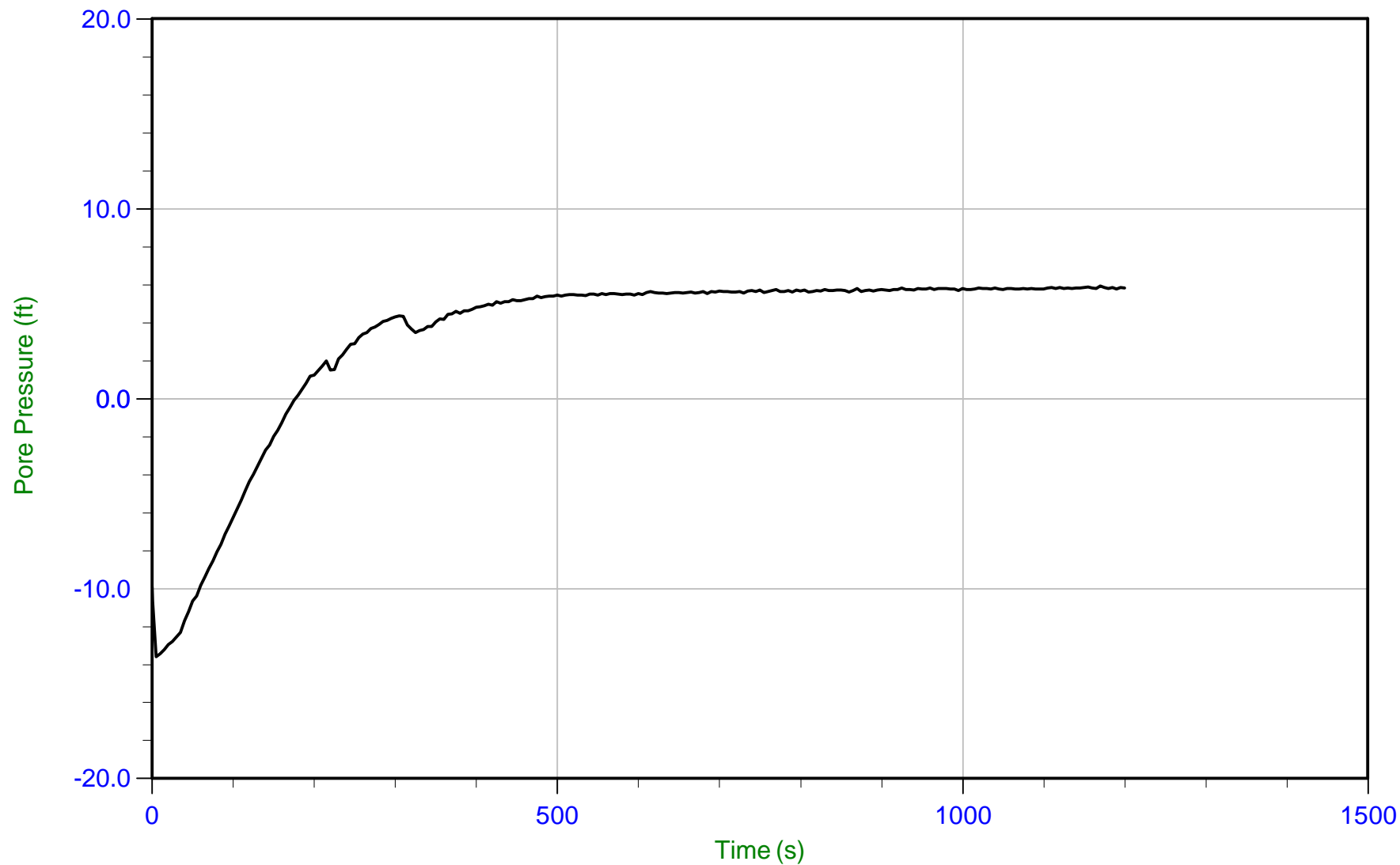
WT: 14.254 m / 46.765 ft
Ueq: 0.5 ft



Wood plc

Job No: 20-52-21054
Date: 07/13/2020 11:25
Site: Cholla Power Plant

Sounding: CPT-22
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP22.PPF
Depth: 3.025 m / 9.924 ft
Duration: 1200.0 s

u Min: -13.6 ft
u Max: 5.9 ft
u Final: 5.8 ft

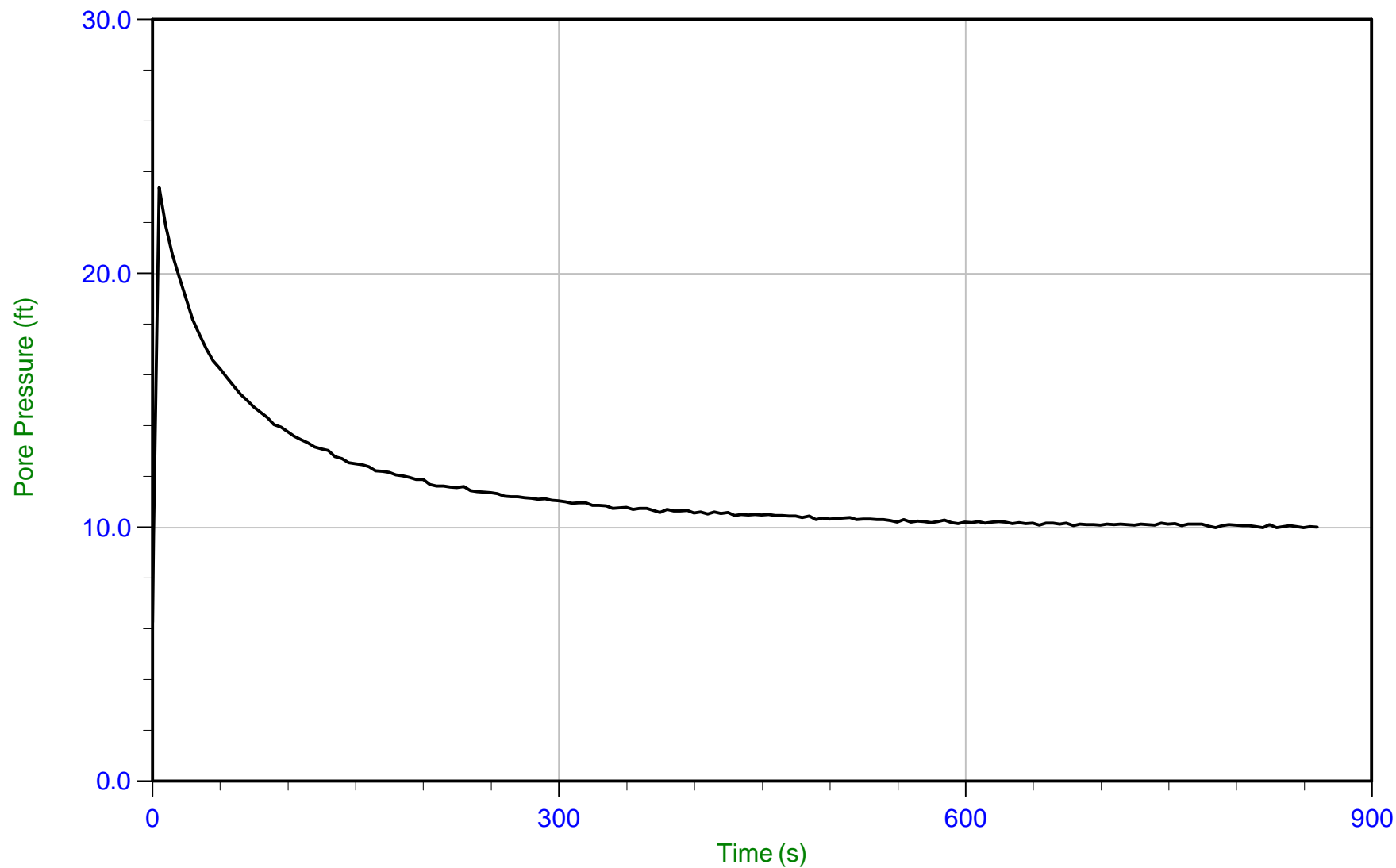
WT: 1.239 m / 4.065 ft
Ueq: 5.9 ft



Wood plc

Job No: 20-52-21054
Date: 07/16/2020 14:09
Site: Cholla Power Plant

Sounding: CPT-23
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP23.PPF
Depth: 1.500 m / 4.921 ft
Duration: 860.0 s

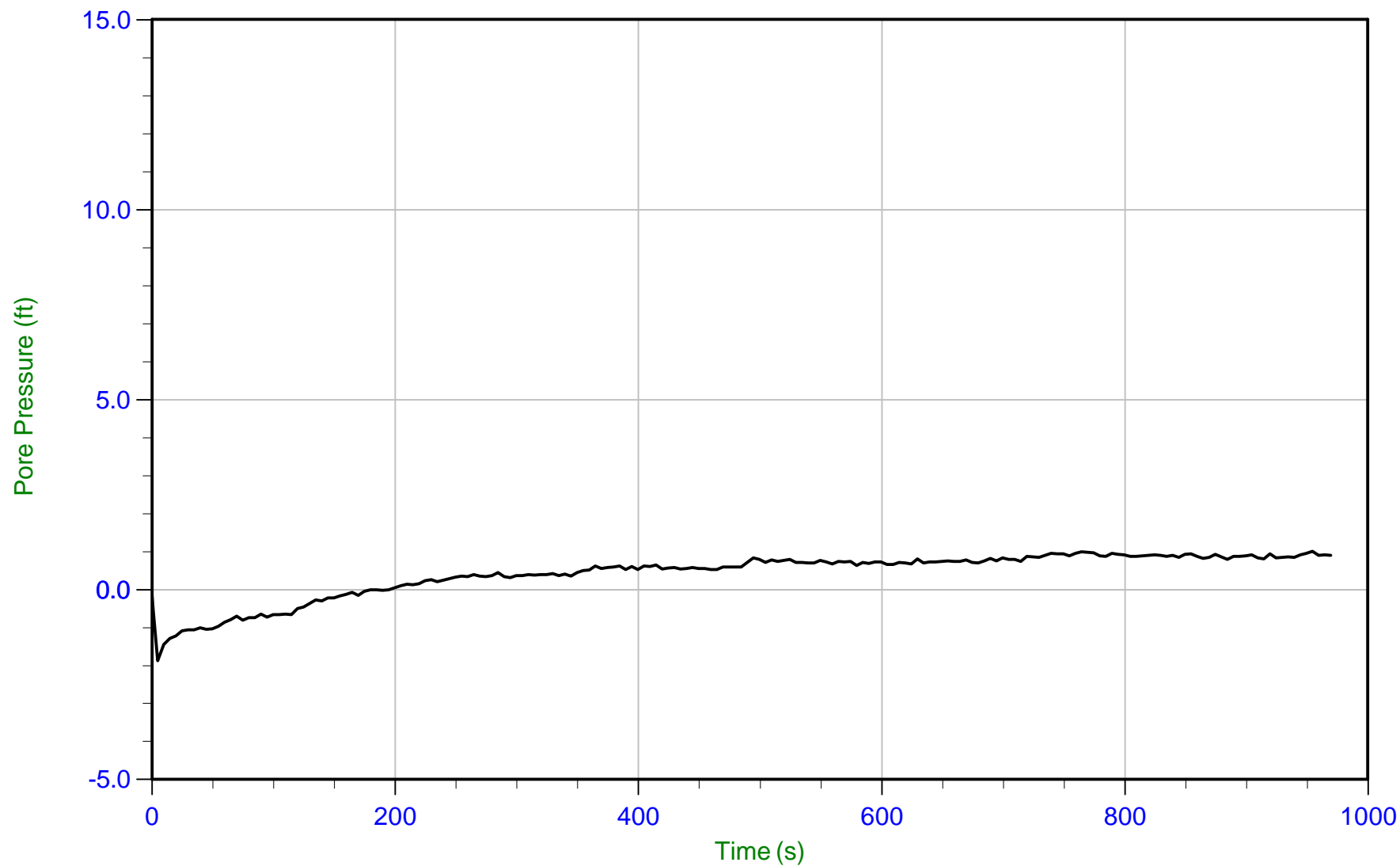
u Min: 6.3 ft
u Max: 23.4 ft
u Final: 10.0 ft



Wood plc

Job No: 20-52-21054
Date: 07/16/2020 14:09
Site: Cholla Power Plant

Sounding: CPT-23
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP23.PPF
Depth: 4.275 m / 14.025 ft
Duration: 970.0 s

u Min: -1.9 ft
u Max: 1.0 ft
u Final: 0.9 ft

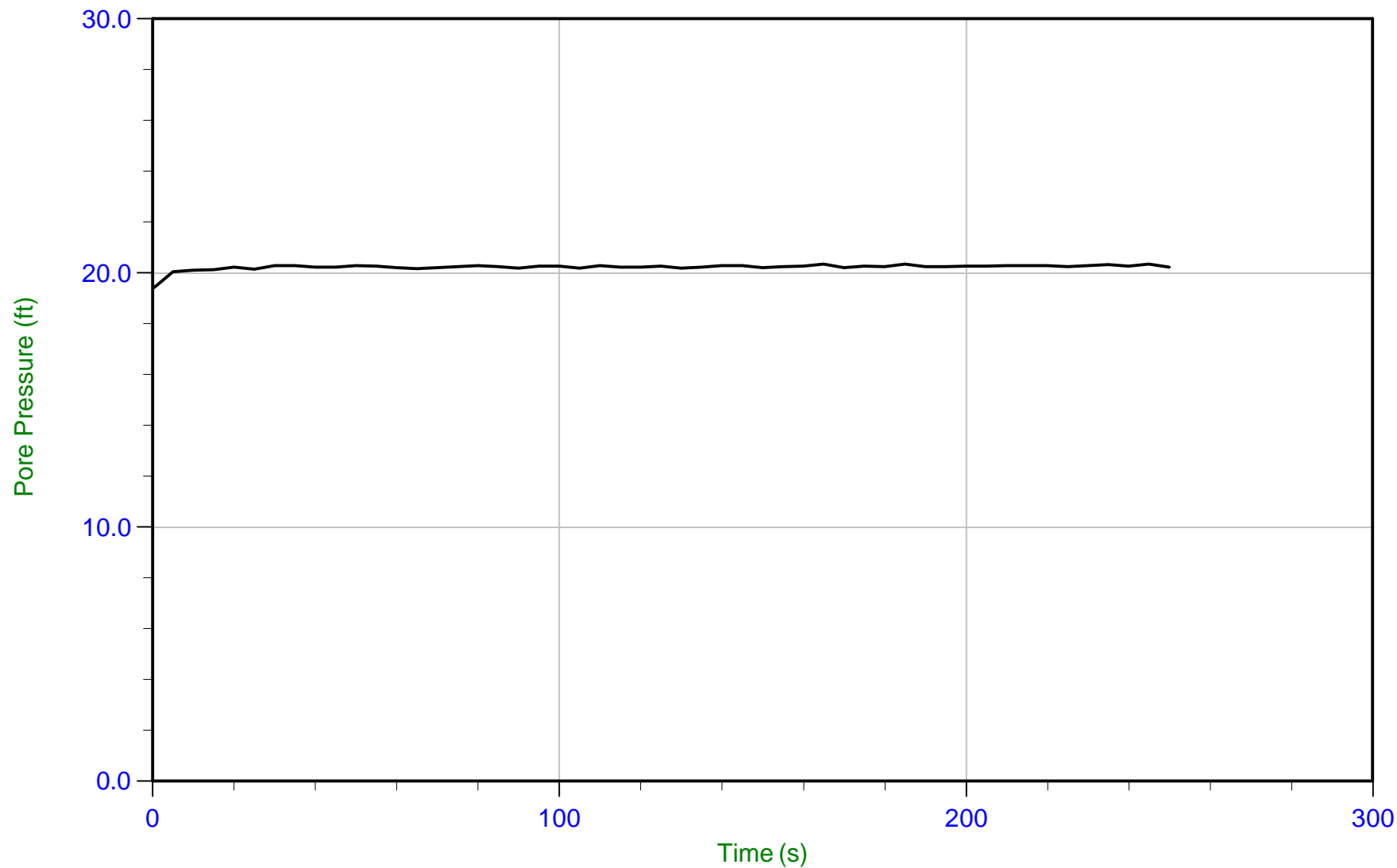
WT: 3.995 m / 13.107 ft
Ueq: 0.9 ft



Wood plc

Job No: 20-52-21054
Date: 07/16/2020 14:09
Site: Cholla Power Plant

Sounding: CPT-23
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP23.PPF
Depth: 12.300 m / 40.354 ft
Duration: 250.0 s

u Min: 19.4 ft
u Max: 20.4 ft
u Final: 20.2 ft

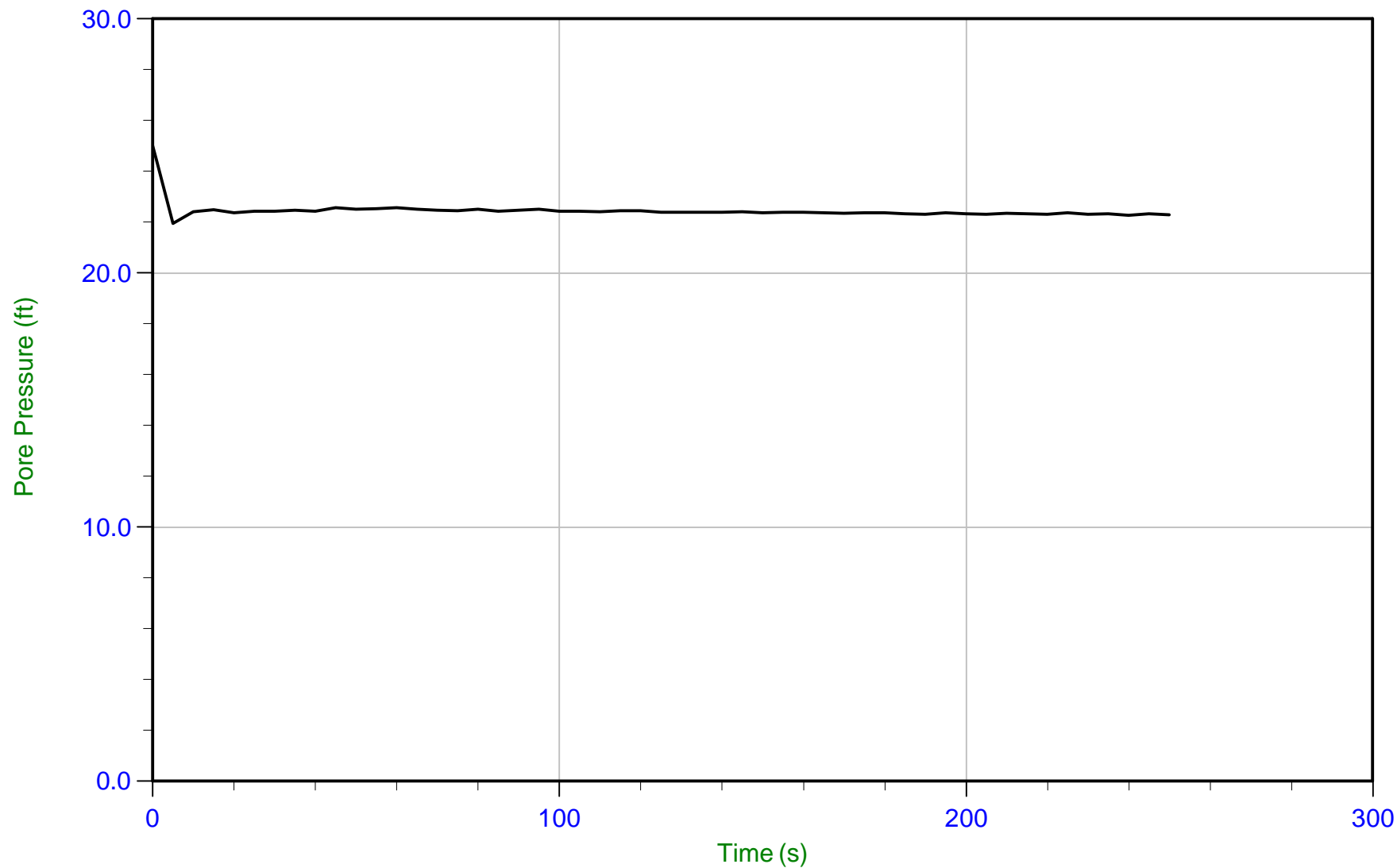
WT: 6.126 m / 20.098 ft
Ueq: 20.3 ft



Wood plc

Job No: 20-52-21054
Date: 07/16/2020 14:09
Site: Cholla Power Plant

Sounding: CPT-23
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP23.PPF
Depth: 12.950 m / 42.486 ft
Duration: 250.0 s

u Min: 21.9 ft
u Max: 25.0 ft
u Final: 22.3 ft

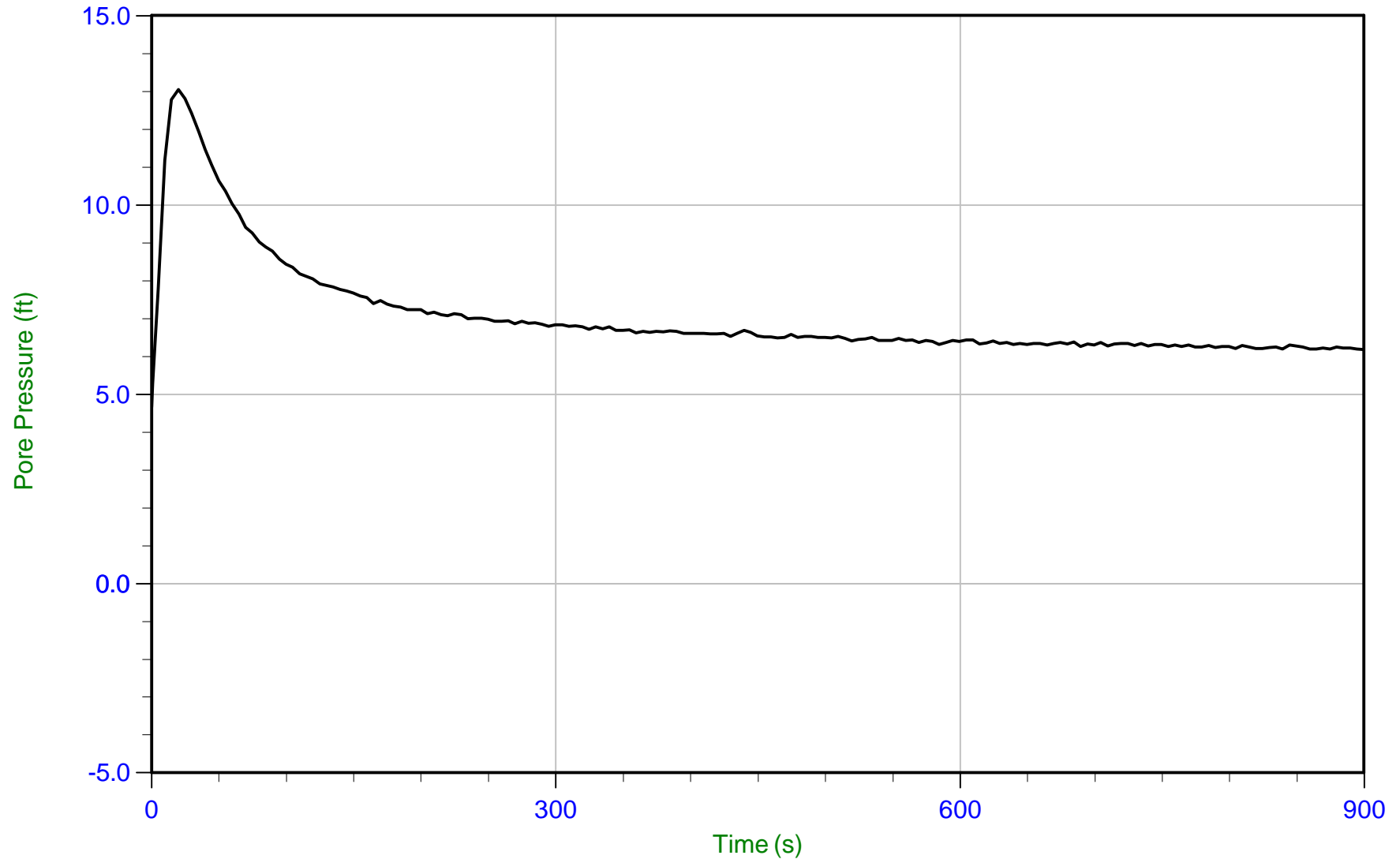
WT: 6.136 m / 20.131 ft
Ueq: 22.4 ft



Wood plc

Job No: 20-52-21054
Date: 07/19/2020 15:11
Site: Cholla Power Plant

Sounding: CPT-24
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP24.PPF
Depth: 5.975 m / 19.603 ft
Duration: 900.0 s

u Min: 4.7 ft
u Max: 13.0 ft
u Final: 6.2 ft

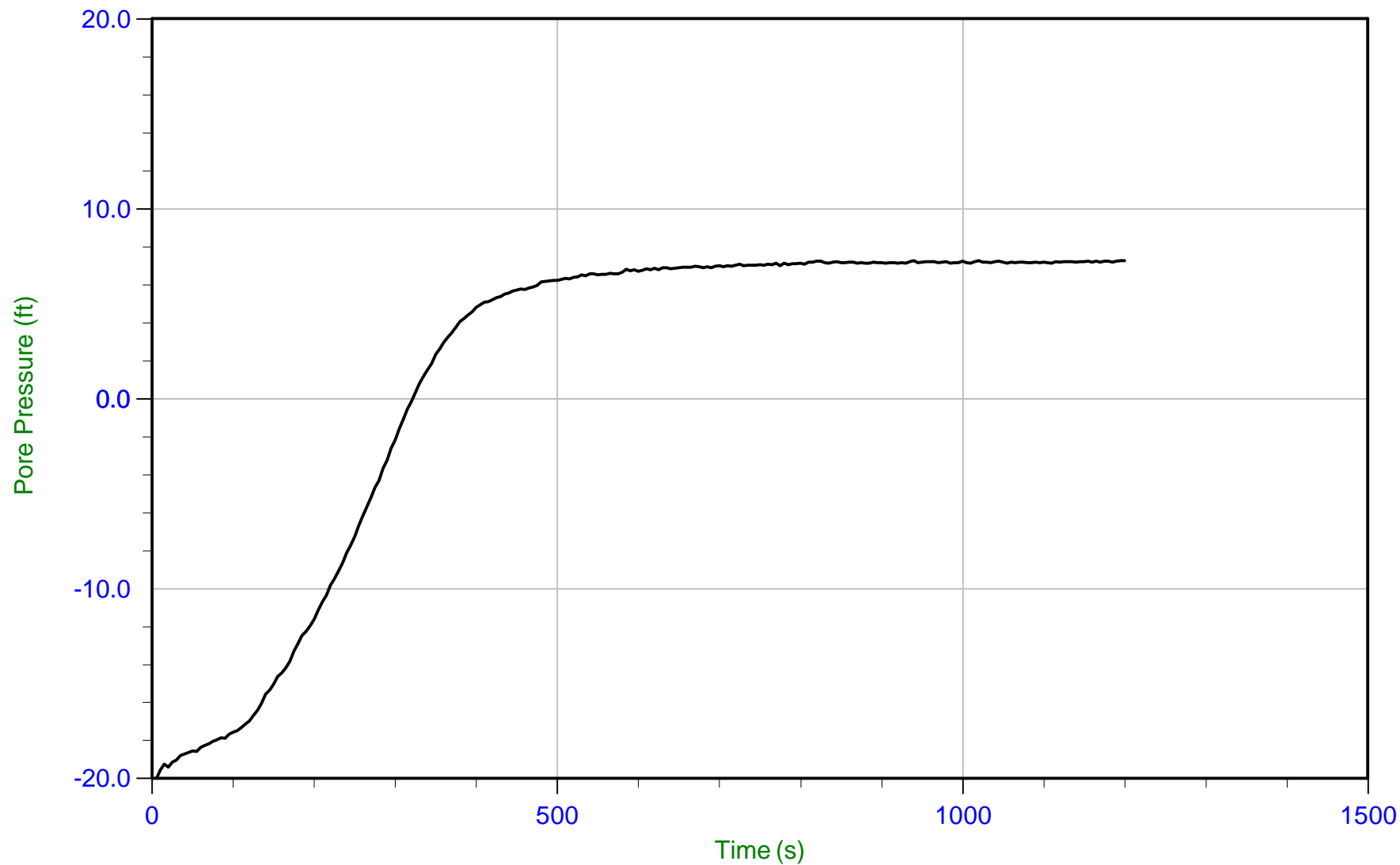
WT: 4.085 m / 13.402 ft
Ueq: 6.2 ft



Wood plc

Job No: 20-52-21054
Date: 07/19/2020 15:11
Site: Cholla Power Plant

Sounding: CPT-24
Cone: 552:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP24.PPF
Depth: 7.350 m / 24.114 ft
Duration: 1200.0 s

u Min: -20.7 ft
u Max: 7.3 ft
u Final: 7.3 ft

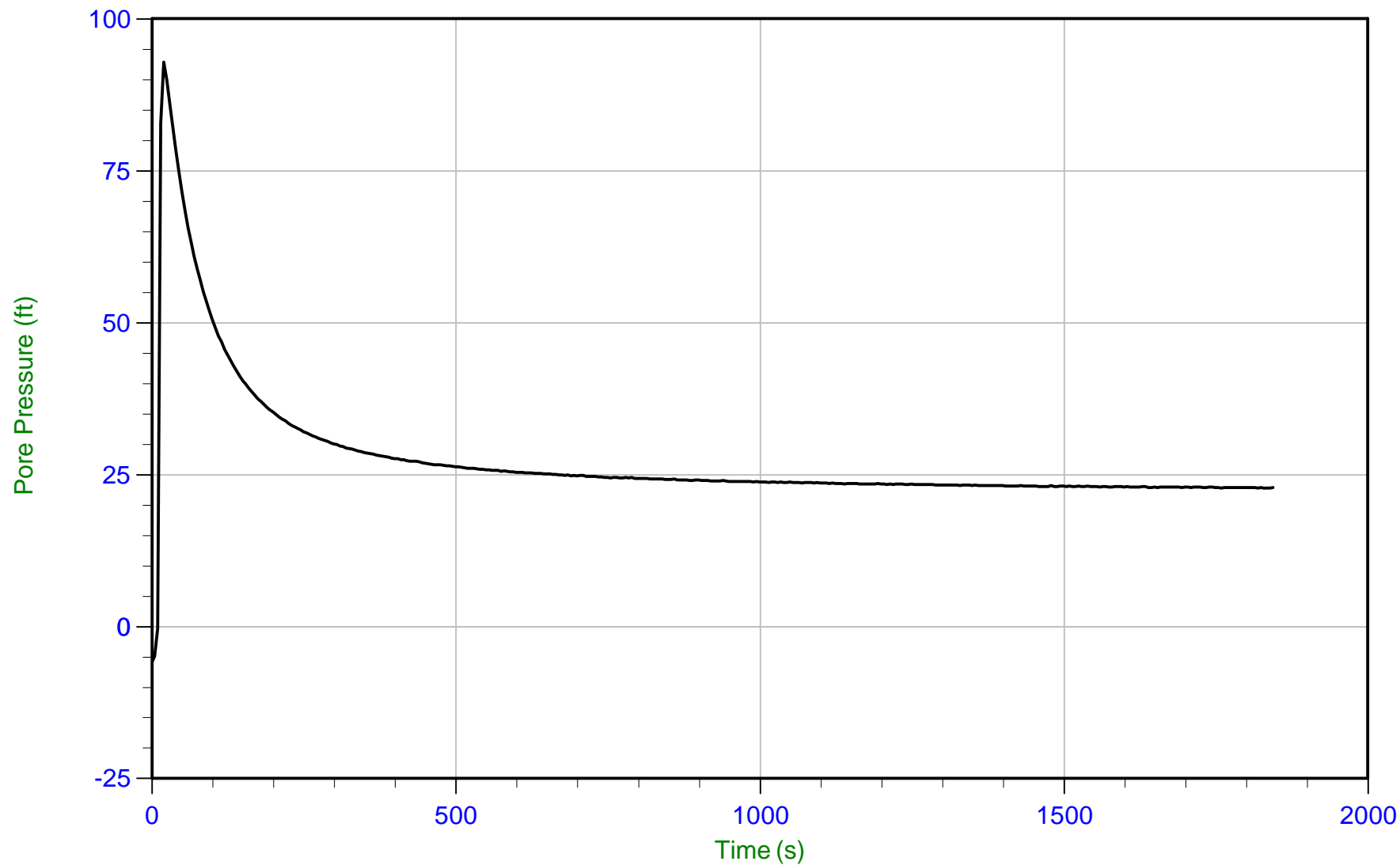
WT: 5.130 m / 16.831 ft
Ueq: 7.3 ft



Wood plc

Job No: 20-52-21054
Date: 07/20/2020 09:53
Site: Cholla Power Plant

Sounding: CPT-25
Cone: 657:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP25.PPF
Depth: 9.425 m / 30.922 ft
Duration: 1845.0 s

u Min: -5.8 ft
u Max: 92.9 ft
u Final: 22.9 ft

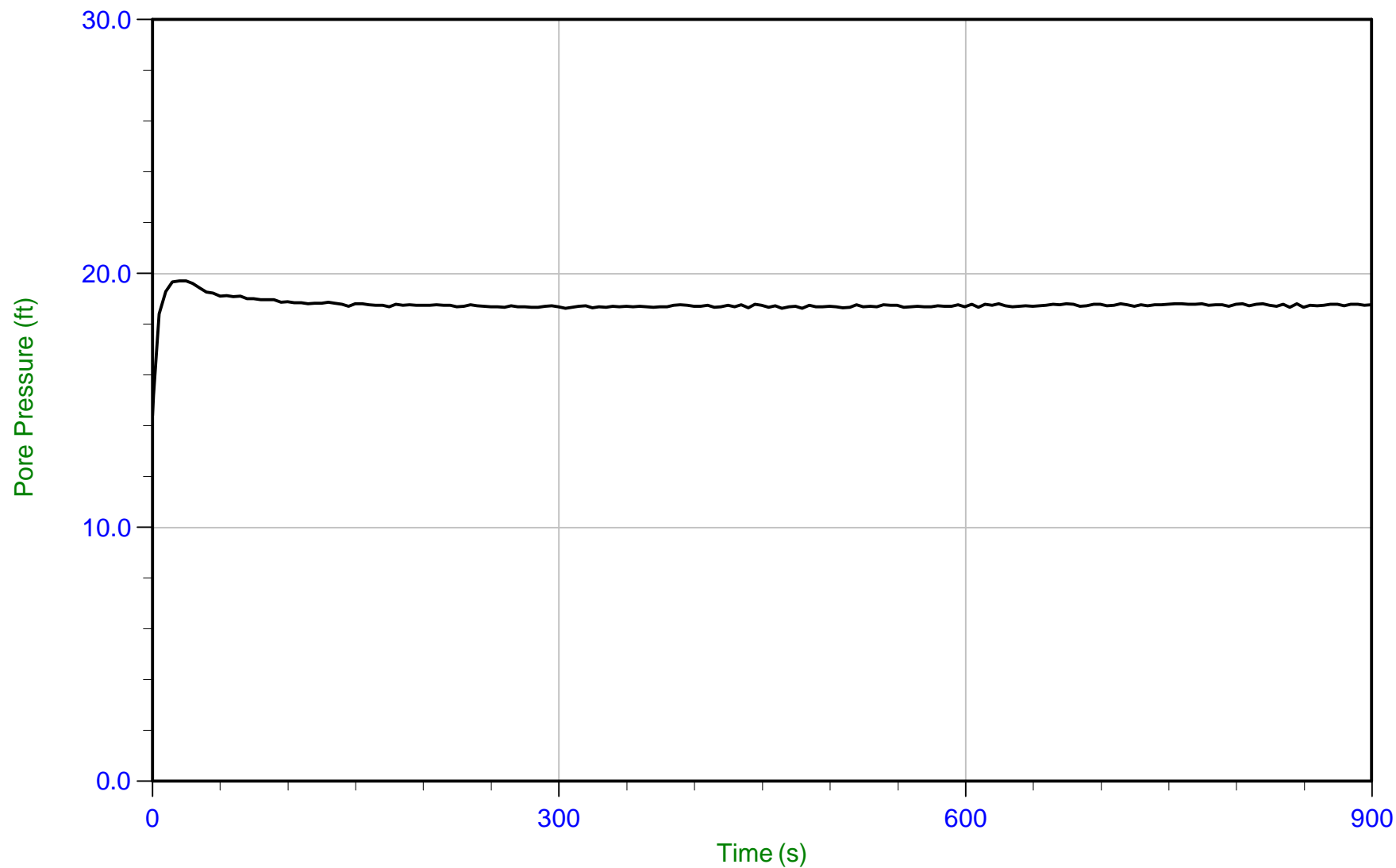
WT: 2.484 m / 8.150 ft
Ueq: 22.8 ft



Wood plc

Job No: 20-52-21054
Date: 07/20/2020 11:28
Site: Cholla Power Plant

Sounding: CPT-26
Cone: 657:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP26.PPF
Depth: 12.575 m / 41.256 ft
Duration: 900.0 s

u Min: 14.4 ft
u Max: 19.7 ft
u Final: 18.8 ft

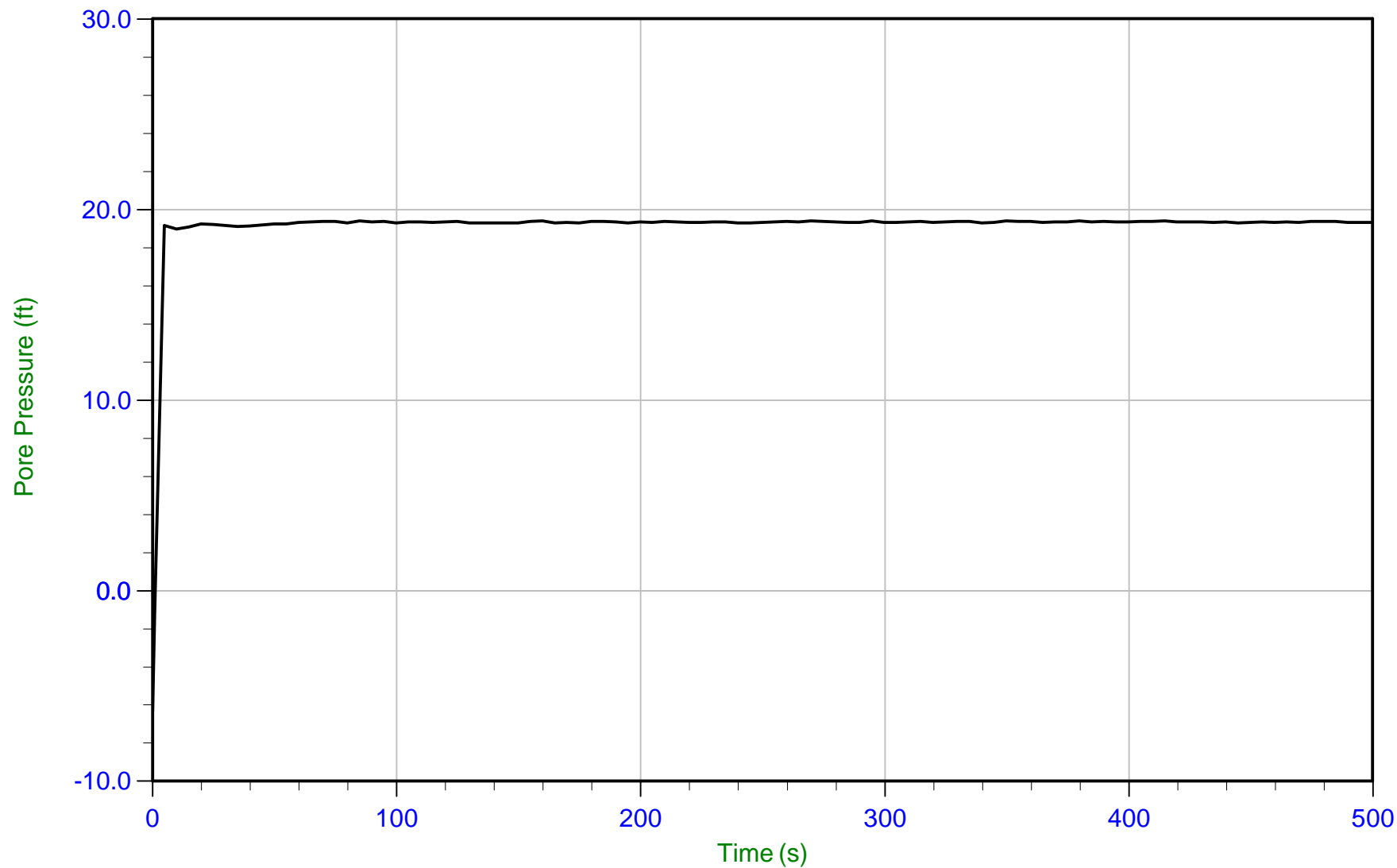
WT: 6.854 m / 22.487 ft
Ueq: 18.8 ft



Wood plc

Job No: 20-52-21054
Date: 07/20/2020 12:56
Site: Cholla Power Plant

Sounding: CPT-27
Cone: 657:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP27.PPF
Depth: 5.650 m / 18.537 ft
Duration: 500.0 s

u Min: -6.3 ft
u Max: 19.4 ft
u Final: 19.3 ft

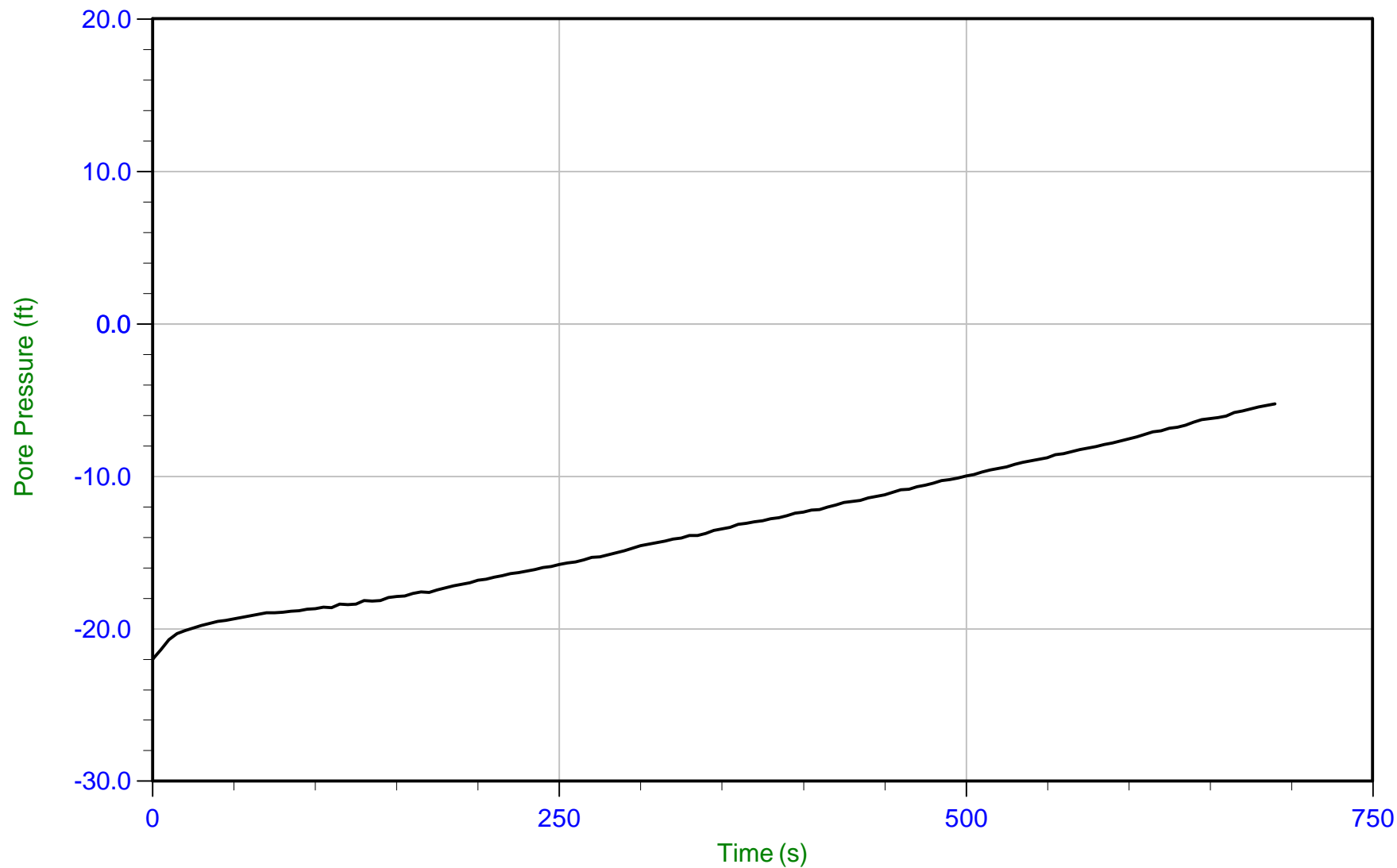
WT: -0.232 m / -0.761 ft
Ueq: 19.3 ft



Wood plc

Job No: 20-52-21054
Date: 07/20/2020 12:56
Site: Cholla Power Plant

Sounding: CPT-27
Cone: 657:T1500F15U500 Area=15 cm²



Trace Summary:

Filename: 20-52-21054_SP27.PPF
Depth: 6.200 m / 20.341 ft
Duration: 690.0 s

u Min: -22.0 ft
u Max: -5.2 ft
u Final: -5.2 ft

Piezometer Installation Summary



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Start Date: 12-Jul-2020
End Date: 22-Jul-2020

PIEZOMETER INSTALLATION SUMMARY

Piezometer Location ID	Adjacent CPT	Installation Depth (ft)	Installation Date	Piezometer Serial No.	Piezometer Capacity (kPa)	Cable Length (ft)	Piezometer Calibration (Hz ²)	Thermistor Calibration (kPa/°C rise)	Dry Piezometer Surface Baseline (Hz ²)	Dry Thermistor Surface Baseline (°C)	Saturated Piezometer Surface Baseline (Hz ²)	Saturated Thermistor Surface Baseline (°C)	Piezometer Reading after Deployment (Hz ²)	Thermistor Reading after Deployment (°C)	Latitude ¹	Longitude ¹	Elevation ¹ (ft)
VWP-14	CPT-14	45.0	Jul 17, 2020	2025763	350	50	9160	0.046650	9299.8	27.1	9300.9	27.7	8599.4	19.2	34.929203	110.268457	5043
VWP-17	CPT-17	49.0	Jul 17, 2020	2025758	350	68	8862	0.079690	9032.9	29.7	9033.6	30.3	8136.1	20.8	34.928882	110.268171	5042
VWP-18	CPT-18	43.0	Jul 17, 2020	2025760	350	58	9079	0.051730	9243.2	27.7	9243.4	28.7	8518.7	17.7	34.928745	110.267966	5041
VWP-19	CPT-19	50.0	Jul 17, 2020	2025759	350	68	9160	0.067550	9306.2	27.9	9306.4	29.4	8459.2	18.2	34.928576	110.267744	5043
VWP-20	CPT-20	50.0	Jul 17, 2020	2025757	350	68	8949	0.098770	9103.6	29.2	9104.8	30.7	8276.7	18.7	34.928437	110.267555	5043
VWP-21	CPT-21	44.0	Jul 17, 2020	2025764	350	50	9419	0.026450	9592.5	31.0	9593.2	30.1	8884.6	17.7	34.928266	110.267258	5043
VWP-24	CPT-24	26.5	Jul 21, 2020	2025756	350	76	9006	0.072370	9167.5	25.0	9167.3	26.7	8982.9	24.2	34.929635	110.269162	5042
VWP-25	CPT-25A	50.5	Jul 20, 2020	2025761	350	58	8992	0.094760	9166.6	35.6	9165.1	33.1	8127.1	19.6	34.928437	110.267658	5043
VWP-26	CPT-26	51.6	Jul 20, 2020	2025754	350	76	8975	0.090860	9136.6	34.6	9136.2	35.8	8394.8	20.1	34.928306	110.267504	5043
VWP-27	CPT-27	20.8	Jul 21, 2020	2025762	350	58	8997	0.005841	9155.1	25.4	9157.8	27.2	8467.3	23.1	34.928142	110.267122	5046

1. The coordinates are based on the WGS84 Datum and have an accuracy of ±30 feet.

2. Elevations are referenced to the ground surface and were acquired from the Google Earth Elevation for the recorded coordinates.

Groundwater Sampling Summary



Job No: 20-52-21054
Client: Wood plc
Project: Cholla Power Plant
Start Date: 12-Jul-2020
End Date: 22-Jul-2020

GROUNDWATER SAMPLING SUMMARY

Location ID	Adjacent CPT Location ID	Date	Depth From (ft)	Depth To (ft)	Sampling Duration (min)	Approx. Volume Collected (mL)	Latitude ¹	Longitude ¹	Elevation ² (ft)	Refer to Notation Number
WS-13	CPT-13	19-Jul-2020	33.8	34.8	18	0	34.929371	-110.268696	5042	
WS-14	CPT-14	19-Jul-2020	42.8	43.8	15	470	34.929196	-110.268458	5043	
WS-15	CPT-15	19-Jul-2020	48.4	49.4	18	0	34.929053	-110.268442	5042	3
WS-16	CPT-16	18-Jul-2020	50.0	51.0	10	0	34.929038	-110.268309	5042	
WS-16A	CPT-16	19-Jul-2020	48.9	49.9	0	0	34.929038	-110.268309	5042	
WS-17	CPT-17	18-Jul-2020	47.5	48.5	13	440	34.928893	-110.268168	5042	
WS-18	CPT-18	18-Jul-2020	43.0	44.0	14	450	34.928743	-110.267951	5041	
WS-19	CPT-19	18-Jul-2020	49.3	50.3	19	440	34.928568	-110.267736	5043	
WS-20	CPT-20	19-Jul-2020	44.9	45.9	14	440	34.928437	-110.267551	5043	
WS-21	CPT-21	19-Jul-2020	44.0	45.0	19	0	34.928272	-110.267246	5043	
WS-21A	CPT-21	19-Jul-2020	42.7	43.7	35	0	34.928272	-110.267246	5043	

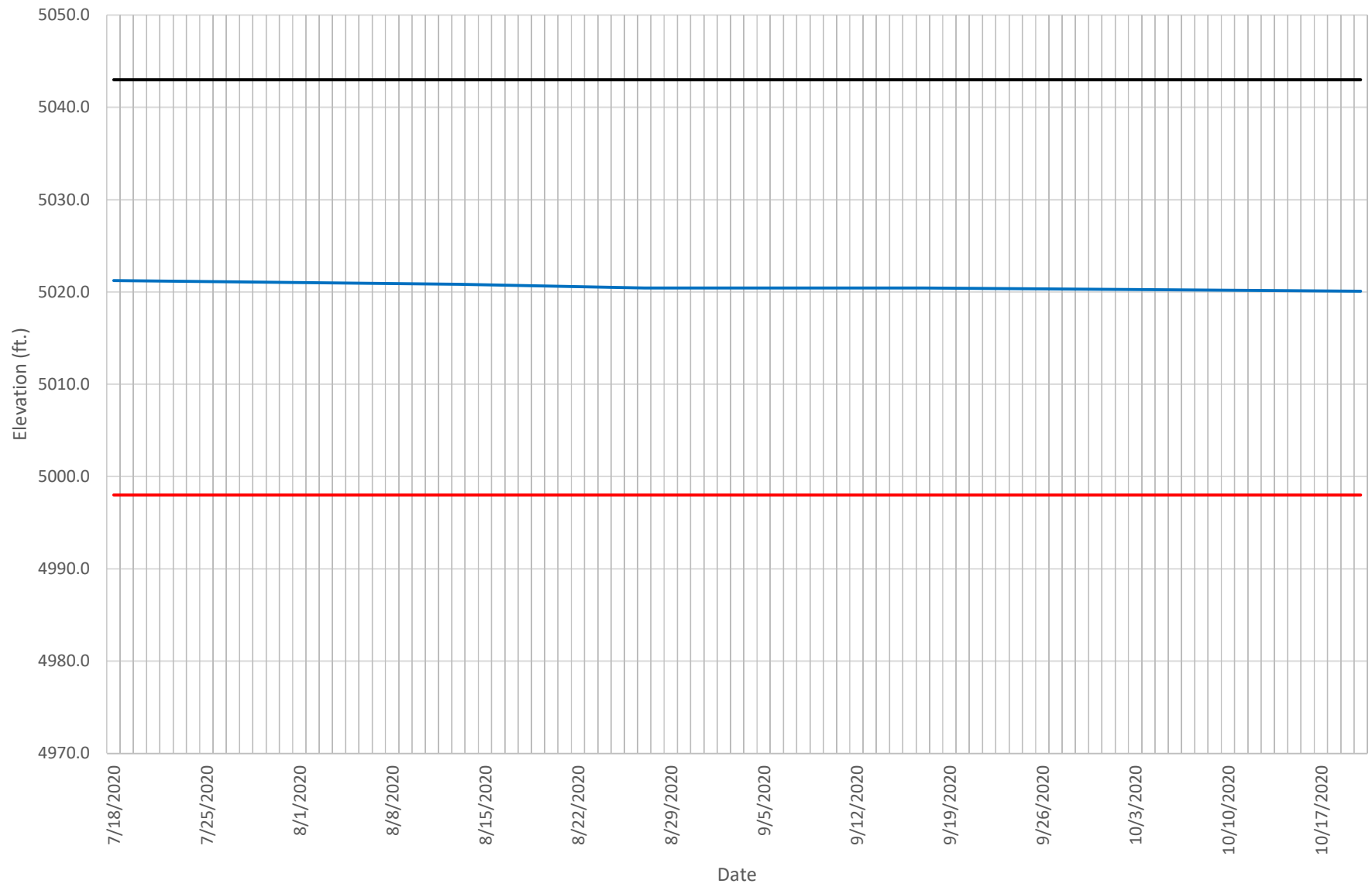
1. The coordinates are based on the WGS84 Datum and have an accuracy of ± 30 feet.

2. Elevations are referenced to the ground surface and were acquired from the Google Earth Elevation for the recorded coordinates.

3. Groundwater sample completed 2.4 ft past CPT sounding depth.

ATTACHMENT B - PIEZOMETER READINGS

VWP-14 - Sensor 1 (45.0')

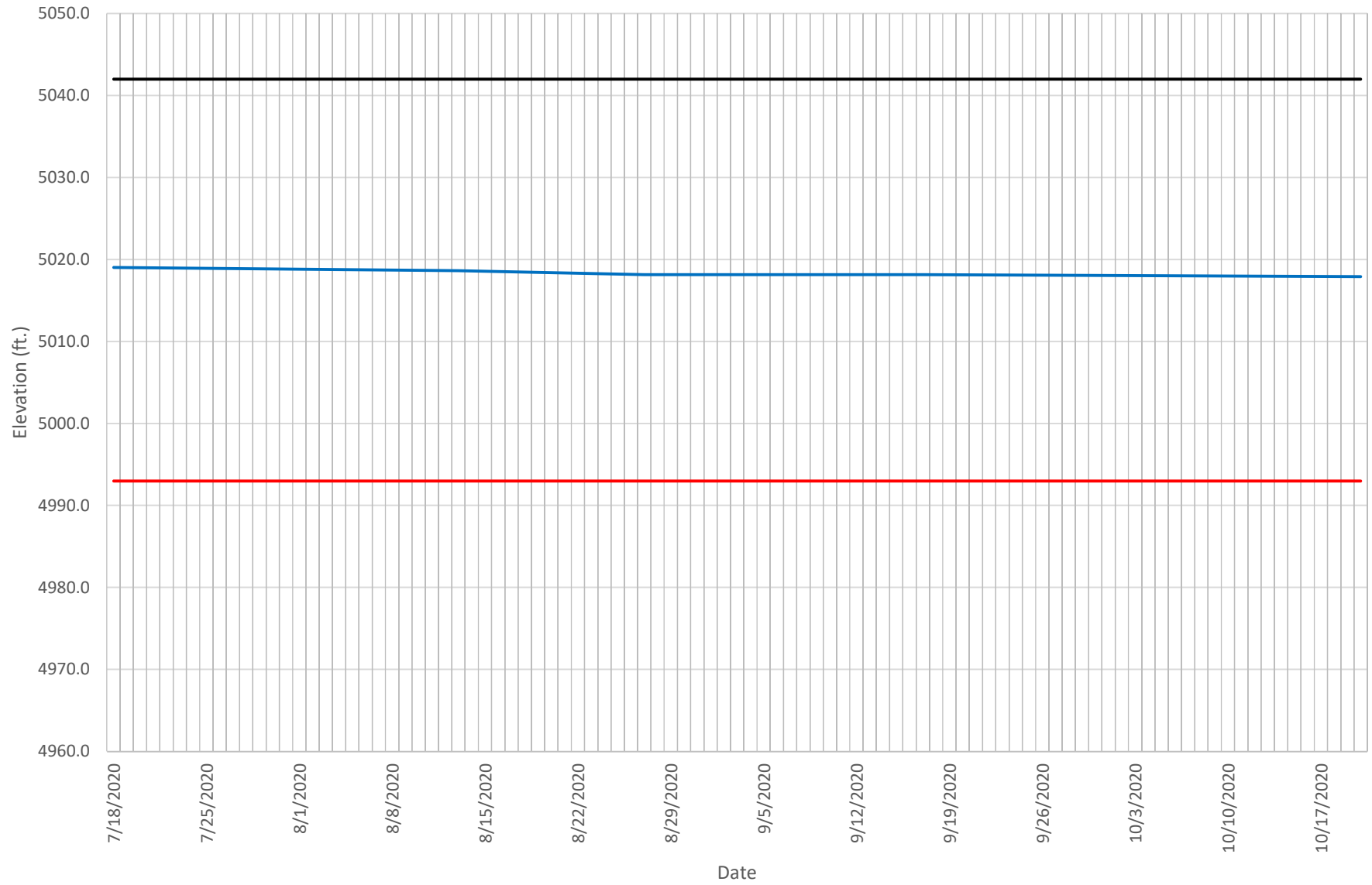


— Ground Elevation (ft.)

— Piezometer Tip Elevation (ft)

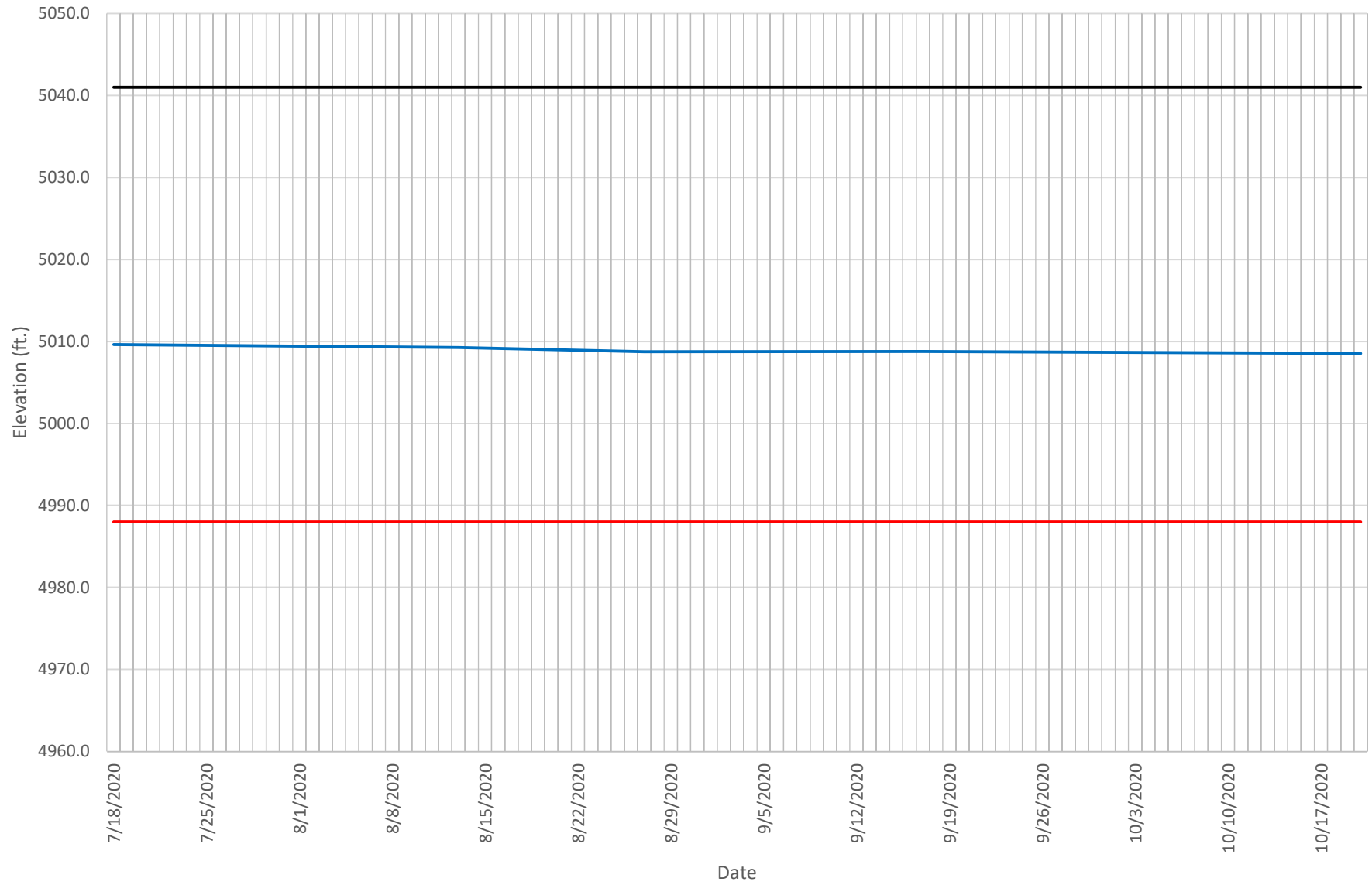
— Phreatic Surface Elevation (ft.)

VWP-17 - Sensor 1 (49.0')



— Ground Elevation (ft.) — Piezometer Tip Elevation (ft) — Phreatic Surface Elevation (ft.)

VWP-18 - Sensor 1 (53.0')

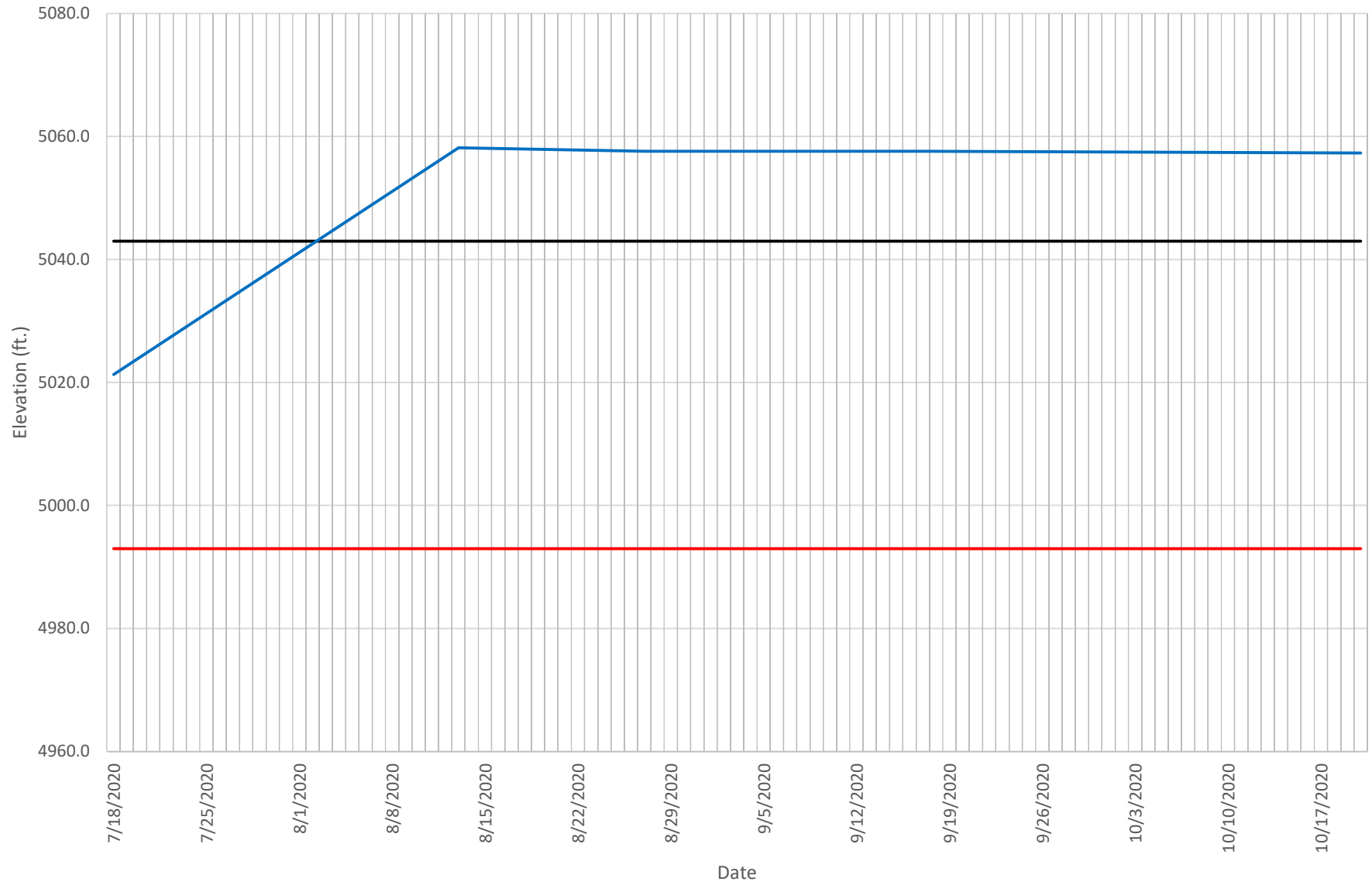


— Ground Elevation (ft.)

— Piezometer Tip Elevation (ft)

— Phreatic Surface Elevation (ft.)

VWP-19 - Sensor 1 (50.0')

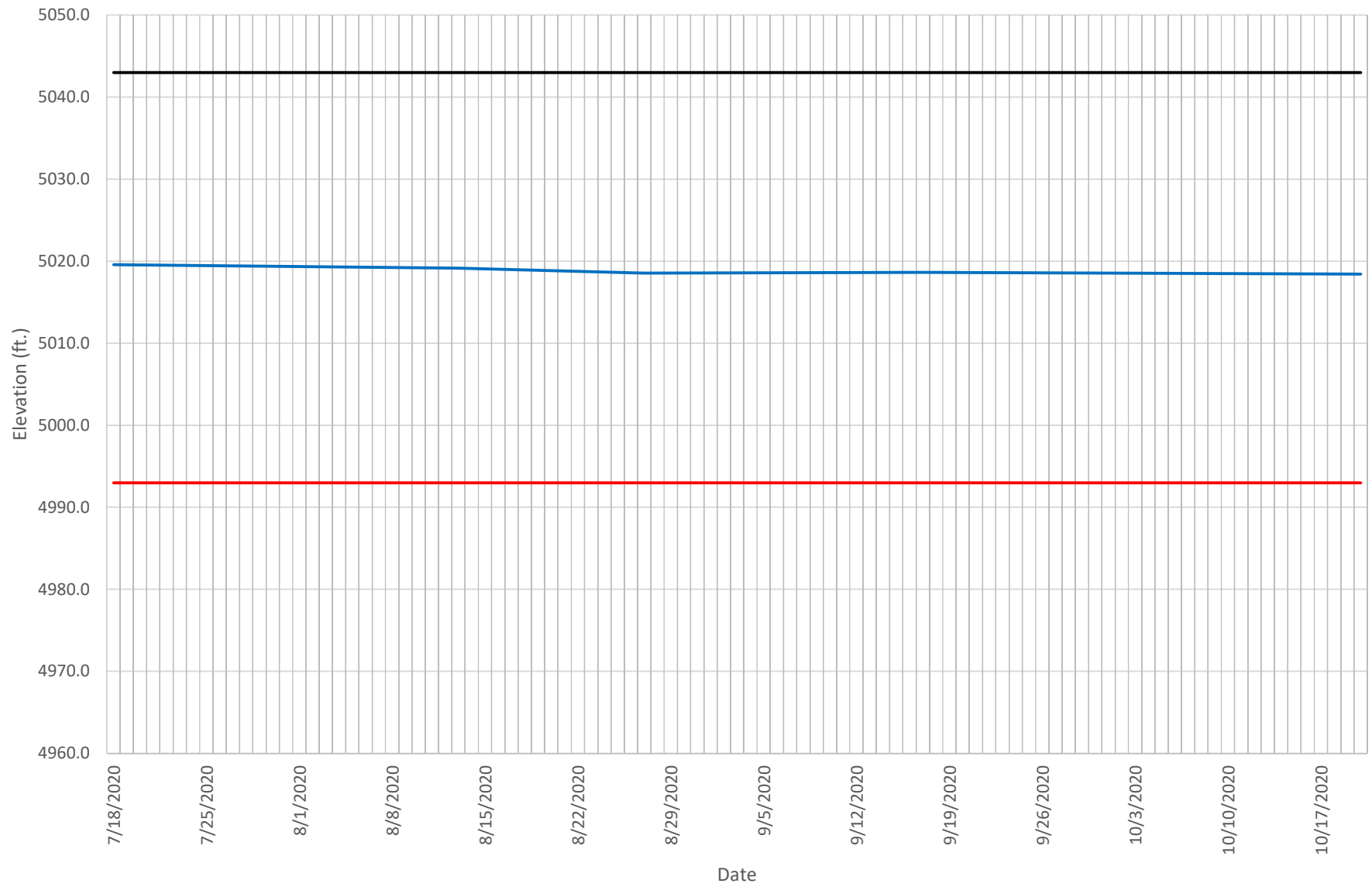


— Ground Elevation (ft.)

— Piezometer Tip Elevation (ft)

— Phreatic Surface Elevation (ft.)

VWP-20 - Sensor 1 (50.0')

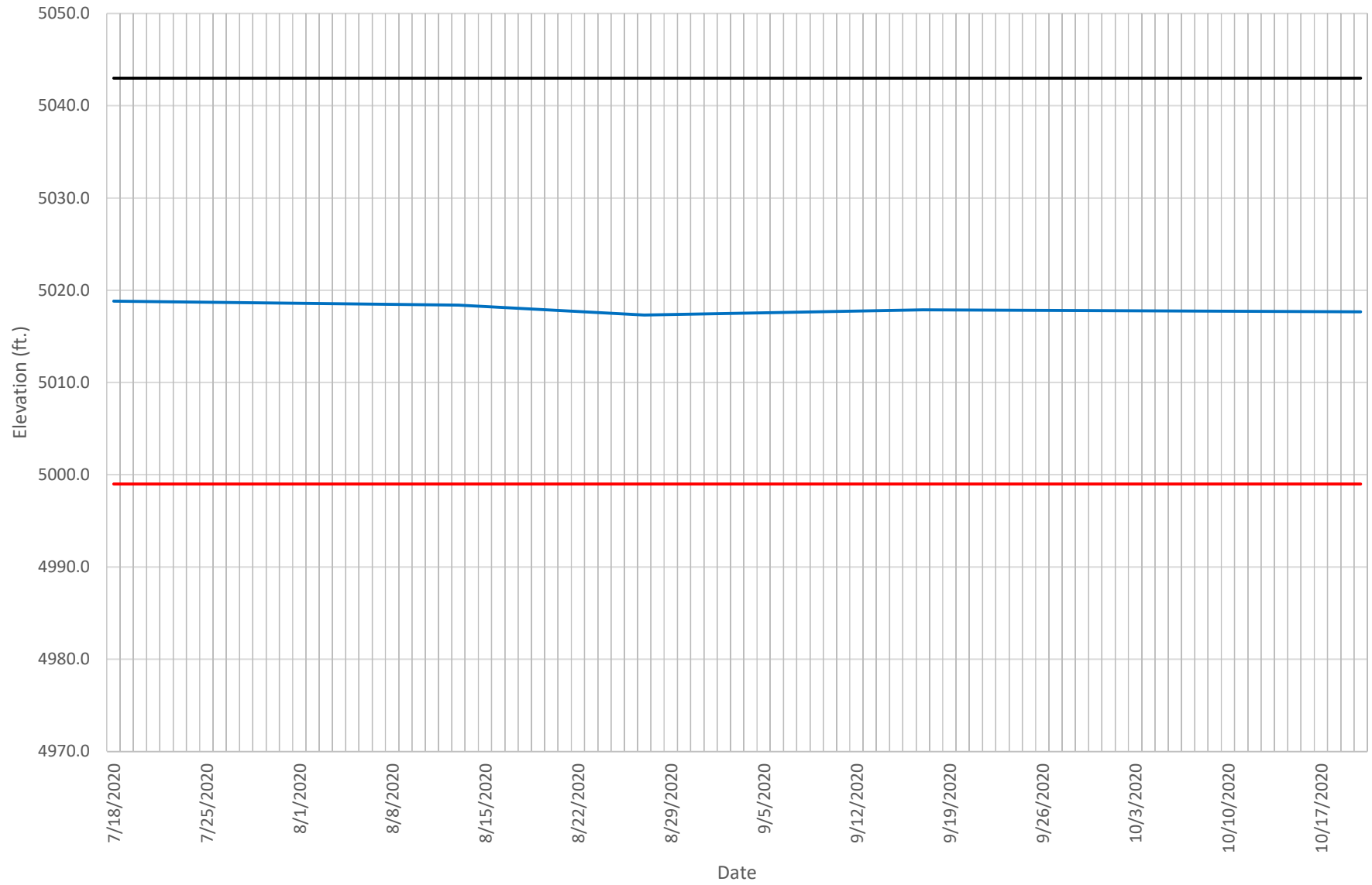


— Ground Elevation (ft.)

— Piezometer Tip Elevation (ft)

— Phreatic Surface Elevation (ft.)

VWP-21 - Sensor 1 (44.0')

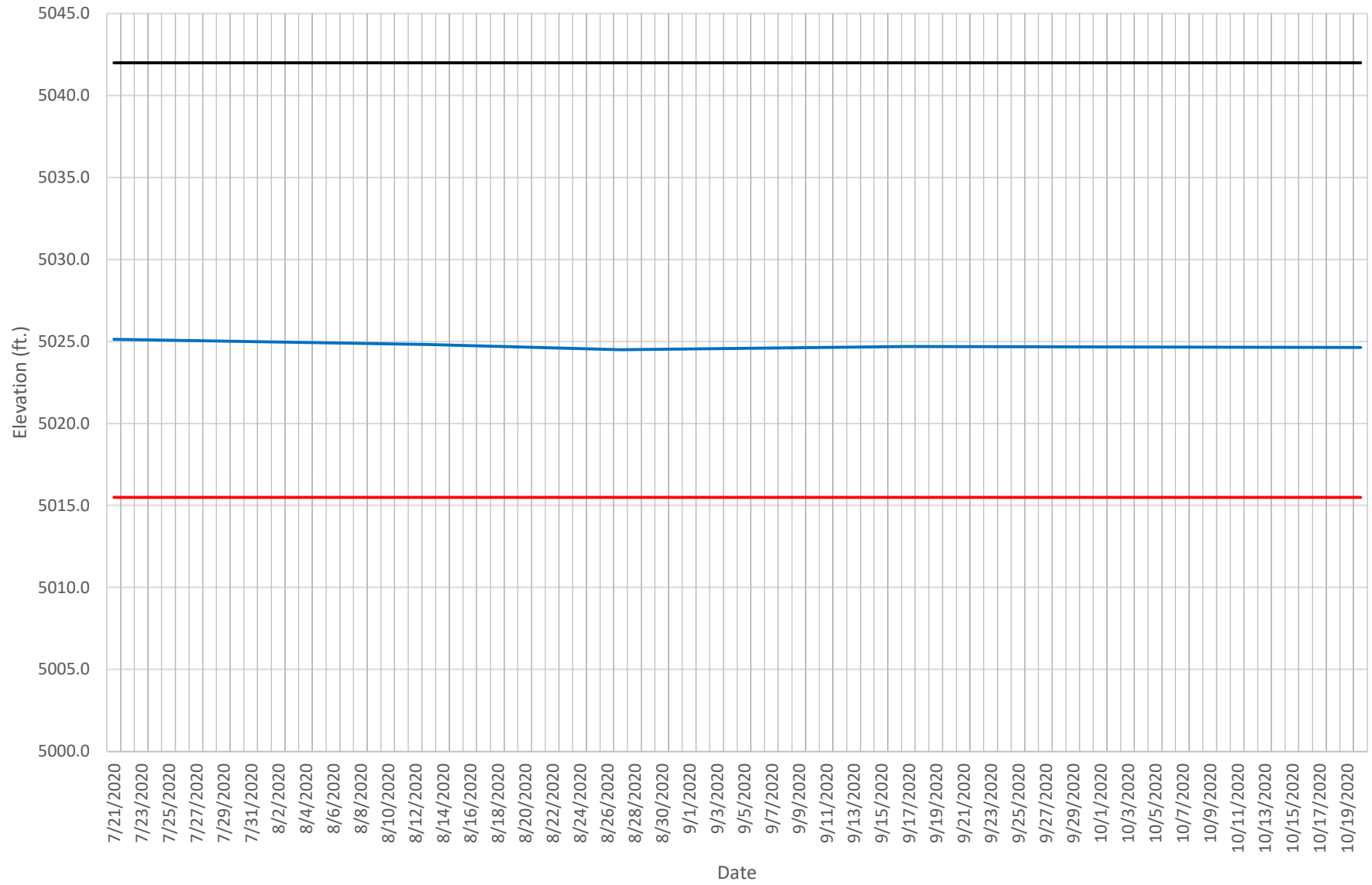


— Ground Elevation (ft.)

— Piezometer Tip Elevation (ft)

— Phreatic Surface Elevation (ft.)

VWP-24 - Sensor 1 (26.5')

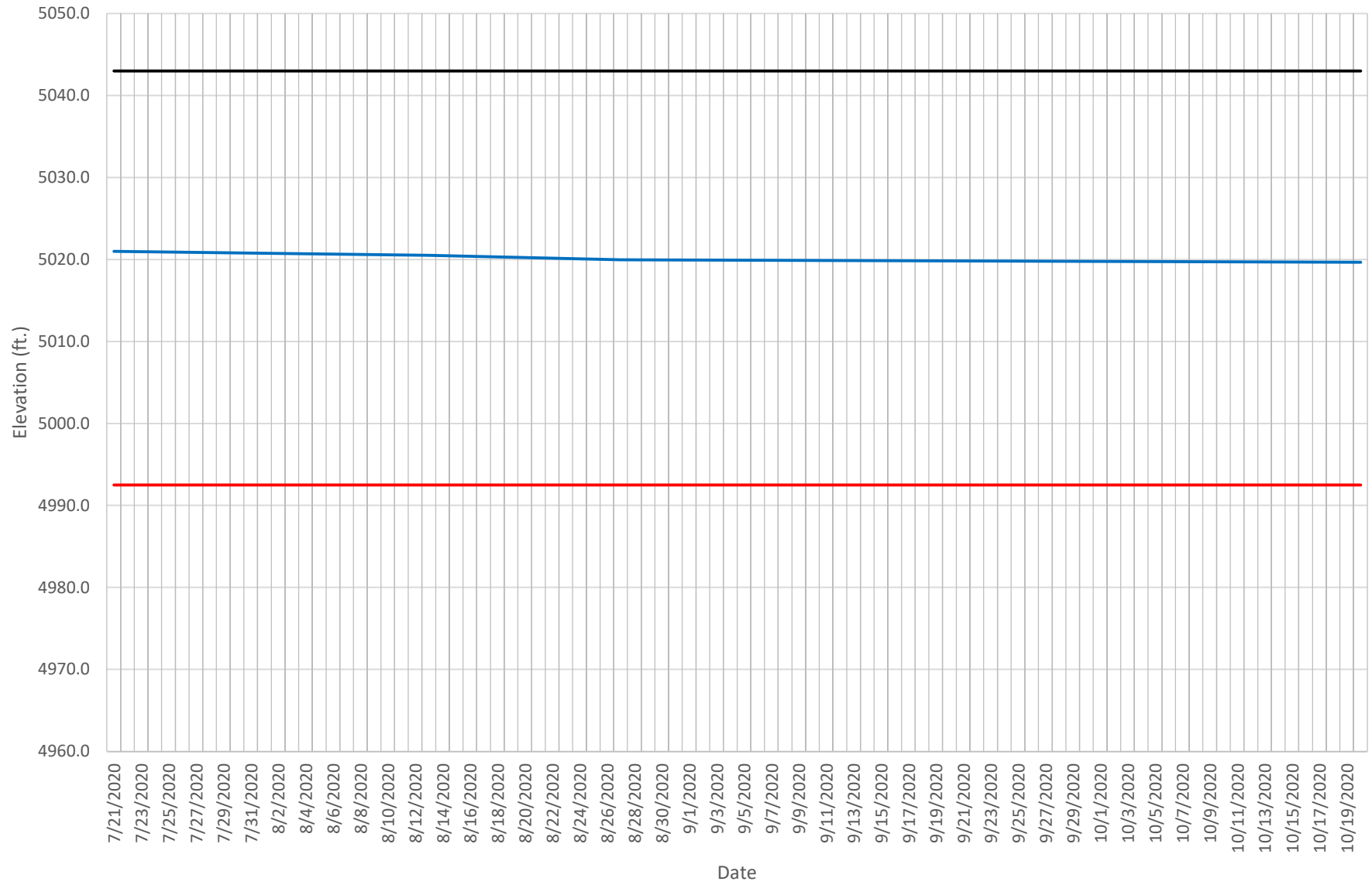


— Ground Elevation (ft.)

— Piezometer Tip Elevation (ft)

— Phreatic Surface Elevation (ft.)

VWP-25 - Sensor 1 (50.5')

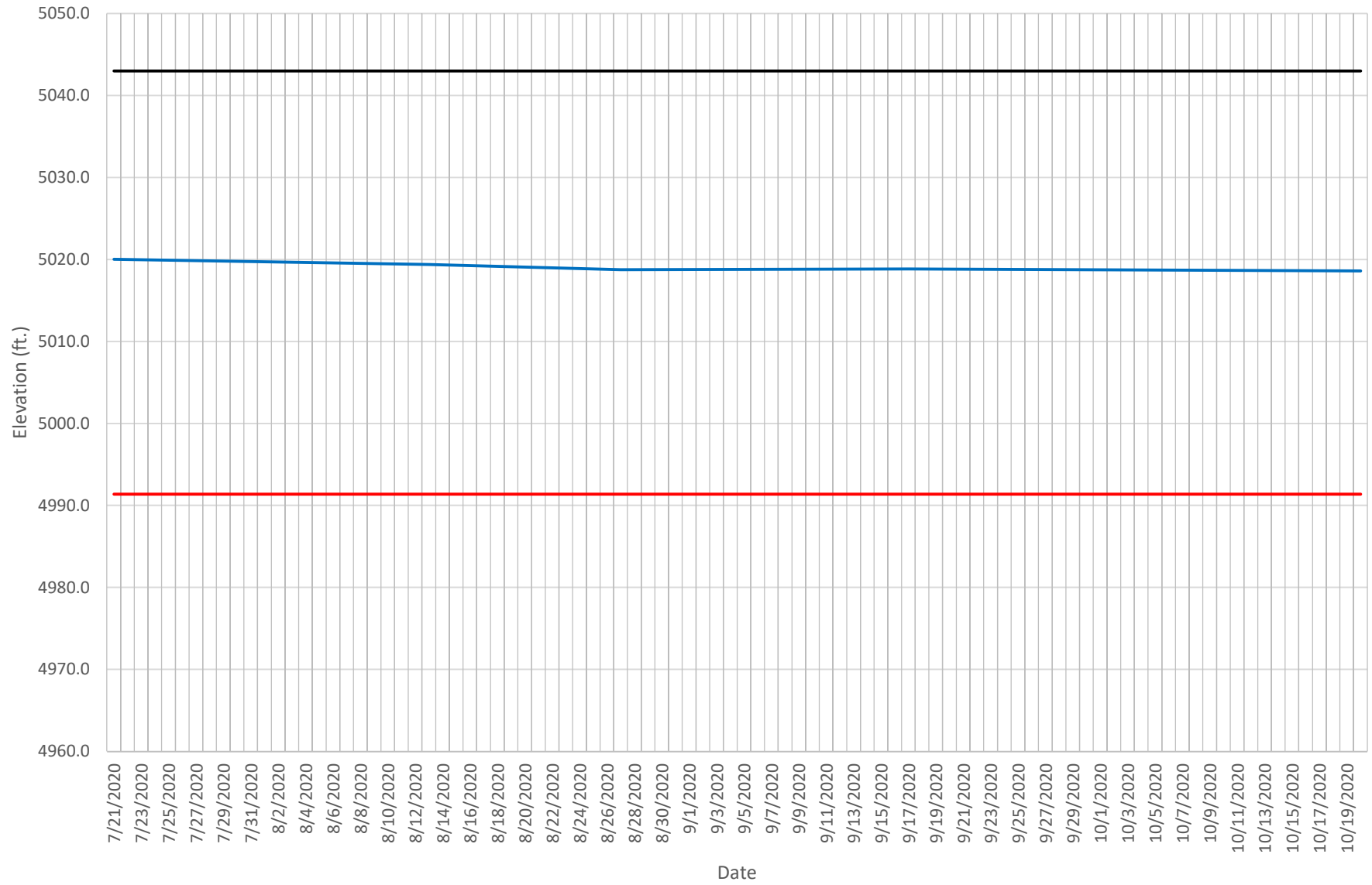


— Ground Elevation (ft.)

— Piezometer Tip Elevation (ft)

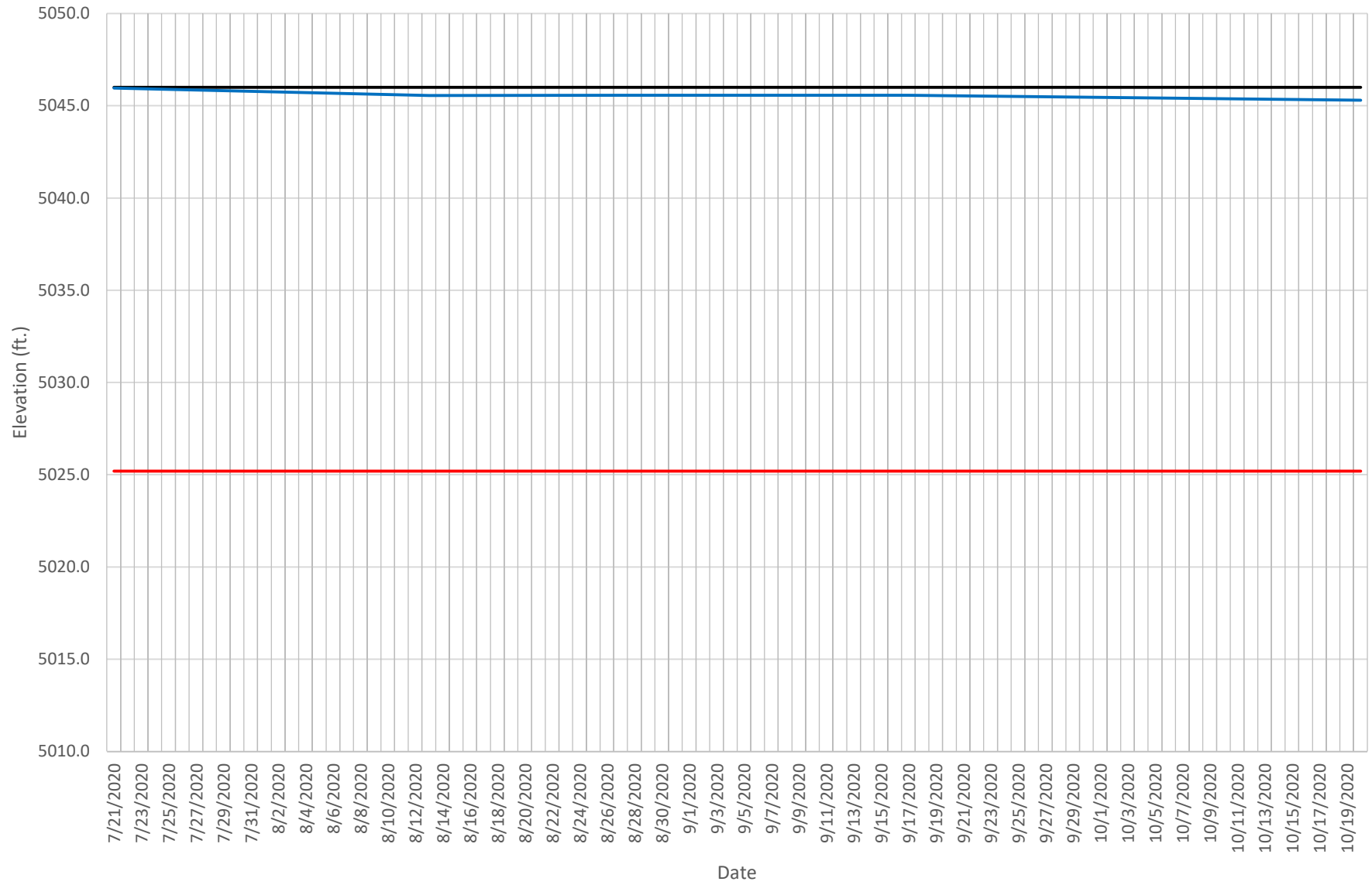
— Phreatic Surface Elevation (ft.)

VWP-26 - Sensor 1 (51.6')



— Ground Elevation (ft.) — Piezometer Tip Elevation (ft) — Phreatic Surface Elevation (ft.)

VWP-27 - Sensor 1 (20.8')



— Ground Elevation (ft.) — Piezometer Tip Elevation (ft) — Phreatic Surface Elevation (ft.)

APPENDIX K

WOOD TECHNICAL MEMORANDUM DOCUMENTING A COBALT LEACHING EVALUATION FOR THE BAP

Technical Memorandum

To: Arizona Public Service Company **File No:** 14-2018-2040

From: Dane Andersen, PG **Reviewed by:** Bruce Wielinga

Date: January 19, 2021

Subject: **COBALT LEACHING EVALUATION AT THE BOTTOM ASH POND**
Arizona Public Service Cholla Power Plant – Navajo County, Arizona

1.0 INTRODUCTION

This Technical Memorandum (Tech Memo) documents an evaluation performed by Wood Environment and Infrastructure Solutions, Inc. (Wood) at the Arizona Public Service (APS) Cholla Power Plant (the Site) in Navajo County, Arizona. The purpose of the evaluation is to investigate the cause of elevated cobalt concentrations in groundwater downgradient of the Bottom Ash Pond (BAP). The evaluation was proposed in the *Change Order Request for Continuing Corrective Measures Pre-Design Support* (Wood, 2019) and was conducted pursuant to requirements detailed in 40 Code of Federal Regulations (CFR) Sections (§) 257.90 through 257.98 (herein known as the coal combustion residuals [CCR] rule, Federal Register, 2018).

1.1 Site Background

A description of the site background, CCR groundwater monitoring system, and historical operational information is presented in the *Annual Groundwater Monitoring and Corrective Action Report for 2019* (Wood, 2020a). The subject of this investigation is the BAP, a CCR unit which primarily receives bottom ash slurry from the plant (Figure 1). The BAP impounds bottom ash slurry using a dam system comprised of an eastern and southern dam. The eastern dam is constructed on the Tanner Wash Alluvium and the Moenkopi Holbrook, Moenkopi Moqui (Moqui), and Chinle geologic units, while the southern dam is constructed on the Tanner Wash Alluvium and Moqui geologic unit. The southern BAP dam clay core extends through alluvium to bedrock where the alluvium was less than 20 feet (ft) thick at the time of construction. In regions where the alluvium was greater than 20 ft thick, a cutoff wall was constructed that generally extended to bedrock. Due to the depths involved, the cutoff wall does not extend to bedrock in the middle of the channel underlying the southern dam. There is an approximately 10 to 20-ft thick layer of alluvium below the base of the cutoff wall (at an elevation of 4,980 ft above mean sea level [amsl]) in this area. Groundwater near the BAP generally flows south-southwest through the Tanner Wash Alluvium to its confluence with the Little Colorado River Alluvium.

2.0 BASIS FOR INVESTIGATION AND STUDY METHOD

Cobalt, a constituent regulated under the CCR Rule's Appendix IV list, is present in groundwater downgradient of the BAP at concentrations exceeding the established cobalt groundwater protection standard (GWPS) of 0.006 milligrams per liter (mg/L). Based on the results of routine groundwater sampling conducted since the GWPS exceedance was declared for cobalt in October 2018, detected cobalt concentrations at compliance and supplementary monitoring wells downgradient of the BAP have ranged from 0.00079 mg/L at W-308 in February 2019 to 0.082 mg/L at W-307 in October 2019. Figure 1 depicts the inferred cobalt concentrations in groundwater based on the October 2019 sampling results, which are



comparable to concentrations observed in prior sampling events. Following the GWPS exceedance declaration, APS collected a pond water sample from the BAP on March 30, 2019 to evaluate if water seepage from the BAP could be a source of cobalt in the compliance wells. Laboratory analysis of the March 2019 BAP pond water sample detected cobalt at 0.00099 mg/L. This result suggests the elevated cobalt concentrations in groundwater may not be directly attributable to water in the BAP. As a result, Wood investigated potential causes of elevated cobalt concentrations at the compliance wells.

This Tech Memo documents the evaluation of potential causes of elevated cobalt concentrations in groundwater and the pathway traveled by groundwater with elevated cobalt. The potential causes and pathways that were investigated are:

- 1) Potential vertical stratification in the BAP causes varying concentrations of cobalt in the pond water;
- 2) The BAP seeps (e.g., Petroglyph) and weathering/fractures in the Moqui are preferential pathways for cobalt migration in groundwater;
- 3) Cobalt is present in solid matrices underlying the BAP, e.g., the bottom ash sediment material or the alluvium and/or Moqui member and is mobilized by BAP seepage; and
- 4) Cobalt is naturally present in groundwater in the weathered Moqui member, which is suspected to be hydraulically connected to the alluvial aquifer in certain locations, including downgradient compliance wells for the BAP.

To evaluate the potential causes of elevated cobalt identified above, Wood conducted multiple field sampling efforts in which water and solid matrix samples were collected from various locations and matrices at the BAP. The remainder of this section (Section 2.0) describes the sampling and analyses performed by Wood to address the identified data gaps and evaluate the potential causes of elevated cobalt in groundwater.

2.1 Potential Stratification - Pond Water and Influent Water

The pond water sample in which cobalt was detected at 0.00099 mg/L was collected along the shoreline of the BAP (i.e., near the BAP dam). Therefore, the analytical data from this single sample may not be representative of potential spatial variations of cobalt concentrations throughout water in the BAP. To evaluate this uncertainty, Wood collected depth-specific pond water samples from shallow, intermediate, and deep intervals at two locations near the center of the BAP (Figure 2). An influent water sample was also collected from the pipeline discharging to the BAP to characterize current slurry discharges. The depth-specific pond water samples and influent water sample were analyzed for select Appendix III and Appendix IV constituents and water quality constituents. Each water sample and associated analysis is summarized in Table 1. A description of the field sampling activities is provided in Section 3.1, and the water sampling results are discussed in Section 4.1.

2.2 Preferential Pathways - BAP Seepage Water and Moenkopi Moqui Groundwater

As cobalt is not a constituent that has historically been evaluated in water quality sampling at the Site, there is generally a poor understanding of cobalt concentrations in the water seeping from the BAP. Additionally, the extent of saturation in the Moqui (and associated cobalt concentrations in Moqui groundwater) is just beginning to be evaluated by APS, and assessing these pathways can provide a better understanding of cobalt migration at the BAP and may help to determine an alternative cause for the elevated cobalt in groundwater. Accordingly, Wood collected seepage water samples from the Petroglyph Seep and installed a monitoring well downgradient of the BAP in the Moqui (Wood, 2020b). The Moqui well, MW-70M, was

sampled at the end of well development. The water samples were analyzed for select Appendix III and Appendix IV constituents and water quality constituents. Each water sample and associated analysis is summarized in Table 1. The water sampling activities are described in Section 3.1, while results of the sampling are discussed in Section 4.1.

2.3 Cobalt in the Solid Matrices Underlying the BAP

Cobalt could be present in the solid materials underlying the BAP (e.g. bottom ash, alluvium, and/or the Moqui), and leaching from these materials could be the cause of the elevated cobalt concentrations in groundwater. To investigate this possibility, Wood collected solid matrix samples of bottom ash, alluvium, and Moqui from multiple depths and locations at the BAP. Each solid matrix sample was analyzed for cobalt and other inorganics, and select samples were analyzed using a synthetic precipitation leaching procedure (SPLP) and an alternate leaching procedure which uses pond water from the BAP as the leaching solution. The SPLP and BAP water leaching procedure are designed to assess the potential for cobalt and other inorganics to leach from the solid matrices into solution after contact with acidic water or BAP water, respectively. This is accomplished by incubating the solid matrix samples in a leach solution (acidic water for the SPLP test and pond water from the BAP for the BAP water leaching procedure) for a period of time, then analyzing the filtrate solution for cobalt, arsenic, boron, chromium, lithium, sulfate, and iron. Table 2 summarizes all solid matrix samples and the analyses performed. The solid matrix field sampling activities are discussed in Section 3.3, and results from the solid matrix analysis and two leaching procedures are discussed in Section 4.3.

3.0 DESCRIPTION OF INVESTIGATION ACTIVITIES

3.1 Water Sampling Activities

Water sample locations are depicted on Figure 2. After collection, each water sample was labeled and placed on ice before transport to TestAmerica, Inc. (TestAmerica), an Arizona Department of Health-certified laboratory (AZ0728).

3.1.1 Potential Stratification - Pond Water and BAP Influent Water Sampling

Wood subcontracted with Aquatic Consulting, LLC (Aquatic), to collect the depth-specific pond water samples and BAP influent water sample. Samples were collected on December 2, 2019. The depth-specific pond water samples were collected by mobilizing a small boat onto the surface of BAP to the two sampling locations. The sampling locations were recorded using a hand-held GPS unit with 10-ft accuracy and are depicted on Figure 2. Prior to sample collection, the depth of water at each sampling location was measured to determine appropriate sampling depths (i.e. shallow, intermediate, and deep intervals). The pond water samples were collected by Aquatic from the boat using a Kemmerer water sampler. Temperature and dissolved oxygen (DO) concentrations were recorded throughout the water column at approximately 1.5 ft depth intervals at both sampling locations using a YSI Pro 20 dissolved oxygen meter. Depth to bottom ash at Location 1 was notably deeper than depth to bottom ash at Location 2, at approximately 33 ft and 5 ft, respectively. Eight gallons of pond water were collected from BAP locations 1 and 2 for use as leaching solution to assess the leaching characteristics of the solid matrices underlying the BAP (Section 2.2). The influent water sample was collected from the BAP outfall pipe while bottom ash slurry was discharging to the BAP.

3.1.2 Preferential Pathways - Petroglyph Seep Sampling and MW-70M Groundwater Sampling

Wood collected two seepage water samples from the Petroglyph Seep and one seepage water sample from the seepage collection sump on December 2, 2019 (Figure 2). A groundwater sample was collected from MW-70M at the end of well development on November 22, 2020. Details of the MW-70M well installation and development activities are summarized in the *Well Installation of MW-69A and MW70M* (Wood, 2020b).

3.2 Solid Matrix Sampling

The solid matrix sampling locations were surveyed by an Arizona-registered land surveyor and are depicted on Figure 2. After collection, the samples were labeled and placed on ice before delivery to TestAmerica.

3.2.1 Bottom Ash Sampling

Wood collected samples of bottom ash from the subsurface and from the bank of the depressed inlet discharge area created by the outfall pipe to characterize potential spatial and vertical cobalt variations in bottom ash. The subsurface samples were collected on November 19, 2019 from two borings advanced into the roadway dividing the northern and southern portions of the BAP, which is constructed on top of bottom ash. Wood subcontracted with Boart Longyear, a licensed Arizona driller, to advance the borings using the Sonic drilling method. Three bottom ash samples were collected from the two borings at shallow, intermediate, and deep intervals. The bottom ash was observed to be approximately 53 ft thick and underlain by alluvium in BAP Boring Location 2; the bottom ash in BAP Boring Location 1 was observed to be approximately 36 ft thick and underlain by the Holbrook member of the Moenkopi Formation. Lithologic logs for the borings are included as Attachment A. The inlet area bank samples were collected on December 2, 2019 from the bottom ash that dropped out of the slurry between the outfall location and the BAP pool. Two samples of bottom ash were collected from the inlet area; a coarse-grained sample and a fine-grained sample.

3.2.2 Alluvium and Moqui Sampling

One sample of alluvium, one sample of weathered and saturated Moqui, and one sample of unweathered and dry Moqui were collected from borings advanced during the installation of monitoring wells MW-69A and MW-70M (Wood, 2020b). The well borings were drilled by Boart Longyear between November 18 and 20, 2019. One sample of the alluvium underlying bottom ash in the BAP was also collected on November 19 during the advancement of BAP Boring Location 2 (Section 3.2.1).

4.0 STUDY RESULTS

Analytical laboratory reports for the samples collected during this investigation are included as Attachment B. The sample results are presented in Tables 3 through 6 and discussed in this section (Section 4.0).

4.1 Potential Stratification - Pond Water and Influent Water Results

Analytical results for the pond water samples and influent water sample are presented in Table 3. Cobalt concentrations for the depth-specific pond water samples were essentially uniform, with a range between 0.0011 mg/L and 0.0013 mg/L, indicating cobalt concentrations in BAP water are not spatially variable. The cobalt concentration measured from the BAP influent water sample is 0.0053 mg/L, which, while higher than cobalt concentrations measured in the stratified pond water samples, is still an order of magnitude less than cobalt concentrations in monitoring wells downgradient of the BAP. The results are consistent with the relatively low cobalt concentrations measured in the previous pond water sample collected from the BAP

and provide further evidence that the water in the BAP is not directly the source of the elevated cobalt concentrations in groundwater.

The temperature and DO measurements at each pond water sampling location are depicted on Figures 3 and 4. The DO measurements generally range between 8.0 and 10.9 mg/L, suggesting oxygenated conditions throughout the majority of water in the BAP. However, the DO concentrations decreased with depth at both sampling locations and DO was measured at 1.3 mg/L at the deepest sampling interval at Pond Sample Location 1 (32.8 ft below water surface). These observations suggest that reducing conditions may be present in deeper portions of BAP water. The significance of potentially reduced BAP water conditions is discussed in Section 5.0.

4.2 Petroglyph Seep and MW-70M Sample Results

Analytical results for the water samples collected from the Petroglyph Seep, seepage collection sump, and MW-70M are presented in Table 3. Cobalt concentrations measured in these samples range between 0.019 and 0.021 mg/L. The results are comparable to cobalt concentrations measured in alluvial monitoring wells located near the edge of the BAP (e.g. M-53A, W-305, W-314). The water chemistry results from the Petroglyph Seep and MW-70M samples are depicted on Figure 5. Water samples from the BAP pond, the BAP influent, the Petroglyph Seep and sump, and groundwater from the Moqui are all sodium chloride water types. The results suggest that, near the BAP dam, similar geochemical conditions (with respect to cobalt) exist in the alluvial groundwater, the Moqui groundwater, and the Petroglyph Seep water.

4.3 Solid Matrix and Leaching Procedure Results

Analytical results for the solid matrix samples are presented in Table 4. Cobalt concentrations in the samples collected from the historically deposited bottom ash beneath the roadway range between 0.46 and 1.8 mg/kg, while cobalt concentrations in the samples of newly deposited bottom ash collected beneath the BAP influent range from 0.049 to 0.66 mg/kg. Cobalt concentrations measured in the alluvial samples range between 2.4 and 3.3 mg/kg. Cobalt concentrations measured in the weathered Moqui samples range between 4.7 and 5.5 mg/kg, while the cobalt concentration measured in the unweathered Moqui sample is 6.6 mg/kg.

Results from the bottom ash samples suggest that cobalt concentrations in the bottom ash deposits do not vary significantly with location, depth, or age of deposition. It should be noted that concentrations of each constituent analyzed in the bottom ash samples are dependent on the chemical composition of the coal from which the bottom ash was produced. Cobalt concentrations detected in the bottom ash samples are less than cobalt concentrations detected in the alluvium and the Moqui samples. The results suggest that the bottom ash is not a significant source of cobalt, especially when compared to cobalt concentrations measured in the alluvium or Moqui.

For the alluvial sample results, a comparison can be made to the background cobalt concentration for soils in the Western United States, which is estimated at approximately 7.1 mg/kg (Shacklette and Boerngen, 1984). The relatively lower cobalt concentrations measured in the alluvial samples suggest either that cobalt leaching from the alluvial samples may have occurred, or that the site-specific cobalt background concentration is lower than the concentration cited in the Shacklette and Boerngen study.

Cobalt concentrations measured in the weathered and unweathered Moqui samples are relatively comparable to cobalt concentrations in the alluvial samples.

The analytical results from the SPLP and BAP water leaching procedure are summarized in Tables 5 and 6, respectively. Cobalt was not detected above the laboratory method detection limit of 0.0075 mg/L for any

samples analyzed by the SPLP and BAP water leaching procedures. These results would suggest that cobalt leaching from the solid matrices as a result of contact with acidic water or BAP water is not occurring under the conditions evaluated by the leaching procedures.

There are two limitations to the leaching procedure that render this evaluation not fully representative of the in-situ conditions at the BAP. These are:

- If cobalt leaching from the collected samples had occurred prior to the time of sample collection, the laboratory analyses would not provide a realistic assessment of the cobalt leaching properties of the solid matrices.
- Mobilization of cobalt from solid materials can occur if the solid materials interact with BAP seepage under reduced conditions. Because the water collected for the BAP leaching analysis was collected near the BAP surface (where DO measurements indicate relatively oxidized conditions), the analysis failed to evaluate the interaction of the solid matrices under reduced conditions.

Due to the limitations described above, the leaching procedure results are not considered to be fully representative of the geochemical conditions that may cause cobalt mobilization from solid matrices at the BAP.

5.0 CONCLUSIONS AND RECOMMENDATIONS

The analytical data collected during this investigation support the conclusion that water in the BAP is not directly attributable to the elevated cobalt concentrations in groundwater. It is possible, however, that reducing conditions exist in the deeper portions of the BAP water, in the pore water within the bottom ash deposits, or in the uppermost aquifer underlying the BAP. If this is the case, the mobilization of cobalt from the bottom ash solids and/or the underlying formation could occur. Therefore, Wood recommends analyzing groundwater samples collected from BAP monitoring wells for several redox-sensitive constituents, which include the following:

- Analyzing groundwater samples from M-52A, M-55A, MW-69A, MW-70M, W-301, W-302, W-303, W-304, W-305, W-306, W-307, W-308, W-309, and W-314, for ammonia, nitrate/nitrite, dissolved and total manganese, dissolved and total iron, dissolved organic carbon and total organic carbon, and field speciation analysis for ferrous iron and nitrite using colorimetric field sampling methods.

The redox-sensitive constituents listed above can provide an indication of local redox conditions and the speciation of trace metals relevant to cobalt mobilization, which can provide field data sufficient to evaluate whether cobalt is entering the groundwater via mobilization from solid matrices. Determination of the groundwater redox conditions will also support the technical evaluation of remedial alternatives for the BAP.

6.0 REFERENCES

- Federal Register. 2018. *40 Code of Federal Regulations Part 257 – Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities.*; Final Rule promulgated April 17, 2015 with Amendments to the National Minimum Criteria (Phase One, Part One) effective August 29, 2018.
- Shacklette, H.T. and J.G. Boerngen. 1984. *Element Concentrations in Soils and other Surficial Materials of the Conterminous United States*. United States Geological Survey Professional Paper 1270.
- Wood Environment & Infrastructure Solutions, Inc. (Wood). 2019. *Change Order Request for Continuing Corrective Measures Pre-Design Support*. Arizona Public Service Company. Cholla Power Plant, Navajo County, Arizona. November 12, 2019.
- Wood. 2020a. *Annual Groundwater Monitoring and Corrective Action Report for 2019. Coal Combustion Residuals Rule and Aquifer Protection Permit Compliance*. Arizona Public Service Company. Cholla Power Plant, Navajo County, Arizona. Prepared on behalf of Arizona Public Service. January 31, 2020.
- Wood. 2020b. *Well Installation of MW-69A and MW-70M*. Arizona Public Service Company. Cholla Power Plant, Navajo County, Arizona. January 31, 2020.

wood.

TABLES



Table 1
Water Sampling Summary

Sample Location	Sample Identification	Sample Depth (ft)	Water Type	CCR Constituent Analyses	Other Analyses
Pond Sample Location 1	BAP-01-120219-1	3.3	Pond Water	Arsenic, boron, calcium, chloride, chromium, cobalt, lithium, sulfate	Alkalinity, Bicarbonate, Magnesium, Sodium
	BAP-01-120219-5	16.4	Pond Water	Arsenic, boron, calcium, chloride, chromium, cobalt, lithium, sulfate	Alkalinity, Bicarbonate, Magnesium, Sodium
	BAP-01-120219-9	29.5	Pond Water	Arsenic, boron, calcium, chloride, chromium, cobalt, lithium, sulfate	Alkalinity, Bicarbonate, Magnesium, Sodium
Pond Sample Location 2	BAP-02-120219-0.5	1.6	Pond Water	Arsenic, boron, calcium, chloride, chromium, cobalt, lithium, sulfate	Alkalinity, Bicarbonate, Magnesium, Sodium
	BAP-02-120219-1	3.3	Pond Water	Arsenic, boron, calcium, chloride, chromium, cobalt, lithium, sulfate	Alkalinity, Bicarbonate, Magnesium, Sodium
	BAP-02-120219-1.5	4.9	Pond Water	Arsenic, boron, calcium, chloride, chromium, cobalt, lithium, sulfate	Alkalinity, Bicarbonate, Magnesium, Sodium
BAP Influent Outfall Location	BAP-INF-120219	Surface	Influent Water	Arsenic, boron, calcium, chloride, chromium, cobalt, lithium, sulfate	Alkalinity, Bicarbonate, Magnesium, Sodium
Petroglyph Seep Location 1	PS-01-120219	Surface	Seepage Water	Arsenic, boron, calcium, chloride, chromium, cobalt, lithium, sulfate	Alkalinity, Bicarbonate, Magnesium, Sodium
Petroglyph Seep Location 2	PS-02-120219	Surface	Seepage Water	Arsenic, boron, calcium, chloride, chromium, cobalt, lithium, sulfate	Alkalinity, Bicarbonate, Magnesium, Sodium
Petroglyph Seep Sump	PS-S-120219	Surface	Seepage Water	Arsenic, boron, calcium, chloride, chromium, cobalt, lithium, sulfate	Alkalinity, Bicarbonate, Magnesium, Sodium
MW-70M	MW70M-112219	---	Groundwater	Arsenic, boron, calcium, chloride, chromium, cobalt, lithium, sulfate	Alkalinity, Bicarbonate, Iron, Magnesium, Sodium

Abbreviations:

BAP - Bottom Ash Pond

ft - feet

Table 2
Solid Matrix Sampling Summary

Sample Location	Sample Identification	Sample Depth (ft bgs)	Sample Matrix	Solid Matrix Analyses	Leaching Analyses*
BAP Boring Location 1	BAP-BOR-111919-10	10	Bottom Ash	Arsenic, boron, chromium, cobalt, iron, lithium, sulfate	SPLP, BAP Water Leaching Procedure
	BAP-BOR-111919-32	32	Bottom Ash	Arsenic, boron, chromium, cobalt, iron, lithium, sulfate	---
BAP Boring Location 2	BAP-BOR2-111919-55	55	Bottom Ash	Arsenic, boron, chromium, cobalt, iron, lithium, sulfate	SPLP, BAP Water Leaching Procedure
	BAP-BOR2-111919-60	60	Alluvium	Arsenic, boron, chromium, cobalt, iron, lithium, sulfate	---
BAP Influent Location	BAP-INF-120219-SED	0.1	Bottom Ash (coarse)	Arsenic, boron, chromium, cobalt, iron, lithium, sulfate	---
	BAP-INF-120219-SILT	0.1	Bottom Ash (fine)	Arsenic, boron, chromium, cobalt, iron, lithium, sulfate	---
MW-69A	MW69A-AL-111819-24	24	Alluvium	Arsenic, boron, chromium, cobalt, iron, lithium, sulfate	SPLP, BAP Water Leaching Procedure
	MW69A-AL-111819-44	44	Weathered Moqui	Arsenic, boron, chromium, cobalt, iron, lithium, sulfate	SPLP, BAP Water Leaching Procedure
MW-70M	MW70M-MOQ-112019-39	39	Weathered Moqui	Arsenic, boron, chromium, cobalt, iron, lithium, sulfate	SPLP, BAP Water Leaching Procedure
	MW70M-MOQ-112119-77	77	Unweathered Moqui	Arsenic, boron, chromium, cobalt, iron, lithium, sulfate	SPLP, BAP Water Leaching Procedure

Notes:

*SPLP and BAP Water Leaching Procedure samples analyzed for arsenic, boron, chromium, cobalt, iron, lithium, sulfate

Abbreviations:

BAP - Bottom Ash Pond

ft bgs - feet below ground surface

SPLP - Synthetic Precipitation Leaching Procedure

Table 3
Water Sample Results

Sample Location			Pond Sample Location 1			Pond Sample Location 2			Bottom Ash Influent	Petroglyph Seep Location 1	Petroglyph Seep Location 2	Petroglyph Seep Sump	MW-70M
Depth (ft)			3.3	16.4	29.5	1.6	3.3	4.9	Surface	Surface	Surface	Surface	---
Analyte	Units	GWPS	12/2/19	12/2/19	12/2/19	12/2/19	12/2/19	12/2/19	12/2/19	12/2/19	12/2/19	12/2/19	11/22/19
Boron	mg/L	---	3.2	3.3	3.2	3.1	3.2	3.2	3.0	3.4	3.4	3.5	1.8
Calcium	mg/L	---	500	510	500	480	500	500	500	610	630	630	680
Chloride	mg/L	---	2,000	2,000	2,100	2,000	2,000	2,000	2,200	2,300	2,300	2,400	2,400
Sulfate	mg/L	---	2,800	2,800	2,900	2,800	2,800	2,800	3,100	3,000	3,000	3,000	2,600
Arsenic	mg/L	0.01	0.023	0.017	0.023	0.020	0.021	0.022	0.021	<0.015	<0.015	<0.015	<0.10
Chromium	mg/L	0.1	<0.0027	<0.0027	<0.0027	<0.0027	<0.0027	<0.0027	0.0030	<0.0027	<0.0027	<0.0027	<0.010
Cobalt	mg/L	0.006	0.0013	0.0011	0.0011	0.0011	0.0011	0.0011	0.0053	0.020	0.021	0.019	0.019
Lithium	mg/L	0.31	0.16	0.16	0.16	0.15	0.16	0.16	0.16	0.19	0.19	0.19	0.20
Alkalinity as CaCO3	mg/L	---	120	120	120	120	120	130	110	74	74	74	84
Alkalinity, Phenolphthalein	mg/L	---	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	---
Bicarbonate Alkalinity as CaCO3	mg/L	---	120	120	120	120	120	130	110	74	74	74	84
Carbonate Alkalinity as CaCO3	mg/L	---	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	---
Hydroxide Alkalinity as CaCO3	mg/L	---	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0	---
Iron	mg/L	---	---	---	---	---	---	---	---	---	---	---	<0.10
Magnesium	mg/L	---	290	300	290	290	300	300	310	240	240	250	160
Sodium	mg/L	---	1,300	1,400	1,400	1,400	1,400	1,400	1,500	1,600	1,600	1,600	1,400

Notes:
Appendix III constituents are highlighted in dark green
Appendix IV constituents are highlighted in light green
Concentrations exceeding respective Groundwater Protection Standards are bolded

Abbreviations:
BAP - Bottom Ash Pond
ft - feet
GWPS - Groundwater Protection Standard
mg/L - milligrams per liter

Table 4
Solid Matrix Sample Results

Sample Location		BAP Boring Location 1		BAP Boring Location 2		MW-69A		MW-70M		BAP Influent	
Depth (ft bgs) (Sample Type)		10 (Bottom Ash)	32 (Bottom Ash)	55 (Bottom Ash)	60 (Alluvium)	24 (Alluvium)	44 (Weathered Moqui)	39 (Weathered Moqui)	77 (Unweathered Moqui)	0.1 (Bottom Ash - Coarse)	0.1 (Bottom Ash - Fine)
Analyte	Units	11/19/19	11/19/19	11/19/19	11/19/19	11/18/19	11/18/19	11/20/19	11/21/19	12/2/19	12/2/19
Boron	mg/kg	5.6	8.4	19	5.6	6.9	5.8	7.4	5.8	14	30
Sulfate	mg/kg	1,300	1,300	3,100	300	1,500	93	3,200	210	---	---
Arsenic	mg/kg	<1.5	<1.5	<1.5	1.7	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
Chromium	mg/kg	0.90	1.3	5.3	4.8	5.4	8.8	7.3	14	2.0	2.7
Cobalt	mg/kg	0.46	0.60	1.8	2.4	3.3	5.5	4.7	6.6	0.66	0.049
Lithium	mg/kg	<2.0	<2.0	3.1	6.7	7.4	12	10	26	2.2	3.2
Iron	mg/kg	1,100	1,200	4,000	7,600	9,600	13,000	10,000	11,000	32,000	8,200

Abbreviations:
BAP - Bottom Ash Pond
ft bgs - feet below ground surface
mg/kg - milligrams per kilogram

Table 5
Synthetic Precipitation Leaching Procedure Results

Sample Location			BAP Boring Location 1	BAP Boring Location 2	MW-69A		MW-70M	
Depth (ft bgs) (Sample Type)			32 (Bottom Ash)	55 (Bottom Ash)	24 (Alluvium)	44 (Weathered Moqui)	39 (Weathered Moqui)	(Unweathered Moqui)
Analyte	Units	GWPS	11/19/19	11/19/19	11/18/19	11/18/19	11/20/19	11/21/19
Boron	mg/L	---	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Sulfate	mg/L	---	67	--	110	9.6	570	15
Arsenic	mg/L	0.01	<0.028	<0.028	<0.028	<0.028	0.028	<0.028
Chromium	mg/L	0.1	<0.0055	<0.0055	<0.0055	<0.0055	<0.0055	0.0095
Cobalt	mg/L	0.006	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075
Lithium	mg/L	0.31	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Iron	mg/L	---	<0.11	<0.11	0.32	9.7	0.20	9.6

Notes:

Appendix III constituents are highlighted in dark green

Appendix IV constituents are highlighted in light green.

Abbreviations:

BAP = Bottom Ash Pond

GWPS = Groundwater Protection Standard

mg/L = milligrams per liter

Table 6
BAP Water Leaching Procedure Results

Sample Location			BAP Boring Location 1	BAP Boring Location 2	MW-69A		MW-70M	
Depth (ft bgs) (Sample Type)			32 (Bottom Ash)	55 (Bottom Ash)	24 (Alluvium)	44 (Weathered Moqui)	39 (Weathered Moqui)	(Unweathered Moqui)
Analyte	Units	GWPS	11/19/19	11/19/19	11/18/19	11/18/19	11/20/19	11/21/19
Boron	mg/L	---	3.4	3.3	3.4	3.2	3.4	3.2
Sulfate	mg/L	---	2,800	---	3,000	2,800	3,000	2,800
Arsenic	mg/L	0.01	0.032	<0.028	<0.028	<0.028	0.028	<0.028
Chromium	mg/L	0.1	<0.0055	<0.0055	<0.0055	<0.0055	<0.0055	<0.0055
Cobalt	mg/L	0.006	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075	<0.0075
Lithium	mg/L	0.31	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Iron	mg/L	---	<0.11	<0.11	<0.11	<0.11	<0.11	<0.11

Notes:

Appendix III constituents are highlighted in dark green

Appendix IV constituents are highlighted in light green

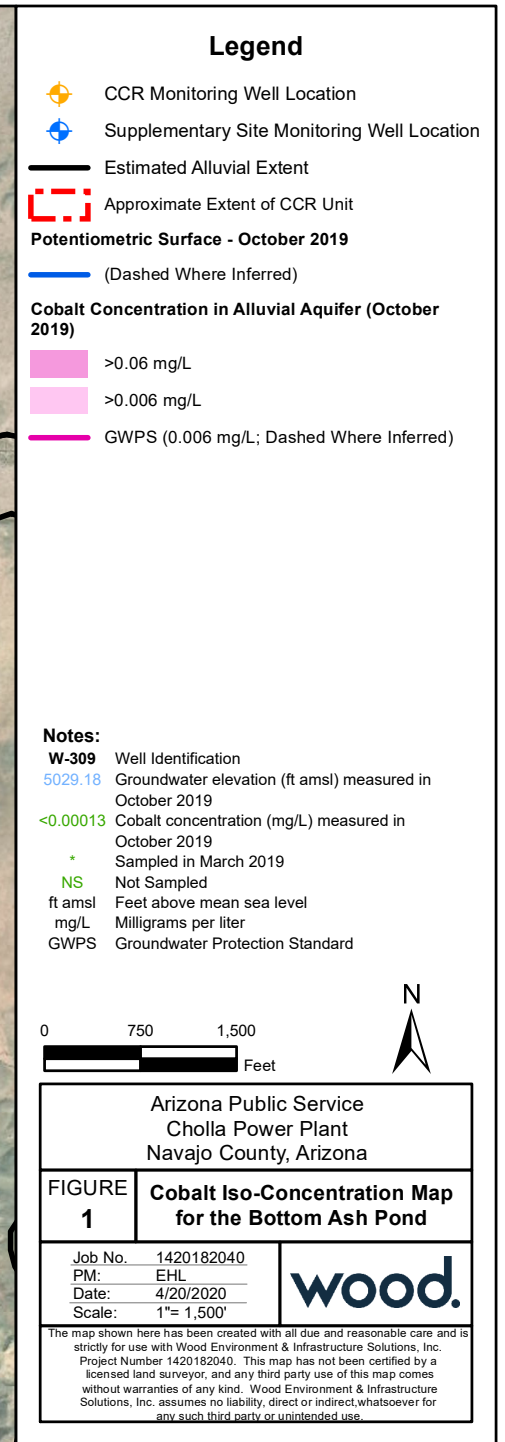
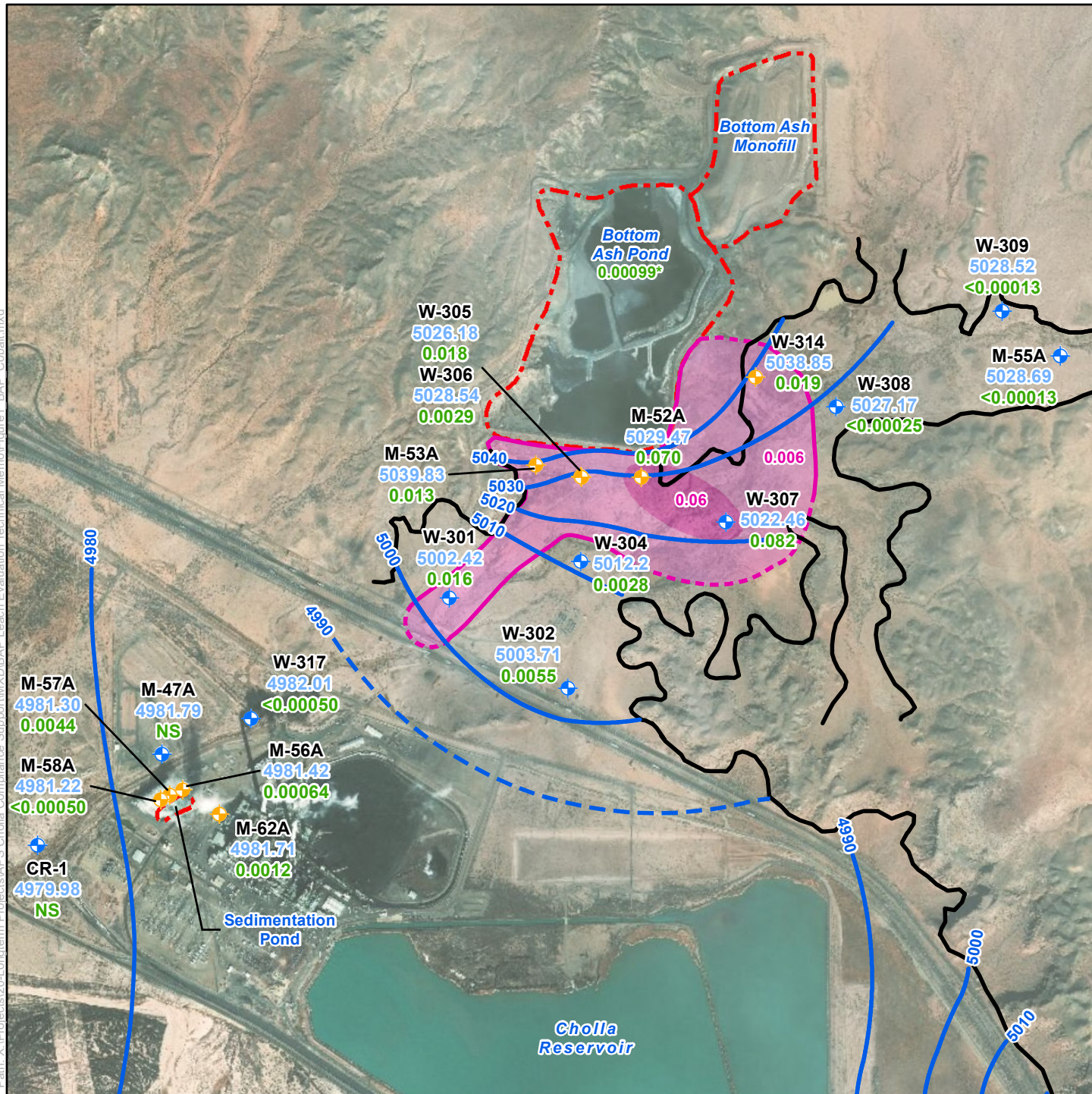
Abbreviations:

BAP = Bottom Ash Pond

GWPS = Groundwater Protection Standard

mg/L = milligrams per liter






FIGURES

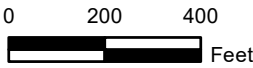


Path: X:\Projects\20-Longterm Projects\APS Cholla Compliance Support\MXD\BAP Leach Evaluation Technical Memo\Figure2_SampleLocationMap.mxd



Legend

-  Water Sample Location
-  Solid Matrix Sample Location
-  Supplementary Site Monitoring Well Location
-  Ephemeral Surface Water Feature
-  Approximate Extent of CCR Unit



Arizona Public Service
Cholla Power Plant
Navajo County, Arizona

Figure
2

Sample Location Map

Job No. 14-2018-2040
PM: EHL
Date: 4/20/2020
Scale: 1"= 400'

wood.

The map shown here has been created with all due and reasonable care and is strictly for use with Wood Project Number 14-2018-2040. This map has not been certified by a licensed land surveyor, and any third party use of this map comes without warranties of any kind. Wood assumes no liability, direct or indirect, whatsoever for any such third party or unintended use.

Figure 3
Temperature and Dissolved Oxygen Profile
Pond Sample Location 1

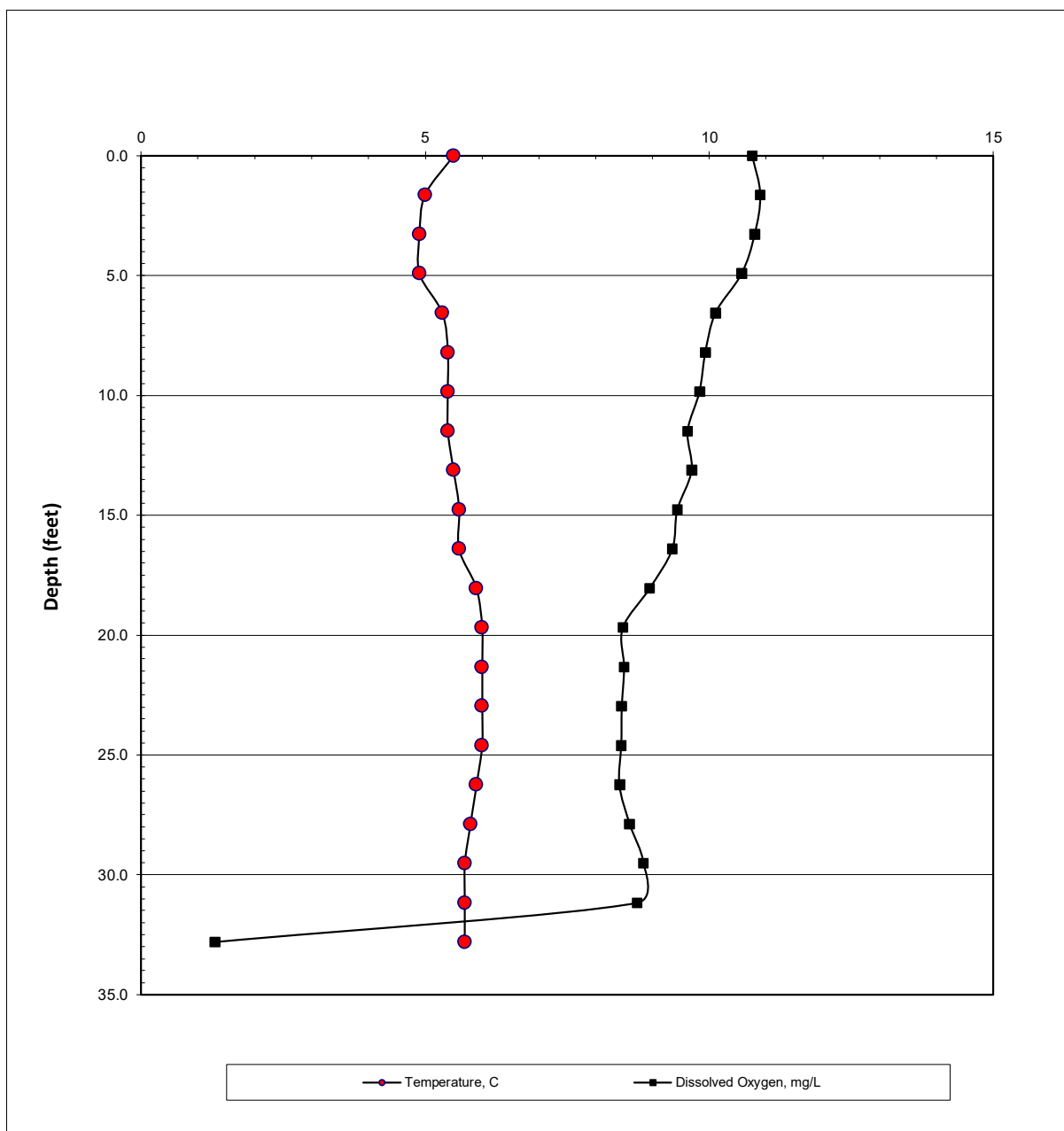


Figure 4
Temperature and Dissolved Oxygen Profile
Pond Sample Location 2

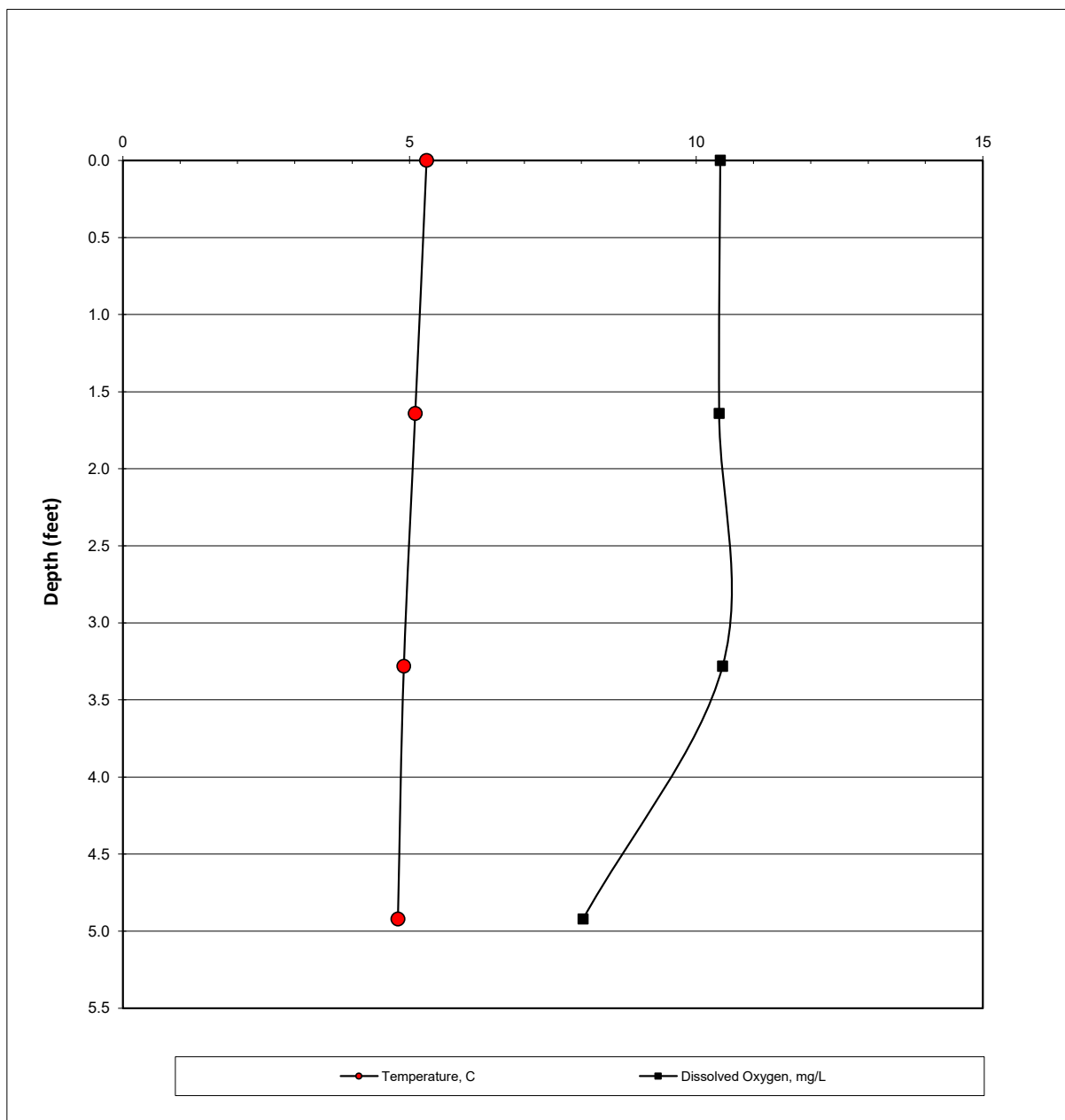
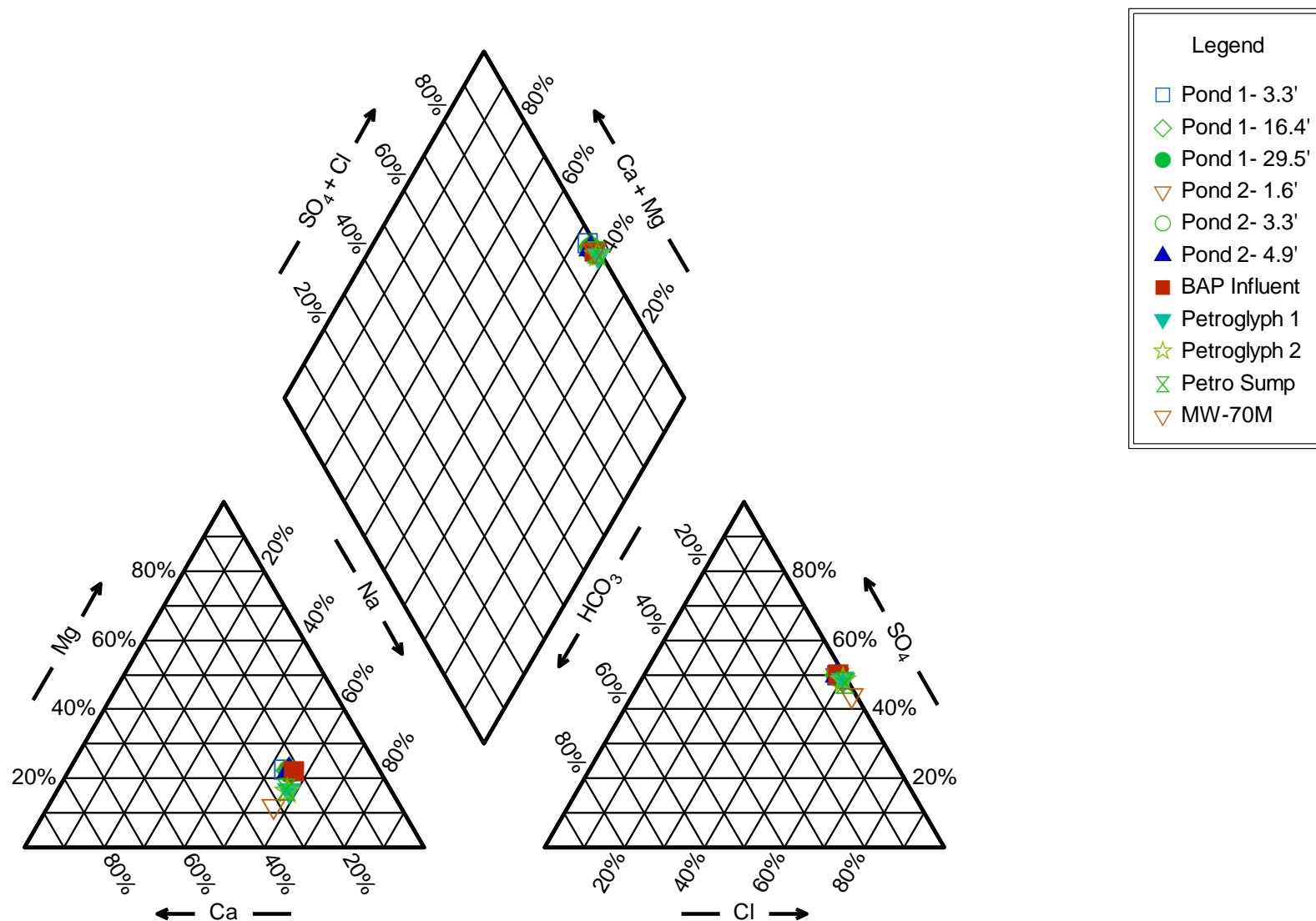
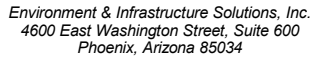


Figure 5 - Piper Diagram



ATTACHMENT A

LITHOLOGIC LOGS AND WELL CONSTRUCTION DIAGRAMS



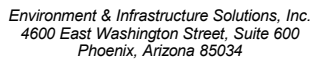
Page 1 of 2

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▼			
▼			
▼			

SAMPLE TYPE
A - Drill cuttings
S - 2" O.D. 1.38" I.D. tube sample
U - 3" O.D. 2.42" I.D. tube sample
T - Thin Walled Shelby tube sample
NR - No Recovery

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Page 2 of 2

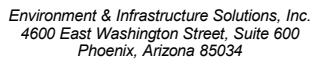
Page 2 of 2

PROJECT FEATURE:	Bottom Ash Pond
-------------------------	-----------------

GROUNDWATER

METHOD	N/A
--------	-----

A - Drill cuttings
S - 2" O.D. 1.38" I.D. tube sample
U - 3" O.D. 2.42" I.D. tube sample
T - Thin Walled Shelby tube sample
NR - No Recovery



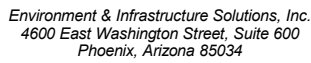
Page 1 of 3

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▼			
▼			
▼			

SAMPLE TYPE
A - Drill cuttings
S - 2" O.D. 1.38" I.D. tube sample
U - 3" O.D. 2.42" I.D. tube sample
T - Thin Walled Shelby tube sample
NR - No Recovery

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Page 2 of 3

Page 2 of 3

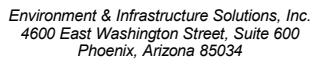
PROJECT FEATURE:	Bottom Ash Pond
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GROUNDWATER

METHOD	N/A
--------	-----

A - Drill cuttings
S - 2" O.D. 1.38" I.D. tube sample
U - 3" O.D. 2.42" I.D. tube sample
T - Thin Walled Shelby tube sample
NR - No Recovery

(Continued Next Page)



Page 3 of 3

Page 3 of 3

PROJECT FEATURE:	Bottom Ash Pond
-------------------------	-----------------

GROUNDWATER

METHOD	N/A
--------	-----

A - Drill cuttings
S - 2" O.D. 1.38" I.D. tube sample
U - 3" O.D. 2.42" I.D. tube sample
T - Thin Walled Shelby tube sample
NR - No Recovery

ATTACHMENT B

ANALYTICAL LABORATORY REPORTS

ANALYTICAL REPORT

Eurofins TestAmerica, Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-133801-1
Client Project/Site: APS Chollac Plant

For:
Wood E&I Solutions Inc
4634 South 36th Place
Lab
Phoenix, Arizona 85040

Attn: Dane Andersen



Authorized for release by:
1/15/2020 7:48:52 AM

Ken Baker, Project Manager II
(602)659-7624
ken.baker@testamericainc.com

LINKS

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results through

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Sample Summary	5
Detection Summary	6
Client Sample Results	8
QC Sample Results	13
QC Association Summary	21
Lab Chronicle	26
Certification Summary	31
Method Summary	32
Chain of Custody	33
Receipt Checklists	34

Definitions/Glossary

Client: Wood E&I Solutions Inc
Project/Site: APS Chollac Plant

Job ID: 550-133801-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D2	Sample required dilution due to high concentration of analyte.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
H1	Sample analysis performed past holding time.
H4	Sample was extracted past required extraction holding time, but analyzed within analysis HT.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.

Metals

Qualifier	Qualifier Description
B1	Target analyte detected in method blank at or above the method reporting limit.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above MDL.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Wood E&I Solutions Inc
Project/Site: APS Chollac Plant

Job ID: 550-133801-1

Job ID: 550-133801-1

Laboratory: Eurofins TestAmerica, Phoenix

Narrative

Job Narrative 550-133801-1

Comments

No additional comments.

Receipt

The samples were received on 11/22/2019 2:53 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 1.7° C, 2.8° C and 4.2° C.

Receipt Exceptions

Did not login methods upon sample receipt; waiting on leachate water from client.

BAP-BOR-111919-10 (550-133801-1), BAP-BOR-111919-32 (550-133801-2), MW70M-MOQ-112119-77 (550-133801-3), BAP-BOR2-111919-60 (550-133801-4), MW69A-AL-111819-24 (550-133801-5), MW69A-AL-111819-44 (550-133801-6), BAP-BOR2-111919-55 (550-133801-7), MW70M-MOQ-112019-39 (550-133801-8) and DUP-02 (550-133801-9)

HPLC/IC

Method 9056A: A matrix spike / matrix spike duplicate (MS/MSD) was not prepared for Sulfate by SPLP DI Leach Extraction per method EPA 1312/9056A associated with analytical batch 550-197316 due to an analyst error. A sample duplicate (DU) was prepared in lieu of a MS/MSD which may be used to verify batch precision data. In addition, the results for the associated laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were within acceptance limits which may be used to verify batch accuracy and precision data. As such, these data have been reported.

BAP-BOR-111919-32 (550-133801-2), MW70M-MOQ-112119-77 (550-133801-3), MW69A-AL-111819-24 (550-133801-5), MW69A-AL-111819-44 (550-133801-6), MW70M-MOQ-112019-39 (550-133801-8), DUP-02 (550-133801-9) and (550-133801-A-2-B DU)

Method 9056A: The following samples were extracted and analyzed outside of the 28 day analytical holding time for Sulfate by method EPA 9056A due to an analyst scheduling error; MW69A-AL-111819-24 (550-133801-5) and MW69A-AL-111819-44 (550-133801-6).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method 6010C: Boron and Lithium are provided for qualitative analysis only per client request. Results may not be used for compliance.

MW69A-AL-111819-24 (550-133801-5), MW69A-AL-111819-44 (550-133801-6), BAP-BOR2-111919-55 (550-133801-7), MW70M-MOQ-112019-39 (550-133801-8), DUP-02 (550-133801-9) and (550-133801-C-2-E)

Method 6010C: Boron and Lithium are reported for qualitative purposes only. Results ca not be used for compliance.

MW69A-AL-111819-24 (550-133801-5), MW69A-AL-111819-44 (550-133801-6), BAP-BOR2-111919-55 (550-133801-7), MW70M-MOQ-112019-39 (550-133801-8), DUP-02 (550-133801-9) and (550-133801-C-2-E)

Method 6010C: The method leachate blank for preparation batch 550-197111 and 550-197194 and analytical batch 550-199812 contained iron above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Chollac Plant

Job ID: 550-133801-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
550-133801-1	BAP-BOR-111919-10	Solid	11/19/19 09:33	11/22/19 14:53	
550-133801-2	BAP-BOR-111919-32	Solid	11/19/19 09:51	11/22/19 14:53	
550-133801-3	MW70M-MOQ-112119-77	Solid	11/21/19 15:22	11/22/19 14:53	
550-133801-4	BAP-BOR2-111919-60	Solid	11/19/19 14:15	11/22/19 14:53	
550-133801-5	MW69A-AL-111819-24	Solid	11/18/19 11:32	11/22/19 14:53	
550-133801-6	MW69A-AL-111819-44	Solid	11/18/19 11:24	11/22/19 14:53	
550-133801-7	BAP-BOR2-111919-55	Solid	11/19/19 13:03	11/22/19 14:53	
550-133801-8	MW70M-MOQ-112019-39	Solid	11/20/19 15:55	11/22/19 14:53	
550-133801-9	DUP-02	Solid	11/20/19 16:40	11/22/19 14:53	

Detection Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Chollac Plant

Job ID: 550-133801-1

Client Sample ID: BAP-BOR-111919-10

Lab Sample ID: 550-133801-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	1300	M3	20	2.1	mg/Kg	1		9056A	Soluble
Boron	5.6	E4	9.9	0.67	mg/Kg	1		6010C	Total/NA
Chromium	0.90	E4	2.0	0.65	mg/Kg	1		6010C	Total/NA
Cobalt	0.46	E4	2.0	0.093	mg/Kg	1		6010C	Total/NA
Iron	1100	M3	9.9	6.4	mg/Kg	1		6010C	Total/NA

Client Sample ID: BAP-BOR-111919-32

Lab Sample ID: 550-133801-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	1300		20	2.1	mg/Kg	1		9056A	Soluble
Sulfate	67		2.0	0.43	mg/L	1		9056A	SPLP West
Boron	8.4	E4	9.8	0.66	mg/Kg	1		6010C	Total/NA
Chromium	1.3	E4	2.0	0.64	mg/Kg	1		6010C	Total/NA
Cobalt	0.60	E4	2.0	0.092	mg/Kg	1		6010C	Total/NA
Iron	1200		9.8	6.4	mg/Kg	1		6010C	Total/NA

Client Sample ID: MW70M-MOQ-112119-77

Lab Sample ID: 550-133801-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	210		20	2.1	mg/Kg	1		9056A	Soluble
Sulfate	15		2.0	0.43	mg/L	1		9056A	SPLP West
Boron	5.8	E4	9.9	0.67	mg/Kg	1		6010C	Total/NA
Chromium	14		2.0	0.65	mg/Kg	1		6010C	Total/NA
Cobalt	6.6		2.0	0.093	mg/Kg	1		6010C	Total/NA
Iron	11000		9.9	6.5	mg/Kg	1		6010C	Total/NA
Lithium	26		25	2.0	mg/Kg	1		6010C	Total/NA
Chromium	0.0095	E4	0.50	0.0055	mg/L	1		6010C	SPLP West
Iron	9.6		1.0	0.11	mg/L	1		6010C	SPLP West

Client Sample ID: BAP-BOR2-111919-60

Lab Sample ID: 550-133801-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	300		20	2.1	mg/Kg	1		9056A	Soluble
Arsenic	1.7	E4	2.9	1.5	mg/Kg	1		6010C	Total/NA
Boron	5.6	E4	9.8	0.66	mg/Kg	1		6010C	Total/NA
Chromium	4.8		2.0	0.64	mg/Kg	1		6010C	Total/NA
Cobalt	2.4		2.0	0.092	mg/Kg	1		6010C	Total/NA
Iron	7600		9.8	6.4	mg/Kg	1		6010C	Total/NA
Lithium	6.7	E4	24	2.0	mg/Kg	1		6010C	Total/NA

Client Sample ID: MW69A-AL-111819-24

Lab Sample ID: 550-133801-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	1500	H1 H4	20	2.1	mg/Kg	1		9056A	Soluble
Sulfate	110	D2	100	21	mg/L	50		9056A	SPLP West
Boron	6.9	E4	9.8	0.66	mg/Kg	1		6010C	Total/NA
Chromium	5.4		2.0	0.64	mg/Kg	1		6010C	Total/NA
Cobalt	3.3		2.0	0.092	mg/Kg	1		6010C	Total/NA
Iron	9600		9.8	6.4	mg/Kg	1		6010C	Total/NA
Lithium	7.4	E4	24	2.0	mg/Kg	1		6010C	Total/NA
Iron	0.32	E4	1.0	0.11	mg/L	1		6010C	SPLP West

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Chollac Plant

Job ID: 550-133801-1

Client Sample ID: MW69A-AL-111819-44

Lab Sample ID: 550-133801-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	93	H1 H4	20	2.1	mg/Kg	1		9056A	Soluble
Sulfate	9.6		2.0	0.43	mg/L	1		9056A	SPLP West
Boron	5.8	E4	9.9	0.67	mg/Kg	1		6010C	Total/NA
Chromium	8.8		2.0	0.65	mg/Kg	1		6010C	Total/NA
Cobalt	5.5		2.0	0.093	mg/Kg	1		6010C	Total/NA
Iron	13000		9.9	6.5	mg/Kg	1		6010C	Total/NA
Lithium	12	E4	25	2.0	mg/Kg	1		6010C	Total/NA
Iron	9.7		1.0	0.11	mg/L	1		6010C	SPLP West

Client Sample ID: BAP-BOR2-111919-55

Lab Sample ID: 550-133801-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	3100	D2	200	21	mg/Kg	10		9056A	Soluble
Boron	19		10	0.67	mg/Kg	1		6010C	Total/NA
Chromium	5.3		2.0	0.66	mg/Kg	1		6010C	Total/NA
Cobalt	1.8	E4	2.0	0.094	mg/Kg	1		6010C	Total/NA
Iron	4000		10	6.5	mg/Kg	1		6010C	Total/NA
Lithium	3.1	E4	25	2.0	mg/Kg	1		6010C	Total/NA

Client Sample ID: MW70M-MOQ-112019-39

Lab Sample ID: 550-133801-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	3200	D2	200	21	mg/Kg	10		9056A	Soluble
Sulfate	570	D2	40	8.5	mg/L	20		9056A	SPLP West
Boron	7.4	E4	9.7	0.65	mg/Kg	1		6010C	Total/NA
Chromium	7.3		1.9	0.64	mg/Kg	1		6010C	Total/NA
Cobalt	4.7		1.9	0.091	mg/Kg	1		6010C	Total/NA
Iron	10000		9.7	6.3	mg/Kg	1		6010C	Total/NA
Lithium	10	E4	24	1.9	mg/Kg	1		6010C	Total/NA
Arsenic	0.028	E4	0.50	0.028	mg/L	1		6010C	SPLP West
Iron	0.20	E4	1.0	0.11	mg/L	1		6010C	SPLP West

Client Sample ID: DUP-02

Lab Sample ID: 550-133801-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	2000		20	2.1	mg/Kg	1		9056A	Soluble
Sulfate	920	D2	100	21	mg/L	50		9056A	SPLP West
Boron	7.0	E4	10	0.67	mg/Kg	1		6010C	Total/NA
Chromium	6.8		2.0	0.65	mg/Kg	1		6010C	Total/NA
Cobalt	4.7		2.0	0.094	mg/Kg	1		6010C	Total/NA
Iron	9900		10	6.5	mg/Kg	1		6010C	Total/NA
Lithium	9.5	E4	25	2.0	mg/Kg	1		6010C	Total/NA
Iron	0.22	E4	1.0	0.11	mg/L	1		6010C	SPLP West

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Chollac Plant

Job ID: 550-133801-1

Client Sample ID: BAP-BOR-111919-10

Lab Sample ID: 550-133801-1

Date Collected: 11/19/19 09:33

Matrix: Solid

Date Received: 11/22/19 14:53

Method: 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1300	M3	20	2.1	mg/Kg	-		12/18/19 06:48	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	3.0	1.5	mg/Kg	-	12/03/19 16:38	12/18/19 21:24	1
Boron	5.6	E4	9.9	0.67	mg/Kg	-	12/03/19 16:38	12/05/19 04:48	1
Chromium	0.90	E4	2.0	0.65	mg/Kg	-	12/03/19 16:38	12/18/19 21:24	1
Cobalt	0.46	E4	2.0	0.093	mg/Kg	-	12/03/19 16:38	12/18/19 21:24	1
Iron	1100	M3	9.9	6.4	mg/Kg	-	12/03/19 16:38	01/09/20 15:31	1
Lithium	ND	E8	25	2.0	mg/Kg	-	12/03/19 16:38	12/18/19 21:24	1

Client Sample ID: BAP-BOR-111919-32

Lab Sample ID: 550-133801-2

Date Collected: 11/19/19 09:51

Matrix: Solid

Date Received: 11/22/19 14:53

Method: 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1300		20	2.1	mg/Kg	-		12/18/19 07:15	1

Method: 9056A - Anions, Ion Chromatography - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	67		2.0	0.43	mg/L	-		12/05/19 11:41	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	2.9	1.5	mg/Kg	-	12/03/19 16:38	12/18/19 21:26	1
Boron	8.4	E4	9.8	0.66	mg/Kg	-	12/03/19 16:38	12/05/19 04:50	1
Chromium	1.3	E4	2.0	0.64	mg/Kg	-	12/03/19 16:38	12/18/19 21:26	1
Cobalt	0.60	E4	2.0	0.092	mg/Kg	-	12/03/19 16:38	12/18/19 21:26	1
Iron	1200		9.8	6.4	mg/Kg	-	12/03/19 16:38	01/09/20 15:34	1
Lithium	ND	E8	24	2.0	mg/Kg	-	12/03/19 16:38	12/18/19 21:26	1

Method: 6010C - Metals (ICP) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	0.50	0.028	mg/L	-	12/04/19 10:49	01/07/20 16:44	1
Boron	ND	E8	1.0	1.0	mg/L	-	12/04/19 10:49	01/07/20 16:44	1
Chromium	ND	E8	0.50	0.0055	mg/L	-	12/04/19 10:49	01/07/20 16:44	1
Cobalt	ND	E8	0.20	0.0075	mg/L	-	12/04/19 10:49	01/07/20 16:44	1
Iron	ND	E8	1.0	0.11	mg/L	-	12/04/19 10:49	01/09/20 12:36	1
Lithium	ND	E8	4.0	4.0	mg/L	-	12/04/19 10:49	01/07/20 16:44	1

Client Sample ID: MW70M-MOQ-112119-77

Lab Sample ID: 550-133801-3

Date Collected: 11/21/19 15:22

Matrix: Solid

Date Received: 11/22/19 14:53

Method: 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	210		20	2.1	mg/Kg	-		12/18/19 07:42	1

Method: 9056A - Anions, Ion Chromatography - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	15		2.0	0.43	mg/L	-		12/05/19 12:18	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Chollac Plant

Job ID: 550-133801-1

Client Sample ID: MW70M-MOQ-112119-77

Lab Sample ID: 550-133801-3

Date Collected: 11/21/19 15:22

Matrix: Solid

Date Received: 11/22/19 14:53

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	3.0	1.5	mg/Kg	-	12/03/19 16:38	12/18/19 21:29	1
Boron	5.8	E4	9.9	0.67	mg/Kg	-	12/03/19 16:38	12/05/19 04:53	1
Chromium	14		2.0	0.65	mg/Kg	-	12/03/19 16:38	12/18/19 21:29	1
Cobalt	6.6		2.0	0.093	mg/Kg	-	12/03/19 16:38	12/18/19 21:29	1
Iron	11000		9.9	6.5	mg/Kg	-	12/03/19 16:38	01/09/20 15:37	1
Lithium	26		25	2.0	mg/Kg	-	12/03/19 16:38	12/18/19 21:29	1

Method: 6010C - Metals (ICP) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	0.50	0.028	mg/L	-	12/04/19 10:49	01/07/20 16:46	1
Boron	ND	E8	1.0	1.0	mg/L	-	12/04/19 10:49	01/07/20 16:46	1
Chromium	0.0095	E4	0.50	0.0055	mg/L	-	12/04/19 10:49	01/07/20 16:46	1
Cobalt	ND	E8	0.20	0.0075	mg/L	-	12/04/19 10:49	01/07/20 16:46	1
Iron	9.6		1.0	0.11	mg/L	-	12/04/19 10:49	01/09/20 12:38	1
Lithium	ND	E8	4.0	4.0	mg/L	-	12/04/19 10:49	01/07/20 16:46	1

Client Sample ID: BAP-BOR2-111919-60

Lab Sample ID: 550-133801-4

Date Collected: 11/19/19 14:15

Matrix: Solid

Date Received: 11/22/19 14:53

Method: 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	300		20	2.1	mg/Kg	-		12/18/19 08:10	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.7	E4	2.9	1.5	mg/Kg	-	12/03/19 16:38	12/18/19 21:32	1
Boron	5.6	E4	9.8	0.66	mg/Kg	-	12/03/19 16:38	12/05/19 04:56	1
Chromium	4.8		2.0	0.64	mg/Kg	-	12/03/19 16:38	12/18/19 21:32	1
Cobalt	2.4		2.0	0.092	mg/Kg	-	12/03/19 16:38	12/18/19 21:32	1
Iron	7600		9.8	6.4	mg/Kg	-	12/03/19 16:38	01/09/20 15:39	1
Lithium	6.7	E4	24	2.0	mg/Kg	-	12/03/19 16:38	12/18/19 21:32	1

Client Sample ID: MW69A-AL-111819-24

Lab Sample ID: 550-133801-5

Date Collected: 11/18/19 11:32

Matrix: Solid

Date Received: 11/22/19 14:53

Method: 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	1500	H1 H4	20	2.1	mg/Kg	-		12/18/19 09:32	1

Method: 9056A - Anions, Ion Chromatography - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	110	D2	100	21	mg/L	-		12/05/19 12:55	50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	2.9	1.5	mg/Kg	-	12/03/19 16:38	12/18/19 21:35	1
Boron	6.9	E4	9.8	0.66	mg/Kg	-	12/03/19 16:38	12/05/19 04:59	1
Chromium	5.4		2.0	0.64	mg/Kg	-	12/03/19 16:38	12/18/19 21:35	1
Cobalt	3.3		2.0	0.092	mg/Kg	-	12/03/19 16:38	12/18/19 21:35	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Chollac Plant

Job ID: 550-133801-1

Client Sample ID: MW69A-AL-111819-24

Lab Sample ID: 550-133801-5

Date Collected: 11/18/19 11:32

Matrix: Solid

Date Received: 11/22/19 14:53

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	9600		9.8	6.4	mg/Kg		12/03/19 16:38	01/09/20 15:43	1
Lithium	7.4	E4	24	2.0	mg/Kg		12/03/19 16:38	12/18/19 21:35	1

Method: 6010C - Metals (ICP) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	0.50	0.028	mg/L		12/05/19 10:45	12/17/19 00:40	1
Boron	ND	E8	1.0	1.0	mg/L		12/04/19 10:49	01/07/20 16:49	1
Chromium	ND	E8	0.50	0.0055	mg/L		12/05/19 10:45	12/17/19 00:40	1
Cobalt	ND	E8	0.20	0.0075	mg/L		12/05/19 10:45	12/16/19 17:24	1
Iron	0.32	E4	1.0	0.11	mg/L		12/04/19 10:49	01/09/20 12:41	1
Lithium	ND	E8	4.0	4.0	mg/L		12/05/19 10:45	12/17/19 00:40	1

Client Sample ID: MW69A-AL-111819-44

Lab Sample ID: 550-133801-6

Date Collected: 11/18/19 11:24

Matrix: Solid

Date Received: 11/22/19 14:53

Method: 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	93	H1 H4	20	2.1	mg/Kg			12/18/19 09:59	1

Method: 9056A - Anions, Ion Chromatography - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	9.6		2.0	0.43	mg/L			12/05/19 08:55	1

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	3.0	1.5	mg/Kg		12/03/19 16:38	12/18/19 21:38	1
Boron	5.8	E4	9.9	0.67	mg/Kg		12/03/19 16:38	12/05/19 05:02	1
Chromium	8.8		2.0	0.65	mg/Kg		12/03/19 16:38	12/18/19 21:38	1
Cobalt	5.5		2.0	0.093	mg/Kg		12/03/19 16:38	12/18/19 21:38	1
Iron	13000		9.9	6.5	mg/Kg		12/03/19 16:38	01/09/20 15:46	1
Lithium	12	E4	25	2.0	mg/Kg		12/03/19 16:38	12/18/19 21:38	1

Method: 6010C - Metals (ICP) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	0.50	0.028	mg/L		12/05/19 10:45	12/17/19 00:42	1
Boron	ND	E8	1.0	1.0	mg/L		12/04/19 10:49	01/07/20 16:52	1
Chromium	ND	E8	0.50	0.0055	mg/L		12/05/19 10:45	12/17/19 00:42	1
Cobalt	ND	E8	0.20	0.0075	mg/L		12/05/19 10:45	12/16/19 17:27	1
Iron	9.7		1.0	0.11	mg/L		12/04/19 10:49	01/09/20 12:44	1
Lithium	ND	E8	4.0	4.0	mg/L		12/05/19 10:45	12/17/19 00:42	1

Client Sample ID: BAP-BOR2-111919-55

Lab Sample ID: 550-133801-7

Date Collected: 11/19/19 13:03

Matrix: Solid

Date Received: 11/22/19 14:53

Method: 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	3100	D2	200	21	mg/Kg			12/19/19 06:03	10

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Chollac Plant

Job ID: 550-133801-1

Client Sample ID: BAP-BOR2-111919-55

Lab Sample ID: 550-133801-7

Date Collected: 11/19/19 13:03

Matrix: Solid

Date Received: 11/22/19 14:53

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	3.0	1.5	mg/Kg	-	12/03/19 16:38	12/18/19 21:41	1
Boron	19		10	0.67	mg/Kg	-	12/03/19 16:38	12/05/19 05:05	1
Chromium	5.3		2.0	0.66	mg/Kg	-	12/03/19 16:38	12/18/19 21:41	1
Cobalt	1.8	E4	2.0	0.094	mg/Kg	-	12/03/19 16:38	12/18/19 21:41	1
Iron	4000		10	6.5	mg/Kg	-	12/03/19 16:38	01/09/20 15:49	1
Lithium	3.1	E4	25	2.0	mg/Kg	-	12/03/19 16:38	12/18/19 21:41	1

Method: 6010C - Metals (ICP) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	0.50	0.028	mg/L	-	12/05/19 10:45	12/17/19 00:45	1
Boron	ND	E8	1.0	1.0	mg/L	-	12/04/19 10:49	01/07/20 16:54	1
Chromium	ND	E8	0.50	0.0055	mg/L	-	12/05/19 10:45	12/17/19 00:45	1
Cobalt	ND	E8	0.20	0.0075	mg/L	-	12/05/19 10:45	12/16/19 17:30	1
Iron	ND	E8	1.0	0.11	mg/L	-	12/04/19 10:49	01/09/20 12:47	1
Lithium	ND	E8	4.0	4.0	mg/L	-	12/05/19 10:45	12/17/19 00:45	1

Client Sample ID: MW70M-MOQ-112019-39

Lab Sample ID: 550-133801-8

Date Collected: 11/20/19 15:55

Matrix: Solid

Date Received: 11/22/19 14:53

Method: 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	3200	D2	200	21	mg/Kg	-		12/19/19 06:31	10

Method: 9056A - Anions, Ion Chromatography - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	570	D2	40	8.5	mg/L	-		12/05/19 10:27	20

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	2.9	1.5	mg/Kg	-	12/03/19 16:38	12/18/19 21:44	1
Boron	7.4	E4	9.7	0.65	mg/Kg	-	12/03/19 16:38	12/05/19 05:08	1
Chromium	7.3		1.9	0.64	mg/Kg	-	12/03/19 16:38	12/18/19 21:44	1
Cobalt	4.7		1.9	0.091	mg/Kg	-	12/03/19 16:38	12/18/19 21:44	1
Iron	10000		9.7	6.3	mg/Kg	-	12/03/19 16:38	01/09/20 15:51	1
Lithium	10	E4	24	1.9	mg/Kg	-	12/03/19 16:38	12/18/19 21:44	1

Method: 6010C - Metals (ICP) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.028	E4	0.50	0.028	mg/L	-	12/05/19 10:45	12/17/19 00:48	1
Boron	ND	E8	1.0	1.0	mg/L	-	12/04/19 10:49	01/07/20 16:57	1
Chromium	ND	E8	0.50	0.0055	mg/L	-	12/05/19 10:45	12/17/19 00:48	1
Cobalt	ND	E8	0.20	0.0075	mg/L	-	12/05/19 10:45	12/16/19 17:33	1
Iron	0.20	E4	1.0	0.11	mg/L	-	12/04/19 10:49	01/09/20 12:49	1
Lithium	ND	E8	4.0	4.0	mg/L	-	12/05/19 10:45	12/17/19 00:48	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Chollac Plant

Job ID: 550-133801-1

Client Sample ID: DUP-02

Lab Sample ID: 550-133801-9

Date Collected: 11/20/19 16:40

Matrix: Solid

Date Received: 11/22/19 14:53

Method: 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2000		20	2.1	mg/Kg	-		12/18/19 11:22	1

Method: 9056A - Anions, Ion Chromatography - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	920	D2	100	21	mg/L	-		12/05/19 11:04	50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	3.0	1.5	mg/Kg	-	12/03/19 16:38	12/18/19 21:47	1
Boron	7.0	E4	10	0.67	mg/Kg	-	12/03/19 16:38	12/05/19 05:11	1
Chromium	6.8		2.0	0.65	mg/Kg	-	12/03/19 16:38	12/18/19 21:47	1
Cobalt	4.7		2.0	0.094	mg/Kg	-	12/03/19 16:38	12/18/19 21:47	1
Iron	9900		10	6.5	mg/Kg	-	12/03/19 16:38	01/09/20 15:54	1
Lithium	9.5	E4	25	2.0	mg/Kg	-	12/03/19 16:38	12/18/19 21:47	1

Method: 6010C - Metals (ICP) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	0.50	0.028	mg/L	-	12/05/19 10:45	12/17/19 00:51	1
Boron	ND	E8	1.0	1.0	mg/L	-	12/04/19 10:49	01/07/20 17:00	1
Chromium	ND	E8	0.50	0.0055	mg/L	-	12/05/19 10:45	12/17/19 00:51	1
Cobalt	ND	E8	0.20	0.0075	mg/L	-	12/05/19 10:45	12/16/19 17:36	1
Iron	0.22	E4	1.0	0.11	mg/L	-	12/04/19 10:49	01/09/20 12:52	1
Lithium	ND	E8	4.0	4.0	mg/L	-	12/05/19 10:45	12/17/19 00:51	1

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Chollac Plant

Job ID: 550-133801-1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: LCS 550-197316/31

Matrix: Solid

Analysis Batch: 197316

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	20.7		mg/L		103	80 - 120

Lab Sample ID: LCSD 550-197316/32

Matrix: Solid

Analysis Batch: 197316

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	20.0	20.7		mg/L		103	80 - 120	0	20

Lab Sample ID: MB 550-198253/1-A

Matrix: Solid

Analysis Batch: 198335

Client Sample ID: Method Blank

Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND	E8	20	2.1	mg/Kg			12/18/19 04:03	1

Lab Sample ID: LCS 550-198253/2-A

Matrix: Solid

Analysis Batch: 198335

Client Sample ID: Lab Control Sample

Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	198	198		mg/Kg		100	80 - 120

Lab Sample ID: LCSD 550-198253/3-A

Matrix: Solid

Analysis Batch: 198335

Client Sample ID: Lab Control Sample Dup

Prep Type: Soluble

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	199	198		mg/Kg		99	80 - 120	0	20

Lab Sample ID: 550-133801-1 MS

Matrix: Solid

Analysis Batch: 198335

Client Sample ID: BAP-BOR-111919-10

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	1300	M3	198	1530	M3	mg/Kg		110	80 - 120

Lab Sample ID: 550-133801-1 MSD

Matrix: Solid

Analysis Batch: 198335

Client Sample ID: BAP-BOR-111919-10

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	1300	M3	199	1570	M3	mg/Kg		128	80 - 120	2	20

Lab Sample ID: 550-133801-1 DU

Matrix: Solid

Analysis Batch: 198335

Client Sample ID: BAP-BOR-111919-10

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Sulfate	1300	M3	1180		mg/Kg		10	15

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Chollac Plant

Job ID: 550-133801-1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: LB 550-197111/1-A

Matrix: Solid

Analysis Batch: 197316

Client Sample ID: Method Blank

Prep Type: SPLP West

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND	E8	2.0	0.43	mg/L			12/05/19 11:23	1

Lab Sample ID: 550-133801-2 DU

Matrix: Solid

Analysis Batch: 197316

Client Sample ID: BAP-BOR-111919-32

Prep Type: SPLP West

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	Prepared	RPD	RPD Limit
Sulfate	67		67.1		mg/L			0	15

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 550-197128/1-A

Matrix: Solid

Analysis Batch: 197304

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 197128

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND	E8	10	0.67	mg/Kg		12/03/19 16:38	12/05/19 04:31	1

Lab Sample ID: MB 550-197128/1-A

Matrix: Solid

Analysis Batch: 198451

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 197128

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	3.0	1.5	mg/Kg		12/03/19 16:38	12/18/19 21:07	1
Boron	ND	E8	10	0.67	mg/Kg		12/03/19 16:38	12/18/19 21:07	1
Chromium	ND	E8	2.0	0.66	mg/Kg		12/03/19 16:38	12/18/19 21:07	1
Cobalt	ND	E8	2.0	0.094	mg/Kg		12/03/19 16:38	12/18/19 21:07	1
Lithium	ND	E8	25	2.0	mg/Kg		12/03/19 16:38	12/18/19 21:07	1

Lab Sample ID: MB 550-197128/1-A

Matrix: Solid

Analysis Batch: 199870

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 197128

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND	E8	10	6.5	mg/Kg		12/03/19 16:38	01/09/20 15:14	1

Lab Sample ID: LCS 550-197128/2-A

Matrix: Solid

Analysis Batch: 197304

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 197128

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	49.8	48.2		mg/Kg		97	80 - 120

Lab Sample ID: LCS 550-197128/2-A

Matrix: Solid

Analysis Batch: 198451

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 197128

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	49.8	45.9		mg/Kg		92	80 - 110
Boron	49.8	45.9		mg/Kg		92	80 - 120

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Chollac Plant

Job ID: 550-133801-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 550-197128/2-A

Matrix: Solid

Analysis Batch: 198451

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 197128

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	49.8	49.0		mg/Kg		98	86 - 110
Cobalt	49.8	47.9		mg/Kg		96	80 - 120
Lithium	49.8	51.1		mg/Kg		103	102 - 112

Lab Sample ID: LCS 550-197128/2-A

Matrix: Solid

Analysis Batch: 200131

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 197128

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	49.8	44.0		mg/Kg		88	83 - 117

Lab Sample ID: LCSD 550-197128/3-A

Matrix: Solid

Analysis Batch: 197304

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 197128

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	48.6	46.7		mg/Kg		96	80 - 120	3	20

Lab Sample ID: LCSD 550-197128/3-A

Matrix: Solid

Analysis Batch: 198451

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 197128

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	48.6	43.5		mg/Kg		90	80 - 110	5	20
Boron	48.6	44.0		mg/Kg		91	80 - 120	4	20
Chromium	48.6	47.2		mg/Kg		97	86 - 110	4	20
Cobalt	48.6	46.0		mg/Kg		95	80 - 120	4	20
Lithium	48.6	49.5		mg/Kg		102	102 - 112	3	20

Lab Sample ID: LCSD 550-197128/3-A

Matrix: Solid

Analysis Batch: 199870

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 197128

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	48.6	54.3		mg/Kg		112	83 - 117	NaN	20

Lab Sample ID: 550-133801-1 MS

Matrix: Solid

Analysis Batch: 197304

Client Sample ID: BAP-BOR-111919-10

Prep Type: Total/NA

Prep Batch: 197128

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	5.6	E4	48.6	54.5		mg/Kg		101	75 - 125

Lab Sample ID: 550-133801-1 MS

Matrix: Solid

Analysis Batch: 198451

Client Sample ID: BAP-BOR-111919-10

Prep Type: Total/NA

Prep Batch: 197128

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	ND	E8	48.6	43.4		mg/Kg		89	75 - 125
Boron	6.0	E4	48.6	52.7		mg/Kg		96	75 - 125

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Chollac Plant

Job ID: 550-133801-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 550-133801-1 MS

Matrix: Solid

Analysis Batch: 198451

Client Sample ID: BAP-BOR-111919-10

Prep Type: Total/NA

Prep Batch: 197128

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chromium	0.90	E4	48.6	48.5		mg/Kg		98	75 - 125
Cobalt	0.46	E4	48.6	46.7		mg/Kg		95	75 - 125
Lithium	ND	E8	48.6	49.4		mg/Kg		102	75 - 125

Lab Sample ID: 550-133801-1 MS

Matrix: Solid

Analysis Batch: 199870

Client Sample ID: BAP-BOR-111919-10

Prep Type: Total/NA

Prep Batch: 197128

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	1100	M3	48.6	1830	M3	mg/Kg		1451	75 - 125

Lab Sample ID: 550-133801-1 MSD

Matrix: Solid

Analysis Batch: 197304

Client Sample ID: BAP-BOR-111919-10

Prep Type: Total/NA

Prep Batch: 197128

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Boron	5.6	E4	49.9	56.8		mg/Kg		103	75 - 125	4	20

Lab Sample ID: 550-133801-1 MSD

Matrix: Solid

Analysis Batch: 198451

Client Sample ID: BAP-BOR-111919-10

Prep Type: Total/NA

Prep Batch: 197128

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Arsenic	ND	E8	49.9	46.2		mg/Kg		93	75 - 125	6	20
Boron	6.0	E4	49.9	55.4		mg/Kg		99	75 - 125	5	20
Chromium	0.90	E4	49.9	51.3		mg/Kg		101	75 - 125	5	20
Cobalt	0.46	E4	49.9	49.9		mg/Kg		99	75 - 125	6	20
Lithium	ND	E8	49.9	52.6		mg/Kg		106	75 - 125	6	20

Lab Sample ID: 550-133801-1 MSD

Matrix: Solid

Analysis Batch: 199870

Client Sample ID: BAP-BOR-111919-10

Prep Type: Total/NA

Prep Batch: 197128

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Iron	1100	M3	49.9	1530	M3	mg/Kg		809	75 - 125	18	20

Lab Sample ID: MB 550-197194/1-A

Matrix: Solid

Analysis Batch: 199626

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 197194

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	0.50	0.028	mg/L		12/04/19 10:49	01/07/20 16:24	1
Boron	ND	E8	1.0	1.0	mg/L		12/04/19 10:49	01/07/20 16:24	1
Chromium	ND	E8	0.50	0.0055	mg/L		12/04/19 10:49	01/07/20 16:24	1
Cobalt	ND	E8	0.20	0.0075	mg/L		12/04/19 10:49	01/07/20 16:24	1
Lithium	ND	E8	4.0	4.0	mg/L		12/04/19 10:49	01/07/20 16:24	1

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Chollac Plant

Job ID: 550-133801-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 550-197194/1-A

Matrix: Solid

Analysis Batch: 199812

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 197194

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND	E8	1.0	0.11	mg/L		12/04/19 10:49	01/09/20 12:16	1

Lab Sample ID: LCS 550-197194/2-A

Matrix: Solid

Analysis Batch: 199626

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 197194

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	5.00	5.23		mg/L		105	89 - 111
Boron	5.00	5.12		mg/L		102	
Chromium	5.00	5.25		mg/L		105	86 - 112
Cobalt	5.00	5.32		mg/L		106	88 - 111
Lithium	5.00	5.26		mg/L		105	

Lab Sample ID: LCS 550-197194/2-A

Matrix: Solid

Analysis Batch: 199812

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 197194

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	5.00	4.66		mg/L		93	87 - 117

Lab Sample ID: LCSD 550-197194/3-A

Matrix: Solid

Analysis Batch: 199626

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 197194

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	5.00	5.35		mg/L		107	89 - 111	2	20
Boron	5.00	5.17		mg/L		103		1	20
Chromium	5.00	5.31		mg/L		106	86 - 112	1	20
Cobalt	5.00	5.37		mg/L		107	88 - 111	1	20
Lithium	5.00	5.26		mg/L		105		0	20

Lab Sample ID: LCSD 550-197194/3-A

Matrix: Solid

Analysis Batch: 199812

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 197194

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	5.00	5.39		mg/L		108	87 - 117	15	20

Lab Sample ID: MB 550-197279/1-A

Matrix: Solid

Analysis Batch: 198136

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 197279

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	ND	E8	0.20	0.0075	mg/L		12/05/19 10:45	12/16/19 16:59	1

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Chollac Plant

Job ID: 550-133801-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 550-197279/1-A

Matrix: Solid

Analysis Batch: 198169

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 197279

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	0.50	0.028	mg/L		12/05/19 10:45	12/17/19 00:14	1
Boron	ND	E8	1.0	1.0	mg/L		12/05/19 10:45	12/17/19 00:14	1
Chromium	ND	E8	0.50	0.0055	mg/L		12/05/19 10:45	12/17/19 00:14	1
Cobalt	ND	E8	0.20	0.0075	mg/L		12/05/19 10:45	12/17/19 00:14	1
Lithium	ND	E8	4.0	4.0	mg/L		12/05/19 10:45	12/17/19 00:14	1

Lab Sample ID: LCS 550-197279/2-A

Matrix: Solid

Analysis Batch: 198136

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 197279

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cobalt	5.00	4.73		mg/L		95	88 - 111

Lab Sample ID: LCS 550-197279/2-A

Matrix: Solid

Analysis Batch: 198169

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 197279

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	5.00	4.83		mg/L		97	89 - 111
Boron	5.00	4.81		mg/L		96	
Chromium	5.00	4.80		mg/L		96	86 - 112
Cobalt	5.00	4.91		mg/L		98	88 - 111
Lithium	5.00	4.92		mg/L		98	

Lab Sample ID: LCSD 550-197279/3-A

Matrix: Solid

Analysis Batch: 198136

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 197279

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Cobalt	5.00	4.69		mg/L		94	88 - 111	1	20

Lab Sample ID: LCSD 550-197279/3-A

Matrix: Solid

Analysis Batch: 198169

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 197279

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Arsenic	5.00	4.87		mg/L		97	89 - 111	1	20
Boron	5.00	4.83		mg/L		97		0	20
Chromium	5.00	4.79		mg/L		96	86 - 112	0	20
Cobalt	5.00	4.92		mg/L		98	88 - 111	0	20
Lithium	5.00	4.90		mg/L		98		0	20

Lab Sample ID: LB 550-197111/1-B

Matrix: Solid

Analysis Batch: 199626

Client Sample ID: Method Blank

Prep Type: SPLP West

Prep Batch: 197194

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	0.50	0.028	mg/L		12/04/19 10:49	01/07/20 16:41	1
Boron	ND	E8	1.0	1.0	mg/L		12/04/19 10:49	01/07/20 16:41	1
Chromium	ND	E8	0.50	0.0055	mg/L		12/04/19 10:49	01/07/20 16:41	1

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Chollac Plant

Job ID: 550-133801-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LB 550-197111/1-B
Matrix: Solid
Analysis Batch: 199626

Client Sample ID: Method Blank
Prep Type: SPLP West
Prep Batch: 197194

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	ND	E8	0.20	0.0075	mg/L		12/04/19 10:49	01/07/20 16:41	1
Lithium	ND	E8	4.0	4.0	mg/L		12/04/19 10:49	01/07/20 16:41	1

Lab Sample ID: LB 550-197111/1-B
Matrix: Solid
Analysis Batch: 199812

Client Sample ID: Method Blank
Prep Type: SPLP West
Prep Batch: 197194

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.351	E4	1.0	0.11	mg/L		12/04/19 10:49	01/09/20 12:33	1

Lab Sample ID: 550-133801-2 MS
Matrix: Solid
Analysis Batch: 199626

Client Sample ID: BAP-BOR-111919-32
Prep Type: SPLP West
Prep Batch: 197194

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	ND	E8	5.00	5.42		mg/L		108	75 - 125
Boron	ND	E8	5.00	5.32		mg/L		106	75 - 125
Chromium	ND	E8	5.00	5.32		mg/L		106	75 - 125
Cobalt	ND	E8	5.00	5.39		mg/L		108	75 - 125
Lithium	ND	E8	5.00	5.21		mg/L		104	75 - 125

Lab Sample ID: 550-133801-2 MS
Matrix: Solid
Analysis Batch: 199812

Client Sample ID: BAP-BOR-111919-32
Prep Type: SPLP West
Prep Batch: 197194

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	ND	E8	5.00	5.38		mg/L		108	75 - 125

Lab Sample ID: 550-133801-2 MSD
Matrix: Solid
Analysis Batch: 199626

Client Sample ID: BAP-BOR-111919-32
Prep Type: SPLP West
Prep Batch: 197194

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND	E8	5.00	5.39		mg/L		108	75 - 125	1	20
Boron	ND	E8	5.00	5.29		mg/L		106	75 - 125	0	20
Chromium	ND	E8	5.00	5.31		mg/L		106	75 - 125	0	20
Cobalt	ND	E8	5.00	5.36		mg/L		107	75 - 125	1	20
Lithium	ND	E8	5.00	5.15		mg/L		103	75 - 125	1	20

Lab Sample ID: 550-133801-2 MSD
Matrix: Solid
Analysis Batch: 199812

Client Sample ID: BAP-BOR-111919-32
Prep Type: SPLP West
Prep Batch: 197194

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	ND	E8	5.00	5.54		mg/L		111	75 - 125	3	20

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QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Chollac Plant

Job ID: 550-133801-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LB 550-197199/1-B
Matrix: Solid
Analysis Batch: 198136

Client Sample ID: Method Blank
Prep Type: SPLP West
Prep Batch: 197279

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	ND	E8	0.20	0.0075	mg/L	-	12/05/19 10:45	12/16/19 17:16	1

Lab Sample ID: LB 550-197199/1-B
Matrix: Solid
Analysis Batch: 198169

Client Sample ID: Method Blank
Prep Type: SPLP West
Prep Batch: 197279

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	0.50	0.028	mg/L	-	12/05/19 10:45	12/17/19 00:31	1
Boron	3.33	B1	1.0	1.0	mg/L	-	12/05/19 10:45	12/17/19 00:31	1
Chromium	ND	E8	0.50	0.0055	mg/L	-	12/05/19 10:45	12/17/19 00:31	1
Cobalt	ND	E8	0.20	0.0075	mg/L	-	12/05/19 10:45	12/17/19 00:31	1
Lithium	ND	E8	4.0	4.0	mg/L	-	12/05/19 10:45	12/17/19 00:31	1

Lab Sample ID: 550-133801-C-2-B MS
Matrix: Solid
Analysis Batch: 198136

Client Sample ID: 550-133801-C-2-B MS
Prep Type: SPLP West
Prep Batch: 197279

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Cobalt	ND	E8	5.00	4.49		mg/L	-	90	75 - 125

Lab Sample ID: 550-133801-C-2-B MS
Matrix: Solid
Analysis Batch: 198169

Client Sample ID: 550-133801-C-2-B MS
Prep Type: SPLP West
Prep Batch: 197279

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Arsenic	0.032	E4	5.00	5.10		mg/L	-	101	75 - 125
Chromium	ND	E8	5.00	4.81		mg/L	-	96	75 - 125
Cobalt	ND	E8	5.00	4.94		mg/L	-	99	75 - 125
Lithium	ND	E8	5.00	5.14		mg/L	-	103	75 - 125

Lab Sample ID: 550-133801-C-2-C MSD
Matrix: Solid
Analysis Batch: 198136

Client Sample ID: 550-133801-C-2-C MSD
Prep Type: SPLP West
Prep Batch: 197279

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Cobalt	ND	E8	5.00	4.61		mg/L	-	92	75 - 125	3	20

Lab Sample ID: 550-133801-C-2-C MSD
Matrix: Solid
Analysis Batch: 198169

Client Sample ID: 550-133801-C-2-C MSD
Prep Type: SPLP West
Prep Batch: 197279

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	0.032	E4	5.00	5.13		mg/L	-	102	75 - 125	1	20
Chromium	ND	E8	5.00	4.84		mg/L	-	97	75 - 125	1	20
Cobalt	ND	E8	5.00	4.95		mg/L	-	99	75 - 125	0	20
Lithium	ND	E8	5.00	5.08		mg/L	-	102	75 - 125	1	20

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QC Association Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Chollac Plant

Job ID: 550-133801-1

HPLC/IC

Leach Batch: 197111

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133801-2	BAP-BOR-111919-32	SPLP West	Solid	1312	
550-133801-3	MW70M-MOQ-112119-77	SPLP West	Solid	1312	
550-133801-5	MW69A-AL-111819-24	SPLP West	Solid	1312	
550-133801-6	MW69A-AL-111819-44	SPLP West	Solid	1312	
550-133801-8	MW70M-MOQ-112019-39	SPLP West	Solid	1312	
550-133801-9	DUP-02	SPLP West	Solid	1312	
LB 550-197111/1-A	Method Blank	SPLP West	Solid	1312	
550-133801-2 DU	BAP-BOR-111919-32	SPLP West	Solid	1312	

Analysis Batch: 197316

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133801-2	BAP-BOR-111919-32	SPLP West	Solid	9056A	197111
550-133801-3	MW70M-MOQ-112119-77	SPLP West	Solid	9056A	197111
550-133801-5	MW69A-AL-111819-24	SPLP West	Solid	9056A	197111
550-133801-6	MW69A-AL-111819-44	SPLP West	Solid	9056A	197111
550-133801-8	MW70M-MOQ-112019-39	SPLP West	Solid	9056A	197111
550-133801-9	DUP-02	SPLP West	Solid	9056A	197111
LB 550-197111/1-A	Method Blank	SPLP West	Solid	9056A	197111
LCS 550-197316/31	Lab Control Sample	Total/NA	Solid	9056A	
LCSD 550-197316/32	Lab Control Sample Dup	Total/NA	Solid	9056A	
550-133801-2 DU	BAP-BOR-111919-32	SPLP West	Solid	9056A	197111

Leach Batch: 198253

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133801-1	BAP-BOR-111919-10	Soluble	Solid	DI Leach	
550-133801-2	BAP-BOR-111919-32	Soluble	Solid	DI Leach	
550-133801-3	MW70M-MOQ-112119-77	Soluble	Solid	DI Leach	
550-133801-4	BAP-BOR2-111919-60	Soluble	Solid	DI Leach	
550-133801-5	MW69A-AL-111819-24	Soluble	Solid	DI Leach	
550-133801-6	MW69A-AL-111819-44	Soluble	Solid	DI Leach	
550-133801-7	BAP-BOR2-111919-55	Soluble	Solid	DI Leach	
550-133801-8	MW70M-MOQ-112019-39	Soluble	Solid	DI Leach	
550-133801-9	DUP-02	Soluble	Solid	DI Leach	
MB 550-198253/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 550-198253/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCSD 550-198253/3-A	Lab Control Sample Dup	Soluble	Solid	DI Leach	
550-133801-1 MS	BAP-BOR-111919-10	Soluble	Solid	DI Leach	
550-133801-1 MSD	BAP-BOR-111919-10	Soluble	Solid	DI Leach	
550-133801-1 DU	BAP-BOR-111919-10	Soluble	Solid	DI Leach	

Analysis Batch: 198335

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133801-1	BAP-BOR-111919-10	Soluble	Solid	9056A	198253
550-133801-2	BAP-BOR-111919-32	Soluble	Solid	9056A	198253
550-133801-3	MW70M-MOQ-112119-77	Soluble	Solid	9056A	198253
550-133801-4	BAP-BOR2-111919-60	Soluble	Solid	9056A	198253
550-133801-5	MW69A-AL-111819-24	Soluble	Solid	9056A	198253
550-133801-6	MW69A-AL-111819-44	Soluble	Solid	9056A	198253
550-133801-9	DUP-02	Soluble	Solid	9056A	198253
MB 550-198253/1-A	Method Blank	Soluble	Solid	9056A	198253
LCS 550-198253/2-A	Lab Control Sample	Soluble	Solid	9056A	198253

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Chollac Plant

Job ID: 550-133801-1

HPLC/IC (Continued)

Analysis Batch: 198335 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 550-198253/3-A	Lab Control Sample Dup	Soluble	Solid	9056A	198253
550-133801-1 MS	BAP-BOR-111919-10	Soluble	Solid	9056A	198253
550-133801-1 MSD	BAP-BOR-111919-10	Soluble	Solid	9056A	198253
550-133801-1 DU	BAP-BOR-111919-10	Soluble	Solid	9056A	198253

Analysis Batch: 198481

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133801-7	BAP-BOR2-111919-55	Soluble	Solid	9056A	198253
550-133801-8	MW70M-MOQ-112019-39	Soluble	Solid	9056A	198253

Metals

Leach Batch: 197111

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133801-2	BAP-BOR-111919-32	SPLP West	Solid	1312	
550-133801-3	MW70M-MOQ-112119-77	SPLP West	Solid	1312	
550-133801-5	MW69A-AL-111819-24	SPLP West	Solid	1312	
550-133801-6	MW69A-AL-111819-44	SPLP West	Solid	1312	
550-133801-7	BAP-BOR2-111919-55	SPLP West	Solid	1312	
550-133801-8	MW70M-MOQ-112019-39	SPLP West	Solid	1312	
550-133801-9	DUP-02	SPLP West	Solid	1312	
LB 550-197111/1-B	Method Blank	SPLP West	Solid	1312	
550-133801-2 MS	BAP-BOR-111919-32	SPLP West	Solid	1312	
550-133801-2 MSD	BAP-BOR-111919-32	SPLP West	Solid	1312	

Prep Batch: 197128

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133801-1	BAP-BOR-111919-10	Total/NA	Solid	3050B	
550-133801-2	BAP-BOR-111919-32	Total/NA	Solid	3050B	
550-133801-3	MW70M-MOQ-112119-77	Total/NA	Solid	3050B	
550-133801-4	BAP-BOR2-111919-60	Total/NA	Solid	3050B	
550-133801-5	MW69A-AL-111819-24	Total/NA	Solid	3050B	
550-133801-6	MW69A-AL-111819-44	Total/NA	Solid	3050B	
550-133801-7	BAP-BOR2-111919-55	Total/NA	Solid	3050B	
550-133801-8	MW70M-MOQ-112019-39	Total/NA	Solid	3050B	
550-133801-9	DUP-02	Total/NA	Solid	3050B	
MB 550-197128/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 550-197128/2-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 550-197128/3-A	Lab Control Sample Dup	Total/NA	Solid	3050B	
550-133801-1 MS	BAP-BOR-111919-10	Total/NA	Solid	3050B	
550-133801-1 MSD	BAP-BOR-111919-10	Total/NA	Solid	3050B	

Prep Batch: 197194

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133801-2	BAP-BOR-111919-32	SPLP West	Solid	3010A	197111
550-133801-3	MW70M-MOQ-112119-77	SPLP West	Solid	3010A	197111
550-133801-5	MW69A-AL-111819-24	SPLP West	Solid	3010A	197111
550-133801-6	MW69A-AL-111819-44	SPLP West	Solid	3010A	197111
550-133801-7	BAP-BOR2-111919-55	SPLP West	Solid	3010A	197111
550-133801-8	MW70M-MOQ-112019-39	SPLP West	Solid	3010A	197111
550-133801-9	DUP-02	SPLP West	Solid	3010A	197111

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Chollac Plant

Job ID: 550-133801-1

Metals (Continued)

Prep Batch: 197194 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LB 550-197111/1-B	Method Blank	SPLP West	Solid	3010A	197111
MB 550-197194/1-A	Method Blank	Total/NA	Solid	3010A	
LCS 550-197194/2-A	Lab Control Sample	Total/NA	Solid	3010A	
LCSD 550-197194/3-A	Lab Control Sample Dup	Total/NA	Solid	3010A	
550-133801-2 MS	BAP-BOR-111919-32	SPLP West	Solid	3010A	197111
550-133801-2 MSD	BAP-BOR-111919-32	SPLP West	Solid	3010A	197111

Leach Batch: 197199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133801-5	MW69A-AL-111819-24	SPLP West	Solid	1312	
550-133801-6	MW69A-AL-111819-44	SPLP West	Solid	1312	
550-133801-7	BAP-BOR2-111919-55	SPLP West	Solid	1312	
550-133801-8	MW70M-MOQ-112019-39	SPLP West	Solid	1312	
550-133801-9	DUP-02	SPLP West	Solid	1312	
LB 550-197199/1-B	Method Blank	SPLP West	Solid	1312	
550-133801-C-2-B MS	550-133801-C-2-B MS	SPLP West	Solid	1312	
550-133801-C-2-C MSD	550-133801-C-2-C MSD	SPLP West	Solid	1312	

Prep Batch: 197279

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133801-5	MW69A-AL-111819-24	SPLP West	Solid	3010A	197199
550-133801-6	MW69A-AL-111819-44	SPLP West	Solid	3010A	197199
550-133801-7	BAP-BOR2-111919-55	SPLP West	Solid	3010A	197199
550-133801-8	MW70M-MOQ-112019-39	SPLP West	Solid	3010A	197199
550-133801-9	DUP-02	SPLP West	Solid	3010A	197199
LB 550-197199/1-B	Method Blank	SPLP West	Solid	3010A	197199
MB 550-197279/1-A	Method Blank	Total/NA	Solid	3010A	
LCS 550-197279/2-A	Lab Control Sample	Total/NA	Solid	3010A	
LCSD 550-197279/3-A	Lab Control Sample Dup	Total/NA	Solid	3010A	
550-133801-C-2-B MS	550-133801-C-2-B MS	SPLP West	Solid	3010A	197199
550-133801-C-2-C MSD	550-133801-C-2-C MSD	SPLP West	Solid	3010A	197199

Analysis Batch: 197304

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133801-1	BAP-BOR-111919-10	Total/NA	Solid	6010C	197128
550-133801-2	BAP-BOR-111919-32	Total/NA	Solid	6010C	197128
550-133801-3	MW70M-MOQ-112119-77	Total/NA	Solid	6010C	197128
550-133801-4	BAP-BOR2-111919-60	Total/NA	Solid	6010C	197128
550-133801-5	MW69A-AL-111819-24	Total/NA	Solid	6010C	197128
550-133801-6	MW69A-AL-111819-44	Total/NA	Solid	6010C	197128
550-133801-7	BAP-BOR2-111919-55	Total/NA	Solid	6010C	197128
550-133801-8	MW70M-MOQ-112019-39	Total/NA	Solid	6010C	197128
550-133801-9	DUP-02	Total/NA	Solid	6010C	197128
MB 550-197128/1-A	Method Blank	Total/NA	Solid	6010C	197128
LCS 550-197128/2-A	Lab Control Sample	Total/NA	Solid	6010C	197128
LCSD 550-197128/3-A	Lab Control Sample Dup	Total/NA	Solid	6010C	197128
550-133801-1 MS	BAP-BOR-111919-10	Total/NA	Solid	6010C	197128
550-133801-1 MSD	BAP-BOR-111919-10	Total/NA	Solid	6010C	197128

QC Association Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Chollac Plant

Job ID: 550-133801-1

Metals

Analysis Batch: 198136

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133801-5	MW69A-AL-111819-24	SPLP West	Solid	6010C	197279
550-133801-6	MW69A-AL-111819-44	SPLP West	Solid	6010C	197279
550-133801-7	BAP-BOR2-111919-55	SPLP West	Solid	6010C	197279
550-133801-8	MW70M-MOQ-112019-39	SPLP West	Solid	6010C	197279
550-133801-9	DUP-02	SPLP West	Solid	6010C	197279
LB 550-197199/1-B	Method Blank	SPLP West	Solid	6010C	197279
MB 550-197279/1-A	Method Blank	Total/NA	Solid	6010C	197279
LCS 550-197279/2-A	Lab Control Sample	Total/NA	Solid	6010C	197279
LCSD 550-197279/3-A	Lab Control Sample Dup	Total/NA	Solid	6010C	197279
550-133801-C-2-B MS	550-133801-C-2-B MS	SPLP West	Solid	6010C	197279
550-133801-C-2-C MSD	550-133801-C-2-C MSD	SPLP West	Solid	6010C	197279

Analysis Batch: 198169

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133801-5	MW69A-AL-111819-24	SPLP West	Solid	6010C	197279
550-133801-6	MW69A-AL-111819-44	SPLP West	Solid	6010C	197279
550-133801-7	BAP-BOR2-111919-55	SPLP West	Solid	6010C	197279
550-133801-8	MW70M-MOQ-112019-39	SPLP West	Solid	6010C	197279
550-133801-9	DUP-02	SPLP West	Solid	6010C	197279
LB 550-197199/1-B	Method Blank	SPLP West	Solid	6010C	197279
MB 550-197279/1-A	Method Blank	Total/NA	Solid	6010C	197279
LCS 550-197279/2-A	Lab Control Sample	Total/NA	Solid	6010C	197279
LCSD 550-197279/3-A	Lab Control Sample Dup	Total/NA	Solid	6010C	197279
550-133801-C-2-B MS	550-133801-C-2-B MS	SPLP West	Solid	6010C	197279
550-133801-C-2-C MSD	550-133801-C-2-C MSD	SPLP West	Solid	6010C	197279

Analysis Batch: 198451

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133801-1	BAP-BOR-111919-10	Total/NA	Solid	6010C	197128
550-133801-2	BAP-BOR-111919-32	Total/NA	Solid	6010C	197128
550-133801-3	MW70M-MOQ-112119-77	Total/NA	Solid	6010C	197128
550-133801-4	BAP-BOR2-111919-60	Total/NA	Solid	6010C	197128
550-133801-5	MW69A-AL-111819-24	Total/NA	Solid	6010C	197128
550-133801-6	MW69A-AL-111819-44	Total/NA	Solid	6010C	197128
550-133801-7	BAP-BOR2-111919-55	Total/NA	Solid	6010C	197128
550-133801-8	MW70M-MOQ-112019-39	Total/NA	Solid	6010C	197128
550-133801-9	DUP-02	Total/NA	Solid	6010C	197128
MB 550-197128/1-A	Method Blank	Total/NA	Solid	6010C	197128
LCS 550-197128/2-A	Lab Control Sample	Total/NA	Solid	6010C	197128
LCSD 550-197128/3-A	Lab Control Sample Dup	Total/NA	Solid	6010C	197128
550-133801-1 MS	BAP-BOR-111919-10	Total/NA	Solid	6010C	197128
550-133801-1 MSD	BAP-BOR-111919-10	Total/NA	Solid	6010C	197128

Analysis Batch: 199626

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133801-2	BAP-BOR-111919-32	SPLP West	Solid	6010C	197194
550-133801-3	MW70M-MOQ-112119-77	SPLP West	Solid	6010C	197194
550-133801-5	MW69A-AL-111819-24	SPLP West	Solid	6010C	197194
550-133801-6	MW69A-AL-111819-44	SPLP West	Solid	6010C	197194
550-133801-7	BAP-BOR2-111919-55	SPLP West	Solid	6010C	197194
550-133801-8	MW70M-MOQ-112019-39	SPLP West	Solid	6010C	197194

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Chollac Plant

Job ID: 550-133801-1

Metals (Continued)

Analysis Batch: 199626 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133801-9	DUP-02	SPLP West	Solid	6010C	197194
LB 550-197111/1-B	Method Blank	SPLP West	Solid	6010C	197194
MB 550-197194/1-A	Method Blank	Total/NA	Solid	6010C	197194
LCS 550-197194/2-A	Lab Control Sample	Total/NA	Solid	6010C	197194
LCSD 550-197194/3-A	Lab Control Sample Dup	Total/NA	Solid	6010C	197194
550-133801-2 MS	BAP-BOR-111919-32	SPLP West	Solid	6010C	197194
550-133801-2 MSD	BAP-BOR-111919-32	SPLP West	Solid	6010C	197194

Analysis Batch: 199812

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133801-2	BAP-BOR-111919-32	SPLP West	Solid	6010C	197194
550-133801-3	MW70M-MOQ-112119-77	SPLP West	Solid	6010C	197194
550-133801-5	MW69A-AL-111819-24	SPLP West	Solid	6010C	197194
550-133801-6	MW69A-AL-111819-44	SPLP West	Solid	6010C	197194
550-133801-7	BAP-BOR2-111919-55	SPLP West	Solid	6010C	197194
550-133801-8	MW70M-MOQ-112019-39	SPLP West	Solid	6010C	197194
550-133801-9	DUP-02	SPLP West	Solid	6010C	197194
LB 550-197111/1-B	Method Blank	SPLP West	Solid	6010C	197194
MB 550-197194/1-A	Method Blank	Total/NA	Solid	6010C	197194
LCS 550-197194/2-A	Lab Control Sample	Total/NA	Solid	6010C	197194
LCSD 550-197194/3-A	Lab Control Sample Dup	Total/NA	Solid	6010C	197194
550-133801-2 MS	BAP-BOR-111919-32	SPLP West	Solid	6010C	197194
550-133801-2 MSD	BAP-BOR-111919-32	SPLP West	Solid	6010C	197194

Analysis Batch: 199870

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133801-1	BAP-BOR-111919-10	Total/NA	Solid	6010C	197128
550-133801-2	BAP-BOR-111919-32	Total/NA	Solid	6010C	197128
550-133801-3	MW70M-MOQ-112119-77	Total/NA	Solid	6010C	197128
550-133801-4	BAP-BOR2-111919-60	Total/NA	Solid	6010C	197128
550-133801-5	MW69A-AL-111819-24	Total/NA	Solid	6010C	197128
550-133801-6	MW69A-AL-111819-44	Total/NA	Solid	6010C	197128
550-133801-7	BAP-BOR2-111919-55	Total/NA	Solid	6010C	197128
550-133801-8	MW70M-MOQ-112019-39	Total/NA	Solid	6010C	197128
550-133801-9	DUP-02	Total/NA	Solid	6010C	197128
MB 550-197128/1-A	Method Blank	Total/NA	Solid	6010C	197128
LCSD 550-197128/3-A	Lab Control Sample Dup	Total/NA	Solid	6010C	197128
550-133801-1 MS	BAP-BOR-111919-10	Total/NA	Solid	6010C	197128
550-133801-1 MSD	BAP-BOR-111919-10	Total/NA	Solid	6010C	197128

Analysis Batch: 200131

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 550-197128/2-A	Lab Control Sample	Total/NA	Solid	6010C	197128

Lab Chronicle

Client: Wood E&I Solutions Inc
Project/Site: APS Chollac Plant

Job ID: 550-133801-1

Client Sample ID: BAP-BOR-111919-10

Lab Sample ID: 550-133801-1

Date Collected: 11/19/19 09:33

Matrix: Solid

Date Received: 11/22/19 14:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			198253	12/17/19 15:24	NEL	TAL PHX
Soluble	Analysis	9056A		1	198335	12/18/19 06:48	NEL	TAL PHX
Total/NA	Prep	3050B			197128	12/03/19 16:38	MGM	TAL PHX
Total/NA	Analysis	6010C		1	197304	12/05/19 04:48	SRA	TAL PHX
Total/NA	Prep	3050B			197128	12/03/19 16:38	MGM	TAL PHX
Total/NA	Analysis	6010C		1	198451	12/18/19 21:24	SRA	TAL PHX
Total/NA	Prep	3050B			197128	12/03/19 16:38	MGM	TAL PHX
Total/NA	Analysis	6010C		1	199870	01/09/20 15:31	MGM	TAL PHX

Client Sample ID: BAP-BOR-111919-32

Lab Sample ID: 550-133801-2

Date Collected: 11/19/19 09:51

Matrix: Solid

Date Received: 11/22/19 14:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			198253	12/17/19 15:24	NEL	TAL PHX
Soluble	Analysis	9056A		1	198335	12/18/19 07:15	NEL	TAL PHX
SPLP West	Leach	1312			197111	12/03/19 16:28	GJH	TAL PHX
SPLP West	Analysis	9056A		1	197316	12/05/19 11:41	NEL	TAL PHX
SPLP West	Leach	1312			197111	12/03/19 16:28	GJH	TAL PHX
SPLP West	Prep	3010A			197194	12/04/19 10:49	GJH	TAL PHX
SPLP West	Analysis	6010C		1	199626	01/07/20 16:44	SRA	TAL PHX
SPLP West	Leach	1312			197111	12/03/19 16:28	GJH	TAL PHX
SPLP West	Prep	3010A			197194	12/04/19 10:49	GJH	TAL PHX
SPLP West	Analysis	6010C		1	199812	01/09/20 12:36	SRA	TAL PHX
Total/NA	Prep	3050B			197128	12/03/19 16:38	MGM	TAL PHX
Total/NA	Analysis	6010C		1	197304	12/05/19 04:50	SRA	TAL PHX
Total/NA	Prep	3050B			197128	12/03/19 16:38	MGM	TAL PHX
Total/NA	Analysis	6010C		1	198451	12/18/19 21:26	SRA	TAL PHX
Total/NA	Prep	3050B			197128	12/03/19 16:38	MGM	TAL PHX
Total/NA	Analysis	6010C		1	199870	01/09/20 15:34	MGM	TAL PHX

Client Sample ID: MW70M-MOQ-112119-77

Lab Sample ID: 550-133801-3

Date Collected: 11/21/19 15:22

Matrix: Solid

Date Received: 11/22/19 14:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			198253	12/17/19 15:24	NEL	TAL PHX
Soluble	Analysis	9056A		1	198335	12/18/19 07:42	NEL	TAL PHX
SPLP West	Leach	1312			197111	12/03/19 16:28	GJH	TAL PHX
SPLP West	Analysis	9056A		1	197316	12/05/19 12:18	NEL	TAL PHX
SPLP West	Leach	1312			197111	12/03/19 16:28	GJH	TAL PHX
SPLP West	Prep	3010A			197194	12/04/19 10:49	GJH	TAL PHX
SPLP West	Analysis	6010C		1	199626	01/07/20 16:46	SRA	TAL PHX

Lab Chronicle

Client: Wood E&I Solutions Inc
Project/Site: APS Chollac Plant

Job ID: 550-133801-1

Client Sample ID: MW70M-MOQ-112119-77

Lab Sample ID: 550-133801-3

Date Collected: 11/21/19 15:22

Matrix: Solid

Date Received: 11/22/19 14:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP West	Leach	1312			197111	12/03/19 16:28	GJH	TAL PHX
SPLP West	Prep	3010A			197194	12/04/19 10:49	GJH	TAL PHX
SPLP West	Analysis	6010C		1	199812	01/09/20 12:38	SRA	TAL PHX
Total/NA	Prep	3050B			197128	12/03/19 16:38	MGM	TAL PHX
Total/NA	Analysis	6010C		1	197304	12/05/19 04:53	SRA	TAL PHX
Total/NA	Prep	3050B			197128	12/03/19 16:38	MGM	TAL PHX
Total/NA	Analysis	6010C		1	198451	12/18/19 21:29	SRA	TAL PHX
Total/NA	Prep	3050B			197128	12/03/19 16:38	MGM	TAL PHX
Total/NA	Analysis	6010C		1	199870	01/09/20 15:37	MGM	TAL PHX

Client Sample ID: BAP-BOR2-111919-60

Lab Sample ID: 550-133801-4

Date Collected: 11/19/19 14:15

Matrix: Solid

Date Received: 11/22/19 14:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			198253	12/17/19 15:24	NEL	TAL PHX
Soluble	Analysis	9056A		1	198335	12/18/19 08:10	NEL	TAL PHX
Total/NA	Prep	3050B			197128	12/03/19 16:38	MGM	TAL PHX
Total/NA	Analysis	6010C		1	197304	12/05/19 04:56	SRA	TAL PHX
Total/NA	Prep	3050B			197128	12/03/19 16:38	MGM	TAL PHX
Total/NA	Analysis	6010C		1	198451	12/18/19 21:32	SRA	TAL PHX
Total/NA	Prep	3050B			197128	12/03/19 16:38	MGM	TAL PHX
Total/NA	Analysis	6010C		1	199870	01/09/20 15:39	MGM	TAL PHX

Client Sample ID: MW69A-AL-111819-24

Lab Sample ID: 550-133801-5

Date Collected: 11/18/19 11:32

Matrix: Solid

Date Received: 11/22/19 14:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			198253	12/17/19 15:24	NEL	TAL PHX
Soluble	Analysis	9056A		1	198335	12/18/19 09:32	NEL	TAL PHX
SPLP West	Leach	1312			197111	12/03/19 16:28	GJH	TAL PHX
SPLP West	Analysis	9056A		50	197316	12/05/19 12:55	NEL	TAL PHX
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Prep	3010A			197279	12/05/19 10:45	GJH	TAL PHX
SPLP West	Analysis	6010C		1	198136	12/16/19 17:24	ARE	TAL PHX
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Prep	3010A			197279	12/05/19 10:45	GJH	TAL PHX
SPLP West	Analysis	6010C		1	198169	12/17/19 00:40	ARE	TAL PHX
SPLP West	Leach	1312			197111	12/03/19 16:28	GJH	TAL PHX
SPLP West	Prep	3010A			197194	12/04/19 10:49	GJH	TAL PHX
SPLP West	Analysis	6010C		1	199626	01/07/20 16:49	SRA	TAL PHX
SPLP West	Leach	1312			197111	12/03/19 16:28	GJH	TAL PHX
SPLP West	Prep	3010A			197194	12/04/19 10:49	GJH	TAL PHX
SPLP West	Analysis	6010C		1	199812	01/09/20 12:41	SRA	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Wood E&I Solutions Inc
Project/Site: APS Chollac Plant

Job ID: 550-133801-1

Client Sample ID: MW69A-AL-111819-24

Lab Sample ID: 550-133801-5

Date Collected: 11/18/19 11:32

Matrix: Solid

Date Received: 11/22/19 14:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			197128	12/03/19 16:38	MGM	TAL PHX
Total/NA	Analysis	6010C		1	197304	12/05/19 04:59	SRA	TAL PHX
Total/NA	Prep	3050B			197128	12/03/19 16:38	MGM	TAL PHX
Total/NA	Analysis	6010C		1	198451	12/18/19 21:35	SRA	TAL PHX
Total/NA	Prep	3050B			197128	12/03/19 16:38	MGM	TAL PHX
Total/NA	Analysis	6010C		1	199870	01/09/20 15:43	MGM	TAL PHX

Client Sample ID: MW69A-AL-111819-44

Lab Sample ID: 550-133801-6

Date Collected: 11/18/19 11:24

Matrix: Solid

Date Received: 11/22/19 14:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			198253	12/17/19 15:24	NEL	TAL PHX
Soluble	Analysis	9056A		1	198335	12/18/19 09:59	NEL	TAL PHX
SPLP West	Leach	1312			197111	12/03/19 16:28	GJH	TAL PHX
SPLP West	Analysis	9056A		1	197316	12/05/19 08:55	NEL	TAL PHX
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Prep	3010A			197279	12/05/19 10:45	GJH	TAL PHX
SPLP West	Analysis	6010C		1	198136	12/16/19 17:27	ARE	TAL PHX
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Prep	3010A			197279	12/05/19 10:45	GJH	TAL PHX
SPLP West	Analysis	6010C		1	198169	12/17/19 00:42	ARE	TAL PHX
SPLP West	Leach	1312			197111	12/03/19 16:28	GJH	TAL PHX
SPLP West	Prep	3010A			197194	12/04/19 10:49	GJH	TAL PHX
SPLP West	Analysis	6010C		1	199626	01/07/20 16:52	SRA	TAL PHX
SPLP West	Leach	1312			197111	12/03/19 16:28	GJH	TAL PHX
SPLP West	Prep	3010A			197194	12/04/19 10:49	GJH	TAL PHX
SPLP West	Analysis	6010C		1	199812	01/09/20 12:44	SRA	TAL PHX
Total/NA	Prep	3050B			197128	12/03/19 16:38	MGM	TAL PHX
Total/NA	Analysis	6010C		1	197304	12/05/19 05:02	SRA	TAL PHX
Total/NA	Prep	3050B			197128	12/03/19 16:38	MGM	TAL PHX
Total/NA	Analysis	6010C		1	198451	12/18/19 21:38	SRA	TAL PHX
Total/NA	Prep	3050B			197128	12/03/19 16:38	MGM	TAL PHX
Total/NA	Analysis	6010C		1	199870	01/09/20 15:46	MGM	TAL PHX

Client Sample ID: BAP-BOR2-111919-55

Lab Sample ID: 550-133801-7

Date Collected: 11/19/19 13:03

Matrix: Solid

Date Received: 11/22/19 14:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			198253	12/17/19 15:24	NEL	TAL PHX
Soluble	Analysis	9056A		10	198481	12/19/19 06:03	NEL	TAL PHX
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Prep	3010A			197279	12/05/19 10:45	GJH	TAL PHX
SPLP West	Analysis	6010C		1	198136	12/16/19 17:30	ARE	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Wood E&I Solutions Inc
Project/Site: APS Chollac Plant

Job ID: 550-133801-1

Client Sample ID: BAP-BOR2-111919-55

Lab Sample ID: 550-133801-7

Date Collected: 11/19/19 13:03

Matrix: Solid

Date Received: 11/22/19 14:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Prep	3010A			197279	12/05/19 10:45	GJH	TAL PHX
SPLP West	Analysis	6010C		1	198169	12/17/19 00:45	ARE	TAL PHX
SPLP West	Leach	1312			197111	12/03/19 16:28	GJH	TAL PHX
SPLP West	Prep	3010A			197194	12/04/19 10:49	GJH	TAL PHX
SPLP West	Analysis	6010C		1	199626	01/07/20 16:54	SRA	TAL PHX
SPLP West	Leach	1312			197111	12/03/19 16:28	GJH	TAL PHX
SPLP West	Prep	3010A			197194	12/04/19 10:49	GJH	TAL PHX
SPLP West	Analysis	6010C		1	199812	01/09/20 12:47	SRA	TAL PHX
Total/NA	Prep	3050B			197128	12/03/19 16:38	MGM	TAL PHX
Total/NA	Analysis	6010C		1	197304	12/05/19 05:05	SRA	TAL PHX
Total/NA	Prep	3050B			197128	12/03/19 16:38	MGM	TAL PHX
Total/NA	Analysis	6010C		1	198451	12/18/19 21:41	SRA	TAL PHX
Total/NA	Prep	3050B			197128	12/03/19 16:38	MGM	TAL PHX
Total/NA	Analysis	6010C		1	199870	01/09/20 15:49	MGM	TAL PHX

Client Sample ID: MW70M-MOQ-112019-39

Lab Sample ID: 550-133801-8

Date Collected: 11/20/19 15:55

Matrix: Solid

Date Received: 11/22/19 14:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			198253	12/17/19 15:24	NEL	TAL PHX
Soluble	Analysis	9056A		10	198481	12/19/19 06:31	NEL	TAL PHX
SPLP West	Leach	1312			197111	12/03/19 16:28	GJH	TAL PHX
SPLP West	Analysis	9056A		20	197316	12/05/19 10:27	NEL	TAL PHX
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Prep	3010A			197279	12/05/19 10:45	GJH	TAL PHX
SPLP West	Analysis	6010C		1	198136	12/16/19 17:33	ARE	TAL PHX
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Prep	3010A			197279	12/05/19 10:45	GJH	TAL PHX
SPLP West	Analysis	6010C		1	198169	12/17/19 00:48	ARE	TAL PHX
SPLP West	Leach	1312			197111	12/03/19 16:28	GJH	TAL PHX
SPLP West	Prep	3010A			197194	12/04/19 10:49	GJH	TAL PHX
SPLP West	Analysis	6010C		1	199626	01/07/20 16:57	SRA	TAL PHX
SPLP West	Leach	1312			197111	12/03/19 16:28	GJH	TAL PHX
SPLP West	Prep	3010A			197194	12/04/19 10:49	GJH	TAL PHX
SPLP West	Analysis	6010C		1	199812	01/09/20 12:49	SRA	TAL PHX
Total/NA	Prep	3050B			197128	12/03/19 16:38	MGM	TAL PHX
Total/NA	Analysis	6010C		1	197304	12/05/19 05:08	SRA	TAL PHX
Total/NA	Prep	3050B			197128	12/03/19 16:38	MGM	TAL PHX
Total/NA	Analysis	6010C		1	198451	12/18/19 21:44	SRA	TAL PHX
Total/NA	Prep	3050B			197128	12/03/19 16:38	MGM	TAL PHX
Total/NA	Analysis	6010C		1	199870	01/09/20 15:51	MGM	TAL PHX

Lab Chronicle

Client: Wood E&I Solutions Inc
Project/Site: APS Chollac Plant

Job ID: 550-133801-1

Client Sample ID: DUP-02

Date Collected: 11/20/19 16:40

Date Received: 11/22/19 14:53

Lab Sample ID: 550-133801-9

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Soluble	Leach	DI Leach			198253	12/17/19 15:24	NEL	TAL PHX
Soluble	Analysis	9056A		1	198335	12/18/19 11:22	NEL	TAL PHX
SPLP West	Leach	1312			197111	12/03/19 16:28	GJH	TAL PHX
SPLP West	Analysis	9056A		50	197316	12/05/19 11:04	NEL	TAL PHX
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Prep	3010A			197279	12/05/19 10:45	GJH	TAL PHX
SPLP West	Analysis	6010C		1	198136	12/16/19 17:36	ARE	TAL PHX
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Prep	3010A			197279	12/05/19 10:45	GJH	TAL PHX
SPLP West	Analysis	6010C		1	198169	12/17/19 00:51	ARE	TAL PHX
SPLP West	Leach	1312			197111	12/03/19 16:28	GJH	TAL PHX
SPLP West	Prep	3010A			197194	12/04/19 10:49	GJH	TAL PHX
SPLP West	Analysis	6010C		1	199626	01/07/20 17:00	SRA	TAL PHX
SPLP West	Leach	1312			197111	12/03/19 16:28	GJH	TAL PHX
SPLP West	Prep	3010A			197194	12/04/19 10:49	GJH	TAL PHX
SPLP West	Analysis	6010C		1	199812	01/09/20 12:52	SRA	TAL PHX
Total/NA	Prep	3050B			197128	12/03/19 16:38	MGM	TAL PHX
Total/NA	Analysis	6010C		1	197304	12/05/19 05:11	SRA	TAL PHX
Total/NA	Prep	3050B			197128	12/03/19 16:38	MGM	TAL PHX
Total/NA	Analysis	6010C		1	198451	12/18/19 21:47	SRA	TAL PHX
Total/NA	Prep	3050B			197128	12/03/19 16:38	MGM	TAL PHX
Total/NA	Analysis	6010C		1	199870	01/09/20 15:54	MGM	TAL PHX

Laboratory References:

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Chollac Plant

Job ID: 550-133801-1

Laboratory: Eurofins TestAmerica, Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Arizona	State Program	AZ0728	06-09-20
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte

Method Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Chollac Plant

Job ID: 550-133801-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL PHX
6010C	Metals (ICP)	SW846	TAL PHX
1312	SPLP Extraction	SW846	TAL PHX
3010A	Preparation, Total Metals	SW846	TAL PHX
3050B	Preparation, Metals	SW846	TAL PHX
DI Leach	Deionized Water Leaching Procedure	ASTM	TAL PHX

Protocol References:

ASTM = ASTM International

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Chain of Custody Record

372382



Environment TestAmerica

Address:

133801

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TAL-3210

Client Contact		Project Manager: EMILY WIDOLCE		Site Contact: KEN BAKER		Date:		COC No:		Sampler:	
Company Name: W 000		Tel/Email:		Lab Contact:		Carrier:		COCs		For Lab Use Only:	
Address:		Analysis Turnaround Time		Perform MS / MSD (Y / N)						Walk-in Client:	
City/State/Zip:		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS		6010C						Lab Sampling:	
Phone:		TAT if different from Below		9056AS04						Job / SDG No.:	
Fax:		2 weeks		SPLP-9056AS04							
Project Name:		1 week		SPLP-6010C							
Site: ADS CHEM PLANT		2 days		BAP H2O - 6010C							
PO #		1 day		BAP H2O - 9056A							
Sample Identification		Sample Date	Sample Time	Sample Type (C-Comp, G-Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Sample Specific Notes:			
-01	BAP-BOR-111919-10	11-19-19	0933	G		2	N	(hold)			
-02	BAP-BOR-111919-32	11-19-19	0951	G		4	N				
-03	MW TDM-MDQ-112119-77	11-21-19	1522	G		6	N				
-04	BAP-BOR2-111919-60	11-19-19	1415	G		4	N				
-05	MW G9A-A1-111819-24	11-18-19	1132	G		6	N				
-06	MW G9A-A1-111819-4	11-18-19	1124	G		6	N				
-07	BAP-BOR2-111919-55	11-19-19	1303	G		6	N				
-08	MW TDM-MDQ-112019-39	11-20-19	1555	G		6	N				
-09	DUP-02	11-20-19	1640	G		6	N				
Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)									
Possible Hazard Identification:		Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months									
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.											
Special Instructions/QC Requirements & Comments:		Cooler Temp. (°C): Obsd: _____ Corrd: _____ Therm ID No.: _____									
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Date/Time:		Received by:		Company:		Date/Time:	
Relinquished by: [Signature]		wood		11-21-19 1453		Received by: [Signature]		wood		11/21/19 - 17:05	
Relinquished by: [Signature]		wood		11-22-19 1453		Received by: [Signature]		TA-PH2		11/22/19 1453	

Login Sample Receipt Checklist

Client: Wood E&I Solutions Inc

Job Number: 550-133801-1

Login Number: 133801

List Source: Eurofins TestAmerica, Phoenix

List Number: 1

Creator: Gravlin, Andrea

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

Eurofins TestAmerica, Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-133801-2

Client Project/Site: APS Leaching Study-WOOD

For:

Wood E&I Solutions Inc
4634 South 36th Place
Lab
Phoenix, Arizona 85040

Attn: Dane Andersen



Authorized for release by:
2/17/2020 8:50:27 AM

Urvashi Patel, Client Service Manager
urvashi.patel@testamericainc.com

Designee for

Ken Baker, Project Manager II
(602)659-7624
ken.baker@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Sample Summary	6
Detection Summary	7
Client Sample Results	8
QC Sample Results	11
QC Association Summary	16
Lab Chronicle	19
Certification Summary	22
Method Summary	23
Chain of Custody	24
Receipt Checklists	25



Definitions/Glossary

Client: Wood E&I Solutions Inc
Project/Site: APS Leaching Study-WOOD

Job ID: 550-133801-2

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
B8	Analyte found in both the travel blank and sample.
D2	Sample required dilution due to high concentration of analyte.
N1	See case narrative.

Metals

Qualifier	Qualifier Description
B1	Target analyte detected in method blank at or above the method reporting limit.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above MDL.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
N1	See case narrative.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Wood E&I Solutions Inc
Project/Site: APS Leaching Study-WOOD

Job ID: 550-133801-2

Job ID: 550-133801-2

Laboratory: Eurofins TestAmerica, Phoenix

Narrative

Job Narrative 550-133801-2

Comments

No additional comments.

Receipt

The samples were received on 11/22/2019 2:53 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 1.7° C, 2.8° C and 4.2° C.

Receipt Exceptions

Did not login methods, waiting on leachate water from client.

BAP-BOR-111919-10 (550-133801-1), BAP-BOR-111919-32 (550-133801-2), MW70M-MOQ-112119-77 (550-133801-3), BAP-BOR2-111919-60 (550-133801-4), MW69A-AL-111819-24 (550-133801-5), MW69A-AL-111819-44 (550-133801-6), BAP-BOR2-111919-55 (550-133801-7), MW70M-MOQ-112019-39 (550-133801-8) and DUP-02 (550-133801-9)

HPLC/IC

Method 9056A: A matrix spike / matrix spike duplicate (MS/MSD) was not prepared for Sulfate by SPLP BAP Leach Extraction per method EPA 1312/9056A associated with analytical batch 550-197403 due to an analyst error. A sample duplicate (DU) was prepared in lieu of a MS/MSD which may be used to verify batch precision data. In addition, the results for the associated laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were within acceptance limits which may be used to verify batch accuracy and precision data. As such, these data have been reported.

BAP-BOR-111919-32 (550-133801-2), MW70M-MOQ-112119-77 (550-133801-3), MW69A-AL-111819-24 (550-133801-5), MW69A-AL-111819-44 (550-133801-6), MW70M-MOQ-112019-39 (550-133801-8), DUP-02 (550-133801-9) and (550-133801-A-9-E DU ^50.0)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method 6010C: Boron and Lithium are provided for qualitative analysis only per client request. Results may not be used for compliance.

BAP-BOR-111919-32 (550-133801-2), MW70M-MOQ-112119-77 (550-133801-3), MW69A-AL-111819-24 (550-133801-5), MW69A-AL-111819-44 (550-133801-6), BAP-BOR2-111919-55 (550-133801-7) and MW70M-MOQ-112019-39 (550-133801-8)

Method 6010C: Boron and Lithium are reported for qualitative purposes only. Results cannot be used for compliance.

BAP-BOR-111919-32 (550-133801-2), MW70M-MOQ-112119-77 (550-133801-3), MW69A-AL-111819-24 (550-133801-5), MW69A-AL-111819-44 (550-133801-6), BAP-BOR2-111919-55 (550-133801-7), MW70M-MOQ-112019-39 (550-133801-8) and DUP-02 (550-133801-9)

Method 6010C: The initial calibration verification low (ICVL) result for batch 550-200375 was above the upper control limit for iron. Sample results were non-detects, and have been reported as qualified data.

Method 6010C: Results for Boron cannot be used for compliance. Data given at client request.

BAP-BOR-111919-32 (550-133801-2), MW69A-AL-111819-24 (550-133801-5), MW69A-AL-111819-44 (550-133801-6), BAP-BOR2-111919-55 (550-133801-7), MW70M-MOQ-112019-39 (550-133801-8) and DUP-02 (550-133801-9)

Method 6010C: The leach blank for analytical batch 550-200375 contained Boron above the reporting limit (RL). Sample results may be biased high for boron and were reported per client request.

Method 6010C: The TCLP leachate blank for batch 550-197199 and 550-197279 contained Boron above the reporting limit (RL). This

Case Narrative

Client: Wood E&I Solutions Inc
Project/Site: APS Leaching Study-WOOD

Job ID: 550-133801-2

Job ID: 550-133801-2 (Continued)

Laboratory: Eurofins TestAmerica, Phoenix (Continued)

target analyte concentration was less than the TCLP Regulatory Limit; therefore, results were reported.

Method 6010C: The low level continuing calibration verification (CCVL) associated with batch 550-202772 recovered above the upper control limit for Iron. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Industrial Hygiene

Method 9056A: Per the client's request, the laboratory performed SPLP extraction for the following samples using the client provided extraction fluid (identified by the client as: BAP). The associated SPLP leach blank contained a detection for Sulfate in an amount that was above the laboratory's reporting limit (RL) in analytical batch 550-197403. A dilution was required to get the sulfate concentration within the instrument's calibration range. Therefore, the background detection for Sulfate using the client provided extraction fluid was not subtracted from the results for the following client's samples. As such, these results have been qualified with D2, B8 and N1 flags.

BAP-BOR-111919-32 (550-133801-2), MW70M-MOQ-112119-77 (550-133801-3), MW69A-AL-111819-24 (550-133801-5), MW69A-AL-111819-44 (550-133801-6), MW70M-MOQ-112019-39 (550-133801-8), DUP-02 (550-133801-9), (LB 550-197199/1-A) and (550-133801-A-9-E DU ^50.0)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Leaching Study-WOOD

Job ID: 550-133801-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
550-133801-2	BAP-BOR-111919-32	Solid	11/19/19 09:51	11/22/19 14:53	
550-133801-3	MW70M-MOQ-112119-77	Solid	11/21/19 15:22	11/22/19 14:53	
550-133801-5	MW69A-AL-111819-24	Solid	11/18/19 11:32	11/22/19 14:53	
550-133801-6	MW69A-AL-111819-44	Solid	11/18/19 11:24	11/22/19 14:53	
550-133801-7	BAP-BOR2-111919-55	Solid	11/19/19 13:03	11/22/19 14:53	
550-133801-8	MW70M-MOQ-112019-39	Solid	11/20/19 15:55	11/22/19 14:53	
550-133801-9	DUP-02	Solid	11/20/19 16:40	11/22/19 14:53	

Detection Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Leaching Study-WOOD

Job ID: 550-133801-2

Client Sample ID: BAP-BOR-111919-32

Lab Sample ID: 550-133801-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	2800	B8 D2 N1	100	21	mg/L	50		9056A	SPLP West
Arsenic	0.032	E4	0.50	0.028	mg/L	1		6010C	SPLP West
Boron	3.4	N1	1.0	1.0	mg/L	1		6010C	SPLP West

Client Sample ID: MW70M-MOQ-112119-77

Lab Sample ID: 550-133801-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	2800	B8 D2 N1	100	21	mg/L	50		9056A	SPLP West
Boron	3.2	N1	1.0	1.0	mg/L	1		6010C	SPLP West

Client Sample ID: MW69A-AL-111819-24

Lab Sample ID: 550-133801-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	3000	B8 D2 N1	100	21	mg/L	50		9056A	SPLP West
Boron	3.4	N1	1.0	1.0	mg/L	1		6010C	SPLP West

Client Sample ID: MW69A-AL-111819-44

Lab Sample ID: 550-133801-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	2800	B8 D2 N1	100	21	mg/L	50		9056A	SPLP West
Boron	3.2	N1	1.0	1.0	mg/L	1		6010C	SPLP West

Client Sample ID: BAP-BOR2-111919-55

Lab Sample ID: 550-133801-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	3.3	N1	1.0	1.0	mg/L	1		6010C	SPLP West

Client Sample ID: MW70M-MOQ-112019-39

Lab Sample ID: 550-133801-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	3000	B8 D2 N1	100	21	mg/L	50		9056A	SPLP West
Arsenic	0.028	E4	0.50	0.028	mg/L	1		6010C	SPLP West
Boron	3.4	N1	1.0	1.0	mg/L	1		6010C	SPLP West

Client Sample ID: DUP-02

Lab Sample ID: 550-133801-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	3000	B8 D2 N1	100	21	mg/L	50		9056A	SPLP West
Boron	3.5	N1	1.0	1.0	mg/L	1		6010C	SPLP West

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Leaching Study-WOOD

Job ID: 550-133801-2

Client Sample ID: BAP-BOR-111919-32

Lab Sample ID: 550-133801-2

Date Collected: 11/19/19 09:51

Matrix: Solid

Date Received: 11/22/19 14:53

Method: 9056A - Anions, Ion Chromatography - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2800	B8 D2 N1	100	21	mg/L	-		12/06/19 02:35	50

Method: 6010C - Metals (ICP) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.032	E4	0.50	0.028	mg/L	-	12/05/19 10:45	12/17/19 00:34	1
Boron	3.4	N1	1.0	1.0	mg/L	-	12/05/19 10:45	01/15/20 21:46	1
Chromium	ND	E8	0.50	0.0055	mg/L	-	12/05/19 10:45	12/17/19 00:34	1
Cobalt	ND	E8	0.20	0.0075	mg/L	-	12/05/19 10:45	12/16/19 17:19	1
Iron	ND	E8	1.0	0.11	mg/L	-	12/05/19 10:45	01/15/20 21:46	1
Lithium	ND	E8	4.0	4.0	mg/L	-	12/05/19 10:45	12/17/19 00:34	1

Client Sample ID: MW70M-MOQ-112119-77

Lab Sample ID: 550-133801-3

Date Collected: 11/21/19 15:22

Matrix: Solid

Date Received: 11/22/19 14:53

Method: 9056A - Anions, Ion Chromatography - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2800	B8 D2 N1	100	21	mg/L	-		12/06/19 03:03	50

Method: 6010C - Metals (ICP) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	0.50	0.028	mg/L	-	12/05/19 10:45	12/17/19 00:37	1
Boron	3.2	N1	1.0	1.0	mg/L	-	12/05/19 10:45	12/17/19 00:37	1
Chromium	ND	E8	0.50	0.0055	mg/L	-	12/05/19 10:45	12/17/19 00:37	1
Cobalt	ND	E8	0.20	0.0075	mg/L	-	12/05/19 10:45	12/16/19 17:21	1
Iron	ND	E8	1.0	0.11	mg/L	-	12/05/19 10:45	02/14/20 11:10	1
Lithium	ND	E8	4.0	4.0	mg/L	-	12/05/19 10:45	12/17/19 00:37	1

Client Sample ID: MW69A-AL-111819-24

Lab Sample ID: 550-133801-5

Date Collected: 11/18/19 11:32

Matrix: Solid

Date Received: 11/22/19 14:53

Method: 9056A - Anions, Ion Chromatography - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	3000	B8 D2 N1	100	21	mg/L	-		12/06/19 03:30	50

Method: 6010C - Metals (ICP) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	0.50	0.028	mg/L	-	12/05/19 10:45	12/17/19 00:40	1
Boron	3.4	N1	1.0	1.0	mg/L	-	12/05/19 10:45	01/15/20 21:49	1
Chromium	ND	E8	0.50	0.0055	mg/L	-	12/05/19 10:45	12/17/19 00:40	1
Cobalt	ND	E8	0.20	0.0075	mg/L	-	12/05/19 10:45	12/16/19 17:24	1
Iron	ND	E8	1.0	0.11	mg/L	-	12/05/19 10:45	01/15/20 21:49	1
Lithium	ND	E8	4.0	4.0	mg/L	-	12/05/19 10:45	12/17/19 00:40	1

Client Sample ID: MW69A-AL-111819-44

Lab Sample ID: 550-133801-6

Date Collected: 11/18/19 11:24

Matrix: Solid

Date Received: 11/22/19 14:53

Method: 9056A - Anions, Ion Chromatography - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2800	B8 D2 N1	100	21	mg/L	-		12/06/19 03:58	50

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Leaching Study-WOOD

Job ID: 550-133801-2

Client Sample ID: MW69A-AL-111819-44

Lab Sample ID: 550-133801-6

Date Collected: 11/18/19 11:24

Matrix: Solid

Date Received: 11/22/19 14:53

Method: 6010C - Metals (ICP) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	0.50	0.028	mg/L	—	12/05/19 10:45	12/17/19 00:42	1
Boron	3.2	N1	1.0	1.0	mg/L	—	12/05/19 10:45	01/15/20 21:51	1
Chromium	ND	E8	0.50	0.0055	mg/L	—	12/05/19 10:45	12/17/19 00:42	1
Cobalt	ND	E8	0.20	0.0075	mg/L	—	12/05/19 10:45	12/16/19 17:27	1
Iron	ND	E8	1.0	0.11	mg/L	—	12/05/19 10:45	01/15/20 21:51	1
Lithium	ND	E8	4.0	4.0	mg/L	—	12/05/19 10:45	12/17/19 00:42	1

Client Sample ID: BAP-BOR2-111919-55

Lab Sample ID: 550-133801-7

Date Collected: 11/19/19 13:03

Matrix: Solid

Date Received: 11/22/19 14:53

Method: 6010C - Metals (ICP) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	0.50	0.028	mg/L	—	12/05/19 10:45	12/17/19 00:45	1
Boron	3.3	N1	1.0	1.0	mg/L	—	12/05/19 10:45	01/15/20 21:54	1
Chromium	ND	E8	0.50	0.0055	mg/L	—	12/05/19 10:45	12/17/19 00:45	1
Cobalt	ND	E8	0.20	0.0075	mg/L	—	12/05/19 10:45	12/16/19 17:30	1
Iron	ND	E8	1.0	0.11	mg/L	—	12/05/19 10:45	01/15/20 21:54	1
Lithium	ND	E8	4.0	4.0	mg/L	—	12/05/19 10:45	12/17/19 00:45	1

Client Sample ID: MW70M-MOQ-112019-39

Lab Sample ID: 550-133801-8

Date Collected: 11/20/19 15:55

Matrix: Solid

Date Received: 11/22/19 14:53

Method: 9056A - Anions, Ion Chromatography - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	3000	B8 D2 N1	100	21	mg/L	—	—	12/06/19 05:47	50

Method: 6010C - Metals (ICP) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.028	E4	0.50	0.028	mg/L	—	12/05/19 10:45	12/17/19 00:48	1
Boron	3.4	N1	1.0	1.0	mg/L	—	12/05/19 10:45	01/15/20 21:57	1
Chromium	ND	E8	0.50	0.0055	mg/L	—	12/05/19 10:45	12/17/19 00:48	1
Cobalt	ND	E8	0.20	0.0075	mg/L	—	12/05/19 10:45	12/16/19 17:33	1
Iron	ND	E8	1.0	0.11	mg/L	—	12/05/19 10:45	01/15/20 21:57	1
Lithium	ND	E8	4.0	4.0	mg/L	—	12/05/19 10:45	12/17/19 00:48	1

Client Sample ID: DUP-02

Lab Sample ID: 550-133801-9

Date Collected: 11/20/19 16:40

Matrix: Solid

Date Received: 11/22/19 14:53

Method: 9056A - Anions, Ion Chromatography - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	3000	B8 D2 N1	100	21	mg/L	—	—	12/06/19 04:35	50

Method: 6010C - Metals (ICP) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	0.50	0.028	mg/L	—	12/05/19 10:45	12/17/19 00:51	1
Boron	3.5	N1	1.0	1.0	mg/L	—	12/05/19 10:45	01/15/20 22:00	1
Chromium	ND	E8	0.50	0.0055	mg/L	—	12/05/19 10:45	12/17/19 00:51	1
Cobalt	ND	E8	0.20	0.0075	mg/L	—	12/05/19 10:45	12/16/19 17:36	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Leaching Study-WOOD

Job ID: 550-133801-2

Client Sample ID: DUP-02

Date Collected: 11/20/19 16:40

Date Received: 11/22/19 14:53

Lab Sample ID: 550-133801-9

Matrix: Solid

Method: 6010C - Metals (ICP) - SPLP West (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND	E8	1.0	0.11	mg/L		12/05/19 10:45	01/15/20 22:00	1
Lithium	ND	E8	4.0	4.0	mg/L		12/05/19 10:45	12/17/19 00:51	1

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Leaching Study-WOOD

Job ID: 550-133801-2

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: LCS 550-197404/5

Matrix: Solid

Analysis Batch: 197404

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	19.7		mg/L		99	80 - 120

Lab Sample ID: LCSD 550-197404/6

Matrix: Solid

Analysis Batch: 197404

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	20.0	19.7		mg/L		98	80 - 120	0	20

Lab Sample ID: LB 550-197199/1-A

Matrix: Solid

Analysis Batch: 197729

Client Sample ID: Method Blank

Prep Type: SPLP West

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2770	B8 D2 N1	100	21	mg/L			12/10/19 23:56	50

Lab Sample ID: 550-133801-9 DU

Matrix: Solid

Analysis Batch: 197844

Client Sample ID: DUP-02

Prep Type: SPLP West

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	3000	D2 B8 N1	3030	B8 D2 N1	mg/L				
								0.5	15

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 550-197279/1-A

Matrix: Solid

Analysis Batch: 198136

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 197279

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	ND	E8	0.20	0.0075	mg/L		12/05/19 10:45	12/16/19 16:59	1

Lab Sample ID: MB 550-197279/1-A

Matrix: Solid

Analysis Batch: 198169

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 197279

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	0.50	0.028	mg/L		12/05/19 10:45	12/17/19 00:14	1
Boron	ND	E8	1.0	1.0	mg/L		12/05/19 10:45	12/17/19 00:14	1
Chromium	ND	E8	0.50	0.0055	mg/L		12/05/19 10:45	12/17/19 00:14	1
Cobalt	ND	E8	0.20	0.0075	mg/L		12/05/19 10:45	12/17/19 00:14	1
Lithium	ND	E8	4.0	4.0	mg/L		12/05/19 10:45	12/17/19 00:14	1

Lab Sample ID: MB 550-197279/1-A

Matrix: Solid

Analysis Batch: 200375

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 197279

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	0.50	0.028	mg/L		12/05/19 10:45	01/15/20 21:26	1
Boron	ND	E8	1.0	1.0	mg/L		12/05/19 10:45	01/15/20 21:26	1

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Leaching Study-WOOD

Job ID: 550-133801-2

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 550-197279/1-A

Matrix: Solid

Analysis Batch: 200375

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 197279

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND	E8	0.50	0.0055	mg/L		12/05/19 10:45	01/15/20 21:26	1
Cobalt	ND	E8	0.20	0.0075	mg/L		12/05/19 10:45	01/15/20 21:26	1
Iron	0.199	E4	1.0	0.11	mg/L		12/05/19 10:45	01/15/20 21:26	1
Lithium	ND	E8	4.0	4.0	mg/L		12/05/19 10:45	01/15/20 21:26	1

Lab Sample ID: LCS 550-197279/2-A

Matrix: Solid

Analysis Batch: 198136

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 197279

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cobalt	5.00	4.73		mg/L		95	88 - 111

Lab Sample ID: LCS 550-197279/2-A

Matrix: Solid

Analysis Batch: 198169

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 197279

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	5.00	4.83		mg/L		97	89 - 111
Boron	5.00	4.81		mg/L		96	
Chromium	5.00	4.80		mg/L		96	86 - 112
Cobalt	5.00	4.91		mg/L		98	88 - 111
Lithium	5.00	4.92		mg/L		98	

Lab Sample ID: LCS 550-197279/2-A

Matrix: Solid

Analysis Batch: 200375

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 197279

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	5.00	4.94		mg/L		99	89 - 111
Boron	5.00	4.93		mg/L		99	
Chromium	5.00	5.02		mg/L		100	86 - 112
Cobalt	5.00	5.03		mg/L		101	88 - 111
Iron	5.00	4.92		mg/L		98	87 - 117
Lithium	5.00	5.01		mg/L		100	

Lab Sample ID: LCSD 550-197279/3-A

Matrix: Solid

Analysis Batch: 198136

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 197279

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cobalt	5.00	4.69		mg/L		94	88 - 111	1	20

Lab Sample ID: LCSD 550-197279/3-A

Matrix: Solid

Analysis Batch: 198169

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 197279

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	5.00	4.87		mg/L		97	89 - 111	1	20
Boron	5.00	4.83		mg/L		97		0	20
Chromium	5.00	4.79		mg/L		96	86 - 112	0	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Leaching Study-WOOD

Job ID: 550-133801-2

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCSD 550-197279/3-A

Matrix: Solid

Analysis Batch: 198169

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 197279

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cobalt	5.00	4.92		mg/L		98	88 - 111	0	20
Lithium	5.00	4.90		mg/L		98		0	20

Lab Sample ID: LCSD 550-197279/3-A

Matrix: Solid

Analysis Batch: 200375

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 197279

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	5.00	4.90		mg/L		98	89 - 111	1	20
Boron	5.00	4.90		mg/L		98		1	20
Chromium	5.00	4.95		mg/L		99	86 - 112	1	20
Cobalt	5.00	4.98		mg/L		100	88 - 111	1	20
Iron	5.00	5.11		mg/L		102	87 - 117	4	20
Lithium	5.00	4.98		mg/L		100		1	20

Lab Sample ID: LB 550-197199/1-B

Matrix: Solid

Analysis Batch: 198136

Client Sample ID: Method Blank

Prep Type: SPLP West

Prep Batch: 197279

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	ND	E8	0.20	0.0075	mg/L		12/05/19 10:45	12/16/19 17:16	1

Lab Sample ID: LB 550-197199/1-B

Matrix: Solid

Analysis Batch: 198169

Client Sample ID: Method Blank

Prep Type: SPLP West

Prep Batch: 197279

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	0.50	0.028	mg/L		12/05/19 10:45	12/17/19 00:31	1
Boron	3.33	B1	1.0	1.0	mg/L		12/05/19 10:45	12/17/19 00:31	1
Chromium	ND	E8	0.50	0.0055	mg/L		12/05/19 10:45	12/17/19 00:31	1
Cobalt	ND	E8	0.20	0.0075	mg/L		12/05/19 10:45	12/17/19 00:31	1
Lithium	ND	E8	4.0	4.0	mg/L		12/05/19 10:45	12/17/19 00:31	1

Lab Sample ID: LB 550-197199/1-B

Matrix: Solid

Analysis Batch: 200375

Client Sample ID: Method Blank

Prep Type: SPLP West

Prep Batch: 197279

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0321	E4	0.50	0.028	mg/L		12/05/19 10:45	01/15/20 21:43	1
Boron	3.37	N1	1.0	1.0	mg/L		12/05/19 10:45	01/15/20 21:43	1
Chromium	ND	E8	0.50	0.0055	mg/L		12/05/19 10:45	01/15/20 21:43	1
Cobalt	ND	E8	0.20	0.0075	mg/L		12/05/19 10:45	01/15/20 21:43	1
Iron	ND	E8	1.0	0.11	mg/L		12/05/19 10:45	01/15/20 21:43	1
Lithium	ND	E8	4.0	4.0	mg/L		12/05/19 10:45	01/15/20 21:43	1

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Leaching Study-WOOD

Job ID: 550-133801-2

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 550-133801-2 MS

Matrix: Solid

Analysis Batch: 198136

Client Sample ID: BAP-BOR-111919-32

Prep Type: SPLP West

Prep Batch: 197279

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cobalt	ND	E8	5.00	4.49		mg/L		90	75 - 125

Lab Sample ID: 550-133801-2 MS

Matrix: Solid

Analysis Batch: 198169

Client Sample ID: BAP-BOR-111919-32

Prep Type: SPLP West

Prep Batch: 197279

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	0.032	E4	5.00	5.10		mg/L		101	75 - 125
Chromium	ND	E8	5.00	4.81		mg/L		96	75 - 125
Cobalt	ND	E8	5.00	4.94		mg/L		99	75 - 125
Lithium	ND	E8	5.00	5.14		mg/L		103	75 - 125

Lab Sample ID: 550-133801-2 MS

Matrix: Solid

Analysis Batch: 200375

Client Sample ID: BAP-BOR-111919-32

Prep Type: SPLP West

Prep Batch: 197279

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	ND	E8	5.00	5.17		mg/L		103	75 - 125
Boron	3.4	N1	5.00	8.61		mg/L		104	75 - 125
Chromium	ND	E8	5.00	4.93		mg/L		99	75 - 125
Cobalt	ND	E8	5.00	4.95		mg/L		99	75 - 125
Iron	ND	E8	5.00	4.87		mg/L		97	75 - 125
Lithium	ND	E8	5.00	5.22		mg/L		104	75 - 125

Lab Sample ID: 550-133801-2 MSD

Matrix: Solid

Analysis Batch: 198136

Client Sample ID: BAP-BOR-111919-32

Prep Type: SPLP West

Prep Batch: 197279

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Cobalt	ND	E8	5.00	4.61		mg/L		92	75 - 125	3	20

Lab Sample ID: 550-133801-2 MSD

Matrix: Solid

Analysis Batch: 198169

Client Sample ID: BAP-BOR-111919-32

Prep Type: SPLP West

Prep Batch: 197279

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Arsenic	0.032	E4	5.00	5.13		mg/L		102	75 - 125	1	20
Chromium	ND	E8	5.00	4.84		mg/L		97	75 - 125	1	20
Cobalt	ND	E8	5.00	4.95		mg/L		99	75 - 125	0	20
Lithium	ND	E8	5.00	5.08		mg/L		102	75 - 125	1	20

Lab Sample ID: 550-133801-2 MSD

Matrix: Solid

Analysis Batch: 200375

Client Sample ID: BAP-BOR-111919-32

Prep Type: SPLP West

Prep Batch: 197279

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Arsenic	ND	E8	5.00	5.15		mg/L		103	75 - 125	0	20
Boron	3.4	N1	5.00	8.52		mg/L		103	75 - 125	1	20
Chromium	ND	E8	5.00	4.94		mg/L		99	75 - 125	0	20
Cobalt	ND	E8	5.00	4.95		mg/L		99	75 - 125	0	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Leaching Study-WOOD

Job ID: 550-133801-2

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 550-133801-2 MSD

Matrix: Solid

Analysis Batch: 200375

Client Sample ID: BAP-BOR-111919-32

Prep Type: SPLP West

Prep Batch: 197279

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	ND	E8	5.00	4.88		mg/L		98	75 - 125	0	20
Lithium	ND	E8	5.00	5.17		mg/L		103	75 - 125	1	20

QC Association Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Leaching Study-WOOD

Job ID: 550-133801-2

HPLC/IC

Leach Batch: 197199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133801-2	BAP-BOR-111919-32	SPLP West	Solid	1312	
550-133801-3	MW70M-MOQ-112119-77	SPLP West	Solid	1312	
550-133801-5	MW69A-AL-111819-24	SPLP West	Solid	1312	
550-133801-6	MW69A-AL-111819-44	SPLP West	Solid	1312	
550-133801-8	MW70M-MOQ-112019-39	SPLP West	Solid	1312	
550-133801-9	DUP-02	SPLP West	Solid	1312	
LB 550-197199/1-A	Method Blank	SPLP West	Solid	1312	
550-133801-9 DU	DUP-02	SPLP West	Solid	1312	

Analysis Batch: 197403

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133801-9	DUP-02	SPLP West	Solid	9056A	197199

Analysis Batch: 197404

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133801-2	BAP-BOR-111919-32	SPLP West	Solid	9056A	197199
550-133801-3	MW70M-MOQ-112119-77	SPLP West	Solid	9056A	197199
550-133801-5	MW69A-AL-111819-24	SPLP West	Solid	9056A	197199
550-133801-6	MW69A-AL-111819-44	SPLP West	Solid	9056A	197199
550-133801-8	MW70M-MOQ-112019-39	SPLP West	Solid	9056A	197199
LCS 550-197404/5	Lab Control Sample	Total/NA	Solid	9056A	
LCSD 550-197404/6	Lab Control Sample Dup	Total/NA	Solid	9056A	

Analysis Batch: 197729

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LB 550-197199/1-A	Method Blank	SPLP West	Solid	9056A	197199

Analysis Batch: 197844

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133801-9 DU	DUP-02	SPLP West	Solid	9056A	197199

Metals

Leach Batch: 197199

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133801-2	BAP-BOR-111919-32	SPLP West	Solid	1312	
550-133801-3	MW70M-MOQ-112119-77	SPLP West	Solid	1312	
550-133801-5	MW69A-AL-111819-24	SPLP West	Solid	1312	
550-133801-6	MW69A-AL-111819-44	SPLP West	Solid	1312	
550-133801-7	BAP-BOR2-111919-55	SPLP West	Solid	1312	
550-133801-8	MW70M-MOQ-112019-39	SPLP West	Solid	1312	
550-133801-9	DUP-02	SPLP West	Solid	1312	
LB 550-197199/1-B	Method Blank	SPLP West	Solid	1312	
550-133801-2 MS	BAP-BOR-111919-32	SPLP West	Solid	1312	
550-133801-2 MSD	BAP-BOR-111919-32	SPLP West	Solid	1312	

Prep Batch: 197279

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133801-2	BAP-BOR-111919-32	SPLP West	Solid	3010A	197199
550-133801-3	MW70M-MOQ-112119-77	SPLP West	Solid	3010A	197199
550-133801-5	MW69A-AL-111819-24	SPLP West	Solid	3010A	197199

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Leaching Study-WOOD

Job ID: 550-133801-2

Metals (Continued)

Prep Batch: 197279 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133801-6	MW69A-AL-111819-44	SPLP West	Solid	3010A	197199
550-133801-7	BAP-BOR2-111919-55	SPLP West	Solid	3010A	197199
550-133801-8	MW70M-MOQ-112019-39	SPLP West	Solid	3010A	197199
550-133801-9	DUP-02	SPLP West	Solid	3010A	197199
LB 550-197199/1-B	Method Blank	SPLP West	Solid	3010A	197199
MB 550-197279/1-A	Method Blank	Total/NA	Solid	3010A	
LCS 550-197279/2-A	Lab Control Sample	Total/NA	Solid	3010A	
LCSD 550-197279/3-A	Lab Control Sample Dup	Total/NA	Solid	3010A	
550-133801-2 MS	BAP-BOR-111919-32	SPLP West	Solid	3010A	197199
550-133801-2 MSD	BAP-BOR-111919-32	SPLP West	Solid	3010A	197199

Analysis Batch: 198136

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133801-2	BAP-BOR-111919-32	SPLP West	Solid	6010C	197279
550-133801-3	MW70M-MOQ-112119-77	SPLP West	Solid	6010C	197279
550-133801-5	MW69A-AL-111819-24	SPLP West	Solid	6010C	197279
550-133801-6	MW69A-AL-111819-44	SPLP West	Solid	6010C	197279
550-133801-7	BAP-BOR2-111919-55	SPLP West	Solid	6010C	197279
550-133801-8	MW70M-MOQ-112019-39	SPLP West	Solid	6010C	197279
550-133801-9	DUP-02	SPLP West	Solid	6010C	197279
LB 550-197199/1-B	Method Blank	SPLP West	Solid	6010C	197279
MB 550-197279/1-A	Method Blank	Total/NA	Solid	6010C	197279
LCS 550-197279/2-A	Lab Control Sample	Total/NA	Solid	6010C	197279
LCSD 550-197279/3-A	Lab Control Sample Dup	Total/NA	Solid	6010C	197279
550-133801-2 MS	BAP-BOR-111919-32	SPLP West	Solid	6010C	197279
550-133801-2 MSD	BAP-BOR-111919-32	SPLP West	Solid	6010C	197279

Analysis Batch: 198169

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133801-2	BAP-BOR-111919-32	SPLP West	Solid	6010C	197279
550-133801-3	MW70M-MOQ-112119-77	SPLP West	Solid	6010C	197279
550-133801-5	MW69A-AL-111819-24	SPLP West	Solid	6010C	197279
550-133801-6	MW69A-AL-111819-44	SPLP West	Solid	6010C	197279
550-133801-7	BAP-BOR2-111919-55	SPLP West	Solid	6010C	197279
550-133801-8	MW70M-MOQ-112019-39	SPLP West	Solid	6010C	197279
550-133801-9	DUP-02	SPLP West	Solid	6010C	197279
LB 550-197199/1-B	Method Blank	SPLP West	Solid	6010C	197279
MB 550-197279/1-A	Method Blank	Total/NA	Solid	6010C	197279
LCS 550-197279/2-A	Lab Control Sample	Total/NA	Solid	6010C	197279
LCSD 550-197279/3-A	Lab Control Sample Dup	Total/NA	Solid	6010C	197279
550-133801-2 MS	BAP-BOR-111919-32	SPLP West	Solid	6010C	197279
550-133801-2 MSD	BAP-BOR-111919-32	SPLP West	Solid	6010C	197279

Analysis Batch: 200375

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133801-2	BAP-BOR-111919-32	SPLP West	Solid	6010C	197279
550-133801-5	MW69A-AL-111819-24	SPLP West	Solid	6010C	197279
550-133801-6	MW69A-AL-111819-44	SPLP West	Solid	6010C	197279
550-133801-7	BAP-BOR2-111919-55	SPLP West	Solid	6010C	197279
550-133801-8	MW70M-MOQ-112019-39	SPLP West	Solid	6010C	197279
550-133801-9	DUP-02	SPLP West	Solid	6010C	197279

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Leaching Study-WOOD

Job ID: 550-133801-2

Metals (Continued)

Analysis Batch: 200375 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LB 550-197199/1-B	Method Blank	SPLP West	Solid	6010C	197279
MB 550-197279/1-A	Method Blank	Total/NA	Solid	6010C	197279
LCS 550-197279/2-A	Lab Control Sample	Total/NA	Solid	6010C	197279
LCSD 550-197279/3-A	Lab Control Sample Dup	Total/NA	Solid	6010C	197279
550-133801-2 MS	BAP-BOR-111919-32	SPLP West	Solid	6010C	197279
550-133801-2 MSD	BAP-BOR-111919-32	SPLP West	Solid	6010C	197279

Analysis Batch: 202772

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133801-3	MW70M-MOQ-112119-77	SPLP West	Solid	6010C	197279

Lab Chronicle

Client: Wood E&I Solutions Inc
Project/Site: APS Leaching Study-WOOD

Job ID: 550-133801-2

Client Sample ID: BAP-BOR-111919-32

Lab Sample ID: 550-133801-2

Date Collected: 11/19/19 09:51

Matrix: Solid

Date Received: 11/22/19 14:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Analysis	9056A		50	197404	12/06/19 02:35	NEL	TAL PHX
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Prep	3010A			197279	12/05/19 10:45	GJH	TAL PHX
SPLP West	Analysis	6010C		1	198136	12/16/19 17:19	ARE	TAL PHX
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Prep	3010A			197279	12/05/19 10:45	GJH	TAL PHX
SPLP West	Analysis	6010C		1	198169	12/17/19 00:34	ARE	TAL PHX
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Prep	3010A			197279	12/05/19 10:45	GJH	TAL PHX
SPLP West	Analysis	6010C		1	200375	01/15/20 21:46	ARE	TAL PHX

Client Sample ID: MW70M-MOQ-112119-77

Lab Sample ID: 550-133801-3

Date Collected: 11/21/19 15:22

Matrix: Solid

Date Received: 11/22/19 14:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Analysis	9056A		50	197404	12/06/19 03:03	NEL	TAL PHX
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Prep	3010A			197279	12/05/19 10:45	GJH	TAL PHX
SPLP West	Analysis	6010C		1	198136	12/16/19 17:21	ARE	TAL PHX
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Prep	3010A			197279	12/05/19 10:45	GJH	TAL PHX
SPLP West	Analysis	6010C		1	198169	12/17/19 00:37	ARE	TAL PHX
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Prep	3010A			197279	12/05/19 10:45	GJH	TAL PHX
SPLP West	Analysis	6010C		1	202772	02/14/20 11:10	MGM	TAL PHX

Client Sample ID: MW69A-AL-111819-24

Lab Sample ID: 550-133801-5

Date Collected: 11/18/19 11:32

Matrix: Solid

Date Received: 11/22/19 14:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Analysis	9056A		50	197404	12/06/19 03:30	NEL	TAL PHX
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Prep	3010A			197279	12/05/19 10:45	GJH	TAL PHX
SPLP West	Analysis	6010C		1	198136	12/16/19 17:24	ARE	TAL PHX
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Prep	3010A			197279	12/05/19 10:45	GJH	TAL PHX
SPLP West	Analysis	6010C		1	198169	12/17/19 00:40	ARE	TAL PHX
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Prep	3010A			197279	12/05/19 10:45	GJH	TAL PHX
SPLP West	Analysis	6010C		1	200375	01/15/20 21:49	ARE	TAL PHX

Lab Chronicle

Client: Wood E&I Solutions Inc
Project/Site: APS Leaching Study-WOOD

Job ID: 550-133801-2

Client Sample ID: MW69A-AL-111819-44

Lab Sample ID: 550-133801-6

Date Collected: 11/18/19 11:24

Matrix: Solid

Date Received: 11/22/19 14:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Analysis	9056A		50	197404	12/06/19 03:58	NEL	TAL PHX
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Prep	3010A			197279	12/05/19 10:45	GJH	TAL PHX
SPLP West	Analysis	6010C		1	198136	12/16/19 17:27	ARE	TAL PHX
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Prep	3010A			197279	12/05/19 10:45	GJH	TAL PHX
SPLP West	Analysis	6010C		1	198169	12/17/19 00:42	ARE	TAL PHX
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Prep	3010A			197279	12/05/19 10:45	GJH	TAL PHX
SPLP West	Analysis	6010C		1	200375	01/15/20 21:51	ARE	TAL PHX

Client Sample ID: BAP-BOR2-111919-55

Lab Sample ID: 550-133801-7

Date Collected: 11/19/19 13:03

Matrix: Solid

Date Received: 11/22/19 14:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Prep	3010A			197279	12/05/19 10:45	GJH	TAL PHX
SPLP West	Analysis	6010C		1	198136	12/16/19 17:30	ARE	TAL PHX
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Prep	3010A			197279	12/05/19 10:45	GJH	TAL PHX
SPLP West	Analysis	6010C		1	198169	12/17/19 00:45	ARE	TAL PHX
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Prep	3010A			197279	12/05/19 10:45	GJH	TAL PHX
SPLP West	Analysis	6010C		1	200375	01/15/20 21:54	ARE	TAL PHX

Client Sample ID: MW70M-MOQ-112019-39

Lab Sample ID: 550-133801-8

Date Collected: 11/20/19 15:55

Matrix: Solid

Date Received: 11/22/19 14:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Analysis	9056A		50	197404	12/06/19 05:47	NEL	TAL PHX
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Prep	3010A			197279	12/05/19 10:45	GJH	TAL PHX
SPLP West	Analysis	6010C		1	198136	12/16/19 17:33	ARE	TAL PHX
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Prep	3010A			197279	12/05/19 10:45	GJH	TAL PHX
SPLP West	Analysis	6010C		1	198169	12/17/19 00:48	ARE	TAL PHX
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Prep	3010A			197279	12/05/19 10:45	GJH	TAL PHX
SPLP West	Analysis	6010C		1	200375	01/15/20 21:57	ARE	TAL PHX

Lab Chronicle

Client: Wood E&I Solutions Inc
Project/Site: APS Leaching Study-WOOD

Job ID: 550-133801-2

Client Sample ID: DUP-02

Date Collected: 11/20/19 16:40

Date Received: 11/22/19 14:53

Lab Sample ID: 550-133801-9

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Analysis	9056A		50	197403	12/06/19 04:35	NEL	TAL PHX
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Prep	3010A			197279	12/05/19 10:45	GJH	TAL PHX
SPLP West	Analysis	6010C		1	198136	12/16/19 17:36	ARE	TAL PHX
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Prep	3010A			197279	12/05/19 10:45	GJH	TAL PHX
SPLP West	Analysis	6010C		1	198169	12/17/19 00:51	ARE	TAL PHX
SPLP West	Leach	1312			197199	12/04/19 16:46	GJH	TAL PHX
SPLP West	Prep	3010A			197279	12/05/19 10:45	GJH	TAL PHX
SPLP West	Analysis	6010C		1	200375	01/15/20 22:00	ARE	TAL PHX

Laboratory References:

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Leaching Study-WOOD

Job ID: 550-133801-2

Laboratory: Eurofins TestAmerica, Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Arizona	State Program	AZ0728	06-09-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
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Method Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Leaching Study-WOOD

Job ID: 550-133801-2

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL PHX
6010C	Metals (ICP)	SW846	TAL PHX
1312	SPLP Extraction	SW846	TAL PHX
3010A	Preparation, Total Metals	SW846	TAL PHX

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Chain of Custody Record

372382



Environment TestAmerica

Address:

133801

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TAL-3210

Client Contact		Project Manager: EMILY WIDOLCE		Site Contact: KEN BAKER		Date:		COC No:		Sampler:	
Company Name: W 000		Tel/Email:		Lab Contact:		Carrier:		of		COCs	
Address:		Analysis Turnaround Time		Filtered Sample (Y / N)		Perform MS / MSD (Y / N)		For Lab Use Only:		Walk-in Client:	
City/State/Zip:		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS		6010C		9056A504		SPLP-9056A504		Lab Sampling:	
Phone:		TAT if different from Below		6010C		SPLP-6010C		BAP H2O - 6010C		Job / SDG No.:	
Fax:		2 weeks		6010C		SPLP-6010C		BAP H2O - 9056A		Sample Specific Notes:	
Project Name:		1 week		6010C		SPLP-6010C		BAP H2O - 9056A			
Site: ADS CHEM PLANT		2 days		6010C		SPLP-6010C		BAP H2O - 9056A			
PO #		1 day		6010C		SPLP-6010C		BAP H2O - 9056A			
Sample Identification		Sample Date	Sample Time	Sample Type (C-Comp, G-Grab)	Matrix	# of Cont.					
-01	BAP-BOR-111919-10	11-19-19	0933	G		2					
-02	BAP-BOR-111919-32	11-19-19	0951	G		4					
-03	MW-TDM-MDQ-112119-77	11-21-19	1522	G		6					
-04	BAP-BOR2-111919-60	11-19-19	1415	G		4					
-05	MW-69A-A1-111819-24	11-18-19	1132	G		6					
-06	MW-69A-A1-111819-4	11-18-19	1124	G		6					
-07	BAP-BOR2-111919-55	11-19-19	1303	G		6					
-08	MW-TDM-MDQ-112019-39	11-20-19	1555	G		6					
-09	DUP-02	11-20-19	1640	G		6					

550-133801 Chain of Custody

Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Special Instructions/QC Requirements & Comments:

Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Return to Client ☐ Disposal by Lab ☐ Archive for Months

Custody Seals Intact: ☐ Yes ☐ No

Custody Seal No.: **42117282**

Relinquished by: **W 000** Date/Time: **11-21-19 17:05** Received by: **W 000** Date/Time: **11-21-19 17:05**

Relinquished by: **W 000** Date/Time: **11-22-19 14:53** Received by: **W 000** Date/Time: **11-22-19 14:53**

Relinquished by: **W 000** Date/Time: **11-22-19 14:53** Received by: **W 000** Date/Time: **11-22-19 14:53**

Login Sample Receipt Checklist

Client: Wood E&I Solutions Inc

Job Number: 550-133801-2

Login Number: 133801

List Source: Eurofins TestAmerica, Phoenix

List Number: 1

Creator: Gravlin, Andrea

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

Eurofins TestAmerica, Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-133888-1

Laboratory Sample Delivery Group: APS CHOLLA
Client Project/Site: APS CHOLLA HYDRO INV.

For:

Wood E&I Solutions Inc
4600 E. Washington St
6th Floor
Phoenix, Arizona 85034

Attn: Emily LoDolce



Authorized for release by:
1/16/2020 7:19:55 AM

Ken Baker, Project Manager II
(602)659-7624
ken.baker@testamericainc.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Sample Summary	5
Detection Summary	6
Client Sample Results	7
QC Sample Results	8
QC Association Summary	13
Lab Chronicle	15
Certification Summary	16
Method Summary	17
Chain of Custody	18
Receipt Checklists	19



Definitions/Glossary

Client: Wood E&I Solutions Inc
Project/Site: APS CHOLLA HYDRO INV.

Job ID: 550-133888-1
SDG: APS CHOLLA

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D2	Sample required dilution due to high concentration of analyte.
E2	Concentration estimated. Analyte exceeded calibration range. Reanalysis not performed due to sample matrix.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.

Metals

Qualifier	Qualifier Description
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Wood E&I Solutions Inc
Project/Site: APS CHOLLA HYDRO INV.

Job ID: 550-133888-1
SDG: APS CHOLLA

Job ID: 550-133888-1

Laboratory: Eurofins TestAmerica, Phoenix

Narrative

Job Narrative
550-133888-1

Comments

No additional comments.

Receipt

The sample was received on 11/25/2019 10:16 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.0° C.

HPLC/IC

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Wood E&I Solutions Inc
Project/Site: APS CHOLLA HYDRO INV.

Job ID: 550-133888-1
SDG: APS CHOLLA

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
550-133888-1	MW70M-112219	Water	11/22/19 13:48	11/25/19 10:16	

Detection Summary

Client: Wood E&I Solutions Inc
Project/Site: APS CHOLLA HYDRO INV.

Job ID: 550-133888-1
SDG: APS CHOLLA

Client Sample ID: MW70M-112219

Lab Sample ID: 550-133888-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2400	D2	100		mg/L	50		9056A	Total/NA
Sulfate	2600	D2	100		mg/L	50		9056A	Total/NA
Boron	1.8		0.050		mg/L	1		6010C	Total/NA
Calcium	680	M3	2.0		mg/L	1		6010C	Total/NA
Cobalt	0.019		0.010		mg/L	1		6010C	Total/NA
Lithium	0.20		0.20		mg/L	1		6010C	Total/NA
Magnesium	160	M3	2.0		mg/L	1		6010C	Total/NA
Sodium	1400	M3	0.50		mg/L	1		6010C	Total/NA
Alkalinity as CaCO3	84		6.0		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	84		6.0		mg/L	1		SM 2320B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS CHOLLA HYDRO INV.

Job ID: 550-133888-1
SDG: APS CHOLLA

Client Sample ID: MW70M-112219

Lab Sample ID: 550-133888-1

Date Collected: 11/22/19 13:48

Matrix: Water

Date Received: 11/25/19 10:16

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2400	D2	100		mg/L			12/05/19 22:19	50
Sulfate	2600	D2	100		mg/L			12/05/19 22:19	50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.10		mg/L		12/03/19 17:28	12/18/19 22:23	1
Boron	1.8		0.050		mg/L		12/03/19 17:28	12/18/19 22:23	1
Calcium	680	M3	2.0		mg/L		12/03/19 17:28	12/18/19 22:23	1
Chromium	ND		0.010		mg/L		12/03/19 17:28	12/18/19 22:23	1
Cobalt	0.019		0.010		mg/L		12/03/19 17:28	12/18/19 22:23	1
Iron	ND		0.10		mg/L		12/03/19 17:28	12/21/19 16:55	1
Lithium	0.20		0.20		mg/L		12/03/19 17:28	12/18/19 22:23	1
Magnesium	160	M3	2.0		mg/L		12/03/19 17:28	12/05/19 05:47	1
Sodium	1400	M3	0.50		mg/L		01/08/20 11:05	01/10/20 09:42	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	84		6.0		mg/L			11/29/19 20:59	1
Bicarbonate Alkalinity as CaCO3	84		6.0		mg/L			11/29/19 20:59	1

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS CHOLLA HYDRO INV.

Job ID: 550-133888-1
SDG: APS CHOLLA

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 550-197405/2

Matrix: Water

Analysis Batch: 197405

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0		mg/L			12/05/19 18:38	1
Sulfate	ND		2.0		mg/L			12/05/19 18:38	1

Lab Sample ID: LCS 550-197405/5

Matrix: Water

Analysis Batch: 197405

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	21.5		mg/L		107	80 - 120
Sulfate	20.0	20.8		mg/L		104	80 - 120

Lab Sample ID: LCSD 550-197405/6

Matrix: Water

Analysis Batch: 197405

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	21.5		mg/L		108	80 - 120	0	20
Sulfate	20.0	20.8		mg/L		104	80 - 120	0	20

Lab Sample ID: 550-134356-A-6 MS

Matrix: Water

Analysis Batch: 197405

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	140	E2 M3	20.0	151	E2 M3	mg/L		46	80 - 120
Sulfate	180	E2 M3	20.0	189	E2 M3	mg/L		39	80 - 120

Lab Sample ID: 550-134356-A-6 MSD

Matrix: Water

Analysis Batch: 197405

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	140	E2 M3	20.0	151	E2 M3	mg/L		47	80 - 120	0	20
Sulfate	180	E2 M3	20.0	189	E2 M3	mg/L		39	80 - 120	0	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 550-197132/1-A

Matrix: Water

Analysis Batch: 197305

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 197132

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	ND		2.0		mg/L		12/03/19 17:28	12/05/19 05:28	1

Lab Sample ID: MB 550-197132/1-A

Matrix: Water

Analysis Batch: 198452

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 197132

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.10		mg/L		12/03/19 17:28	12/18/19 22:03	1

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS CHOLLA HYDRO INV.

Job ID: 550-133888-1
SDG: APS CHOLLA

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 550-197132/1-A

Matrix: Water

Analysis Batch: 198452

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 197132

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.050		mg/L		12/03/19 17:28	12/18/19 22:03	1
Calcium	ND		2.0		mg/L		12/03/19 17:28	12/18/19 22:03	1
Chromium	ND		0.010		mg/L		12/03/19 17:28	12/18/19 22:03	1
Cobalt	ND		0.010		mg/L		12/03/19 17:28	12/18/19 22:03	1
Lithium	ND		0.20		mg/L		12/03/19 17:28	12/18/19 22:03	1

Lab Sample ID: MB 550-197132/1-A

Matrix: Water

Analysis Batch: 198745

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 197132

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND		0.10		mg/L		12/03/19 17:28	12/21/19 16:36	1

Lab Sample ID: LCS 550-197132/2-A

Matrix: Water

Analysis Batch: 197305

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 197132

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Magnesium	21.0	22.4		mg/L		107	89 - 110

Lab Sample ID: LCS 550-197132/2-A

Matrix: Water

Analysis Batch: 198452

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 197132

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1.00	0.981		mg/L		98	90 - 110
Boron	1.00	0.980		mg/L		98	88 - 110
Calcium	21.0	21.3		mg/L		101	88 - 112
Chromium	1.00	0.998		mg/L		100	90 - 110
Cobalt	1.00	1.00		mg/L		100	90 - 112
Lithium	1.00	1.03		mg/L		103	82 - 113

Lab Sample ID: LCS 550-197132/2-A

Matrix: Water

Analysis Batch: 198745

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 197132

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	1.00	0.931		mg/L		93	85 - 112

Lab Sample ID: LCSD 550-197132/3-A

Matrix: Water

Analysis Batch: 197305

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 197132

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Magnesium	21.0	22.2		mg/L		106	89 - 110	1	20

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS CHOLLA HYDRO INV.

Job ID: 550-133888-1
SDG: APS CHOLLA

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCSD 550-197132/3-A

Matrix: Water

Analysis Batch: 198452

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 197132

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	1.00	0.961		mg/L		96	90 - 110	2	20
Boron	1.00	0.968		mg/L		97	88 - 110	1	20
Calcium	21.0	20.9		mg/L		100	88 - 112	2	20
Chromium	1.00	0.982		mg/L		98	90 - 110	2	20
Cobalt	1.00	0.985		mg/L		98	90 - 112	2	20
Lithium	1.00	1.01		mg/L		101	82 - 113	2	20

Lab Sample ID: LCSD 550-197132/3-A

Matrix: Water

Analysis Batch: 198745

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 197132

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	1.00	0.908		mg/L		91	85 - 112	2	20

Lab Sample ID: 550-133888-1 MS

Matrix: Water

Analysis Batch: 197305

Client Sample ID: MW70M-112219

Prep Type: Total/NA

Prep Batch: 197132

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Magnesium	160	M3	21.0	177	M3	mg/L		80	75 - 125

Lab Sample ID: 550-133888-1 MS

Matrix: Water

Analysis Batch: 198452

Client Sample ID: MW70M-112219

Prep Type: Total/NA

Prep Batch: 197132

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	ND		1.00	1.04		mg/L		104	75 - 125
Boron	1.8		1.00	2.76		mg/L		96	75 - 125
Calcium	680	M3	21.0	681	M3	mg/L		-14	75 - 125
Chromium	ND		1.00	0.942		mg/L		94	75 - 125
Cobalt	0.019		1.00	0.931		mg/L		91	75 - 125
Lithium	0.20		1.00	1.24		mg/L		105	75 - 125

Lab Sample ID: 550-133888-1 MS

Matrix: Water

Analysis Batch: 198745

Client Sample ID: MW70M-112219

Prep Type: Total/NA

Prep Batch: 197132

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	ND		1.00	0.861		mg/L		86	75 - 125

Lab Sample ID: 550-133888-1 MSD

Matrix: Water

Analysis Batch: 197305

Client Sample ID: MW70M-112219

Prep Type: Total/NA

Prep Batch: 197132

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Magnesium	160	M3	21.0	171	M3	mg/L		54	75 - 125	3	20

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS CHOLLA HYDRO INV.

Job ID: 550-133888-1
SDG: APS CHOLLA

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 550-133888-1 MSD

Matrix: Water

Analysis Batch: 198452

Client Sample ID: MW70M-112219

Prep Type: Total/NA

Prep Batch: 197132

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND		1.00	1.04		mg/L		104	75 - 125	0	20
Boron	1.8		1.00	2.74		mg/L		95	75 - 125	1	20
Calcium	680	M3	21.0	665	M3	mg/L		-90	75 - 125	2	20
Chromium	ND		1.00	0.946		mg/L		95	75 - 125	0	20
Cobalt	0.019		1.00	0.930		mg/L		91	75 - 125	0	20
Lithium	0.20		1.00	1.24		mg/L		104	75 - 125	0	20

Lab Sample ID: 550-133888-1 MSD

Matrix: Water

Analysis Batch: 198745

Client Sample ID: MW70M-112219

Prep Type: Total/NA

Prep Batch: 197132

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	ND		1.00	0.910		mg/L		91	75 - 125	6	20

Lab Sample ID: MB 550-199651/1-A

Matrix: Water

Analysis Batch: 199887

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 199651

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	ND		0.50		mg/L		01/08/20 11:05	01/10/20 09:23	1

Lab Sample ID: LCS 550-199651/2-A

Matrix: Water

Analysis Batch: 199887

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 199651

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sodium	20.0	19.2		mg/L		96	84 - 110

Lab Sample ID: LCSD 550-199651/3-A

Matrix: Water

Analysis Batch: 199887

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 199651

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sodium	20.0	18.7		mg/L		93	84 - 110	3	20

Lab Sample ID: 550-133888-1 MS

Matrix: Water

Analysis Batch: 199887

Client Sample ID: MW70M-112219

Prep Type: Total/NA

Prep Batch: 199651

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sodium	1400	M3	20.0	1410	M3	mg/L		-171	75 - 125

Lab Sample ID: 550-133888-1 MSD

Matrix: Water

Analysis Batch: 199887

Client Sample ID: MW70M-112219

Prep Type: Total/NA

Prep Batch: 199651

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sodium	1400	M3	20.0	1430	M3	mg/L		-101	75 - 125	1	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS CHOLLA HYDRO INV.

Job ID: 550-133888-1
SDG: APS CHOLLA

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 550-196922/6

Matrix: Water

Analysis Batch: 196922

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	ND		6.0		mg/L			11/29/19 19:35	1
Bicarbonate Alkalinity as CaCO3	ND		6.0		mg/L			11/29/19 19:35	1

Lab Sample ID: LCS 550-196922/5

Matrix: Water

Analysis Batch: 196922

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity as CaCO3	250	247		mg/L		99	90 - 110

Lab Sample ID: LCSD 550-196922/19

Matrix: Water

Analysis Batch: 196922

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity as CaCO3	250	247		mg/L		99	90 - 110	0	20

Lab Sample ID: 550-133888-1 DU

Matrix: Water

Analysis Batch: 196922

Client Sample ID: MW70M-112219

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity as CaCO3	84		82.4		mg/L		2	20
Bicarbonate Alkalinity as CaCO3	84		82.4		mg/L		2	20

QC Association Summary

Client: Wood E&I Solutions Inc
Project/Site: APS CHOLLA HYDRO INV.

Job ID: 550-133888-1
SDG: APS CHOLLA

HPLC/IC

Analysis Batch: 197405

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133888-1	MW70M-112219	Total/NA	Water	9056A	
MB 550-197405/2	Method Blank	Total/NA	Water	9056A	
LCS 550-197405/5	Lab Control Sample	Total/NA	Water	9056A	
LCSD 550-197405/6	Lab Control Sample Dup	Total/NA	Water	9056A	
550-134356-A-6 MS	Matrix Spike	Total/NA	Water	9056A	
550-134356-A-6 MSD	Matrix Spike Duplicate	Total/NA	Water	9056A	

Metals

Prep Batch: 197132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133888-1	MW70M-112219	Total/NA	Water	3005A	
MB 550-197132/1-A	Method Blank	Total/NA	Water	3005A	
LCS 550-197132/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 550-197132/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	
550-133888-1 MS	MW70M-112219	Total/NA	Water	3005A	
550-133888-1 MSD	MW70M-112219	Total/NA	Water	3005A	

Analysis Batch: 197305

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133888-1	MW70M-112219	Total/NA	Water	6010C	197132
MB 550-197132/1-A	Method Blank	Total/NA	Water	6010C	197132
LCS 550-197132/2-A	Lab Control Sample	Total/NA	Water	6010C	197132
LCSD 550-197132/3-A	Lab Control Sample Dup	Total/NA	Water	6010C	197132
550-133888-1 MS	MW70M-112219	Total/NA	Water	6010C	197132
550-133888-1 MSD	MW70M-112219	Total/NA	Water	6010C	197132

Analysis Batch: 198452

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133888-1	MW70M-112219	Total/NA	Water	6010C	197132
MB 550-197132/1-A	Method Blank	Total/NA	Water	6010C	197132
LCS 550-197132/2-A	Lab Control Sample	Total/NA	Water	6010C	197132
LCSD 550-197132/3-A	Lab Control Sample Dup	Total/NA	Water	6010C	197132
550-133888-1 MS	MW70M-112219	Total/NA	Water	6010C	197132
550-133888-1 MSD	MW70M-112219	Total/NA	Water	6010C	197132

Analysis Batch: 198745

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133888-1	MW70M-112219	Total/NA	Water	6010C	197132
MB 550-197132/1-A	Method Blank	Total/NA	Water	6010C	197132
LCS 550-197132/2-A	Lab Control Sample	Total/NA	Water	6010C	197132
LCSD 550-197132/3-A	Lab Control Sample Dup	Total/NA	Water	6010C	197132
550-133888-1 MS	MW70M-112219	Total/NA	Water	6010C	197132
550-133888-1 MSD	MW70M-112219	Total/NA	Water	6010C	197132

Prep Batch: 199651

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133888-1	MW70M-112219	Total/NA	Water	3005A	
MB 550-199651/1-A	Method Blank	Total/NA	Water	3005A	
LCS 550-199651/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 550-199651/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Wood E&I Solutions Inc
Project/Site: APS CHOLLA HYDRO INV.

Job ID: 550-133888-1
SDG: APS CHOLLA

Metals (Continued)

Prep Batch: 199651 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133888-1 MS	MW70M-112219	Total/NA	Water	3005A	
550-133888-1 MSD	MW70M-112219	Total/NA	Water	3005A	

Analysis Batch: 199887

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133888-1	MW70M-112219	Total/NA	Water	6010C	199651
MB 550-199651/1-A	Method Blank	Total/NA	Water	6010C	199651
LCS 550-199651/2-A	Lab Control Sample	Total/NA	Water	6010C	199651
LCSD 550-199651/3-A	Lab Control Sample Dup	Total/NA	Water	6010C	199651
550-133888-1 MS	MW70M-112219	Total/NA	Water	6010C	199651
550-133888-1 MSD	MW70M-112219	Total/NA	Water	6010C	199651

General Chemistry

Analysis Batch: 196922

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-133888-1	MW70M-112219	Total/NA	Water	SM 2320B	
MB 550-196922/6	Method Blank	Total/NA	Water	SM 2320B	
LCS 550-196922/5	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 550-196922/19	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
550-133888-1 DU	MW70M-112219	Total/NA	Water	SM 2320B	

Lab Chronicle

Client: Wood E&I Solutions Inc
Project/Site: APS CHOLLA HYDRO INV.

Job ID: 550-133888-1
SDG: APS CHOLLA

Client Sample ID: MW70M-112219

Lab Sample ID: 550-133888-1

Date Collected: 11/22/19 13:48

Matrix: Water

Date Received: 11/25/19 10:16

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		50	197405	12/05/19 22:19	NEL	TAL PHX
Total/NA	Prep	3005A			197132	12/03/19 17:28	MGM	TAL PHX
Total/NA	Analysis	6010C		1	197305	12/05/19 05:47	SRA	TAL PHX
Total/NA	Prep	3005A			197132	12/03/19 17:28	MGM	TAL PHX
Total/NA	Analysis	6010C		1	198452	12/18/19 22:23	SRA	TAL PHX
Total/NA	Prep	3005A			197132	12/03/19 17:28	MGM	TAL PHX
Total/NA	Analysis	6010C		1	198745	12/21/19 16:55	SRA	TAL PHX
Total/NA	Prep	3005A			199651	01/08/20 11:05	SGO	TAL PHX
Total/NA	Analysis	6010C		1	199887	01/10/20 09:42	MGM	TAL PHX
Total/NA	Analysis	SM 2320B		1	196922	11/29/19 20:59	RLS	TAL PHX

Laboratory References:

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Wood E&I Solutions Inc
Project/Site: APS CHOLLA HYDRO INV.

Job ID: 550-133888-1
SDG: APS CHOLLA

Laboratory: Eurofins TestAmerica, Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Arizona	State Program	AZ0728	06-09-20
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte

Method Summary

Client: Wood E&I Solutions Inc
Project/Site: APS CHOLLA HYDRO INV.

Job ID: 550-133888-1
SDG: APS CHOLLA

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL PHX
6010C	Metals (ICP)	SW846	TAL PHX
SM 2320B	Alkalinity	SM	TAL PHX
3005A	Preparation, Total Metals	SW846	TAL PHX

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Login Sample Receipt Checklist

Client: Wood E&I Solutions Inc

Job Number: 550-133888-1

SDG Number: APS CHOLLA

Login Number: 133888

List Number: 1

Creator: Maycock, Lisa

List Source: Eurofins TestAmerica, Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

ANALYTICAL REPORT

Eurofins TestAmerica, Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-134181-1

Client Project/Site: APS Cholla BAP SW Samples
Revision: 1

For:

Wood E&I Solutions Inc
4600 E. Washington St
6th Floor
Phoenix, Arizona 85034

Attn: Emily LoDolce



Authorized for release by:
2/25/2020 9:25:06 AM

Ken Baker, Project Manager II
(602)659-7624
ken.baker@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Sample Summary	5
Detection Summary	6
Client Sample Results	10
QC Sample Results	16
QC Association Summary	23
Lab Chronicle	27
Certification Summary	31
Method Summary	32
Chain of Custody	33
Receipt Checklists	36



Definitions/Glossary

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-1

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D2	Sample required dilution due to high concentration of analyte.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
M2	Matrix spike recovery was low, the associated blank spike recovery was acceptable.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.

Metals

Qualifier	Qualifier Description
D2	Sample required dilution due to high concentration of analyte.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above MDL.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated blank spike was acceptable.

General Chemistry

Qualifier	Qualifier Description
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.
H5	This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-1

Job ID: 550-134181-1

Laboratory: Eurofins TestAmerica, Phoenix

Narrative

Job Narrative 550-134181-1

Comments

This report contains the additional metals.

Receipt

The samples were received on 12/3/2019 9:55 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 4.3° C, 9.9° C, 12.4° C and 12.9° C.

Receipt Exceptions

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed.

Sample #9 and #10 are soil samples. No methods are logged in for these 2 samples.

Please add the 6010 method needed for these samples, method chain has 3 different 6010 methods.

Sample #10 needs ORP added to the project and to the login.

The following samples were received at the laboratory outside the required temperature criteria: BAP-01-120219-1 (550-134181-1), BAP-01-120219-5 (550-134181-2), BAP-01-120219-9 (550-134181-3), BAP-02-120219-0.5 (550-134181-4), BAP-02-120219-1 (550-134181-5), BAP-02-120219-1.5 (550-134181-6), DUP-02-120219 (550-134181-7), BAP-INF-120219-SED (550-134181-9) and BAP-INF-120219-SILT (550-134181-10). There was no cooling media present in the cooler. The client was contacted regarding this issue, and the laboratory was instructed to <CHOOSE_ONE> proceed with/cancel analysis

HPLC/IC

Method 9056A: A sample duplicate (DU) was not prepared for Chloride and Sulfate by method EPA 9056A associated with analytical batch 550-197803 due to an analyst error. A matrix spike duplicate (MSD) was prepared in lieu of the DU which may be used to satisfy the method QC requirements and to verify batch precision. As such, these data have been reported.

BAP-01-120219-1 (550-134181-1), BAP-01-120219-5 (550-134181-2), BAP-01-120219-9 (550-134181-3), BAP-02-120219-0.5 (550-134181-4), BAP-02-120219-1 (550-134181-5), BAP-02-120219-1.5 (550-134181-6), DUP-02-120219 (550-134181-7), BAP-INF-120219 (550-134181-8), PS-S-120219 (550-134181-11), PS-01-120219 (550-134181-12) and PS-02-120219 (550-134181-13)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method 6010C: The following sample was diluted to bring the concentration of target analytes within the calibration range: BAP-INF-120219-SED (550-134181-9). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
550-134181-1	BAP-01-120219-1	Water	12/02/19 10:45	12/03/19 09:55	
550-134181-2	BAP-01-120219-5	Water	12/02/19 10:50	12/03/19 09:55	
550-134181-3	BAP-01-120219-9	Water	12/02/19 10:55	12/03/19 09:55	
550-134181-4	BAP-02-120219-0.5	Water	12/02/19 11:30	12/03/19 09:55	
550-134181-5	BAP-02-120219-1	Water	12/02/19 11:35	12/03/19 09:55	
550-134181-6	BAP-02-120219-1.5	Water	12/02/19 11:40	12/03/19 09:55	
550-134181-7	DUP-02-120219	Water	12/02/19 11:45	12/03/19 09:55	
550-134181-8	BAP-INF-120219	Water	12/02/19 12:55	12/03/19 09:55	
550-134181-9	BAP-INF-120219-SED	Solid	12/02/19 13:10	12/03/19 09:55	
550-134181-10	BAP-INF-120219-SILT	Solid	12/02/19 13:20	12/03/19 09:55	
550-134181-11	PS-S-120219	Water	12/02/19 13:50	12/03/19 09:55	
550-134181-12	PS-01-120219	Water	12/02/19 13:55	12/03/19 09:55	
550-134181-13	PS-02-120219	Water	12/02/19 14:00	12/03/19 09:55	

Detection Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-1

Client Sample ID: BAP-01-120219-1

Lab Sample ID: 550-134181-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2000	D2	100	26	mg/L	50		9056A	Total/NA
Sulfate	2800	D2	100	21	mg/L	50		9056A	Total/NA
Arsenic	0.023	E4	0.10	0.015	mg/L	1		6010C	Total/NA
Boron	3.2		0.050	0.042	mg/L	1		6010C	Total/NA
Calcium	500		2.0	0.064	mg/L	1		6010C	Total/NA
Cobalt	0.0016	E4	0.010	0.0015	mg/L	1		6010C	Total/NA
Lithium	0.16	E4	0.20	0.018	mg/L	1		6010C	Total/NA
Magnesium	290		2.0	0.039	mg/L	1		6010C	Total/NA
Sodium	1300		0.50	0.45	mg/L	1		6010C	Total/NA
Alkalinity as CaCO3	120		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	120		6.0	6.0	mg/L	1		SM 2320B	Total/NA

Client Sample ID: BAP-01-120219-5

Lab Sample ID: 550-134181-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2000	D2	100	26	mg/L	50		9056A	Total/NA
Sulfate	2800	D2	100	21	mg/L	50		9056A	Total/NA
Arsenic	0.017	E4	0.10	0.015	mg/L	1		6010C	Total/NA
Boron	3.3		0.050	0.042	mg/L	1		6010C	Total/NA
Calcium	510		2.0	0.064	mg/L	1		6010C	Total/NA
Cobalt	0.0018	E4	0.010	0.0015	mg/L	1		6010C	Total/NA
Lithium	0.16	E4	0.20	0.018	mg/L	1		6010C	Total/NA
Magnesium	300		2.0	0.039	mg/L	1		6010C	Total/NA
Sodium	1400		0.50	0.45	mg/L	1		6010C	Total/NA
Alkalinity as CaCO3	120		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	120		6.0	6.0	mg/L	1		SM 2320B	Total/NA

Client Sample ID: BAP-01-120219-9

Lab Sample ID: 550-134181-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2100	D2	100	26	mg/L	50		9056A	Total/NA
Sulfate	2900	D2	100	21	mg/L	50		9056A	Total/NA
Arsenic	0.023	E4	0.10	0.015	mg/L	1		6010C	Total/NA
Boron	3.2		0.050	0.042	mg/L	1		6010C	Total/NA
Calcium	500		2.0	0.064	mg/L	1		6010C	Total/NA
Cobalt	0.0019	E4	0.010	0.0015	mg/L	1		6010C	Total/NA
Lithium	0.16	E4	0.20	0.018	mg/L	1		6010C	Total/NA
Magnesium	290		2.0	0.039	mg/L	1		6010C	Total/NA
Sodium	1400		0.50	0.45	mg/L	1		6010C	Total/NA
Alkalinity as CaCO3	120		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	120		6.0	6.0	mg/L	1		SM 2320B	Total/NA

Client Sample ID: BAP-02-120219-0.5

Lab Sample ID: 550-134181-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2000	D2	100	26	mg/L	50		9056A	Total/NA
Sulfate	2800	D2	100	21	mg/L	50		9056A	Total/NA
Arsenic	0.020	E4	0.10	0.015	mg/L	1		6010C	Total/NA
Boron	3.1		0.050	0.042	mg/L	1		6010C	Total/NA
Calcium	480		2.0	0.064	mg/L	1		6010C	Total/NA
Cobalt	0.0015	E4	0.010	0.0015	mg/L	1		6010C	Total/NA
Lithium	0.15	E4	0.20	0.018	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-1

Client Sample ID: BAP-02-120219-0.5 (Continued)

Lab Sample ID: 550-134181-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Magnesium	290		2.0	0.039	mg/L	1		6010C	Total/NA
Sodium	1400		0.50	0.45	mg/L	1		6010C	Total/NA
Alkalinity as CaCO3	120		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	120		6.0	6.0	mg/L	1		SM 2320B	Total/NA

Client Sample ID: BAP-02-120219-1

Lab Sample ID: 550-134181-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2000	D2	100	26	mg/L	50		9056A	Total/NA
Sulfate	2800	D2	100	21	mg/L	50		9056A	Total/NA
Arsenic	0.021	E4	0.10	0.015	mg/L	1		6010C	Total/NA
Boron	3.2		0.050	0.042	mg/L	1		6010C	Total/NA
Calcium	500		2.0	0.064	mg/L	1		6010C	Total/NA
Cobalt	0.0017	E4	0.010	0.0015	mg/L	1		6010C	Total/NA
Lithium	0.16	E4	0.20	0.018	mg/L	1		6010C	Total/NA
Magnesium	300		2.0	0.039	mg/L	1		6010C	Total/NA
Sodium	1400		0.50	0.45	mg/L	1		6010C	Total/NA
Alkalinity as CaCO3	120		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	120		6.0	6.0	mg/L	1		SM 2320B	Total/NA

Client Sample ID: BAP-02-120219-1.5

Lab Sample ID: 550-134181-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2000	D2	100	26	mg/L	50		9056A	Total/NA
Sulfate	2800	D2	100	21	mg/L	50		9056A	Total/NA
Arsenic	0.022	E4	0.10	0.015	mg/L	1		6010C	Total/NA
Boron	3.2		0.050	0.042	mg/L	1		6010C	Total/NA
Calcium	500		2.0	0.064	mg/L	1		6010C	Total/NA
Cobalt	0.0016	E4	0.010	0.0015	mg/L	1		6010C	Total/NA
Lithium	0.16	E4	0.20	0.018	mg/L	1		6010C	Total/NA
Magnesium	300		2.0	0.039	mg/L	1		6010C	Total/NA
Sodium	1400		0.50	0.45	mg/L	1		6010C	Total/NA
Alkalinity as CaCO3	130		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	130		6.0	6.0	mg/L	1		SM 2320B	Total/NA

Client Sample ID: DUP-02-120219

Lab Sample ID: 550-134181-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2000	D2	100	26	mg/L	50		9056A	Total/NA
Sulfate	2800	D2	100	21	mg/L	50		9056A	Total/NA
Arsenic	0.024	E4	0.10	0.015	mg/L	1		6010C	Total/NA
Boron	3.2		0.050	0.042	mg/L	1		6010C	Total/NA
Calcium	500		2.0	0.064	mg/L	1		6010C	Total/NA
Cobalt	0.0018	E4	0.010	0.0015	mg/L	1		6010C	Total/NA
Lithium	0.16	E4	0.20	0.018	mg/L	1		6010C	Total/NA
Magnesium	300		2.0	0.039	mg/L	1		6010C	Total/NA
Sodium	1400		0.50	0.45	mg/L	1		6010C	Total/NA
Alkalinity as CaCO3	130		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	130		6.0	6.0	mg/L	1		SM 2320B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-1

Client Sample ID: BAP-INF-120219

Lab Sample ID: 550-134181-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2200	D2	100	26	mg/L	50		9056A	Total/NA
Sulfate	3100	D2	100	21	mg/L	50		9056A	Total/NA
Arsenic	0.021	E4	0.10	0.015	mg/L	1		6010C	Total/NA
Boron	3.0		0.050	0.042	mg/L	1		6010C	Total/NA
Calcium	500		2.0	0.064	mg/L	1		6010C	Total/NA
Chromium	0.0030	E4	0.010	0.0027	mg/L	1		6010C	Total/NA
Cobalt	0.0053	E4	0.010	0.0015	mg/L	1		6010C	Total/NA
Lithium	0.16	E4	0.20	0.018	mg/L	1		6010C	Total/NA
Magnesium	310		2.0	0.039	mg/L	1		6010C	Total/NA
Sodium	1500		0.50	0.45	mg/L	1		6010C	Total/NA
Alkalinity as CaCO3	110		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	110		6.0	6.0	mg/L	1		SM 2320B	Total/NA

Client Sample ID: BAP-INF-120219-SED

Lab Sample ID: 550-134181-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	14		9.8	0.66	mg/Kg	1		6010C	Total/NA
Chromium	2.0		2.0	0.64	mg/Kg	1		6010C	Total/NA
Cobalt	1.3	E4	2.0	0.092	mg/Kg	1		6010C	Total/NA
Iron	32000	D2	49	32	mg/Kg	5		6010C	Total/NA
Lithium	2.2	E4	24	2.0	mg/Kg	1		6010C	Total/NA

Client Sample ID: BAP-INF-120219-SILT

Lab Sample ID: 550-134181-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	30		9.8	0.66	mg/Kg	1		6010C	Total/NA
Chromium	2.7		2.0	0.64	mg/Kg	1		6010C	Total/NA
Cobalt	1.5	E4	2.0	0.092	mg/Kg	1		6010C	Total/NA
Iron	8200		9.8	6.3	mg/Kg	1		6010C	Total/NA
Lithium	3.2	E4	24	2.0	mg/Kg	1		6010C	Total/NA
Oxidation Reduction Potential	370	H5	0.10	0.10	millivolts	1		SM 2580B	Soluble

Client Sample ID: PS-S-120219

Lab Sample ID: 550-134181-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2400	D2	100	26	mg/L	50		9056A	Total/NA
Sulfate	3000	D2	100	21	mg/L	50		9056A	Total/NA
Boron	3.5		0.050	0.042	mg/L	1		6010C	Total/NA
Calcium	630		2.0	0.064	mg/L	1		6010C	Total/NA
Cobalt	0.019		0.010	0.0015	mg/L	1		6010C	Total/NA
Lithium	0.19	E4	0.20	0.018	mg/L	1		6010C	Total/NA
Magnesium	250		2.0	0.039	mg/L	1		6010C	Total/NA
Sodium	1600		0.50	0.45	mg/L	1		6010C	Total/NA
Alkalinity as CaCO3	74		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	74		6.0	6.0	mg/L	1		SM 2320B	Total/NA

Client Sample ID: PS-01-120219

Lab Sample ID: 550-134181-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2300	D2	100	26	mg/L	50		9056A	Total/NA
Sulfate	3000	D2	100	21	mg/L	50		9056A	Total/NA
Boron	3.4		0.050	0.042	mg/L	1		6010C	Total/NA
Calcium	610		2.0	0.064	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-1

Client Sample ID: PS-01-120219 (Continued)

Lab Sample ID: 550-134181-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.020		0.010	0.0015	mg/L	1		6010C	Total/NA
Lithium	0.19	E4	0.20	0.018	mg/L	1		6010C	Total/NA
Magnesium	240		2.0	0.039	mg/L	1		6010C	Total/NA
Sodium	1600		0.50	0.45	mg/L	1		6010C	Total/NA
Alkalinity as CaCO3	74		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	74		6.0	6.0	mg/L	1		SM 2320B	Total/NA

Client Sample ID: PS-02-120219

Lab Sample ID: 550-134181-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2300	D2	100	26	mg/L	50		9056A	Total/NA
Sulfate	3000	D2	100	21	mg/L	50		9056A	Total/NA
Boron	3.4		0.050	0.042	mg/L	1		6010C	Total/NA
Calcium	630		2.0	0.064	mg/L	1		6010C	Total/NA
Cobalt	0.020		0.010	0.0015	mg/L	1		6010C	Total/NA
Lithium	0.19	E4	0.20	0.018	mg/L	1		6010C	Total/NA
Magnesium	240		2.0	0.039	mg/L	1		6010C	Total/NA
Sodium	1600		0.50	0.45	mg/L	1		6010C	Total/NA
Alkalinity as CaCO3	74		6.0	6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	74		6.0	6.0	mg/L	1		SM 2320B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-1

Client Sample ID: BAP-01-120219-1

Lab Sample ID: 550-134181-1

Date Collected: 12/02/19 10:45

Matrix: Water

Date Received: 12/03/19 09:55

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2000	D2	100	26	mg/L			12/11/19 23:33	50
Sulfate	2800	D2	100	21	mg/L			12/11/19 23:33	50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.023	E4	0.10	0.015	mg/L		12/03/19 17:28	12/18/19 22:29	1
Boron	3.2		0.050	0.042	mg/L		12/03/19 17:28	12/18/19 22:29	1
Calcium	500		2.0	0.064	mg/L		12/03/19 17:28	12/18/19 22:29	1
Chromium	ND	E8	0.010	0.0027	mg/L		12/03/19 17:28	12/18/19 22:29	1
Cobalt	0.0016	E4	0.010	0.0015	mg/L		12/03/19 17:28	12/18/19 22:29	1
Lithium	0.16	E4	0.20	0.018	mg/L		12/03/19 17:28	12/18/19 22:29	1
Magnesium	290		2.0	0.039	mg/L		12/03/19 17:28	12/05/19 05:54	1
Sodium	1300		0.50	0.45	mg/L		12/23/19 17:03	12/31/19 13:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	120		6.0	6.0	mg/L			12/04/19 18:26	1
Bicarbonate Alkalinity as CaCO3	120		6.0	6.0	mg/L			12/04/19 18:26	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			12/04/19 18:26	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L			12/04/19 18:26	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			12/04/19 18:26	1

Client Sample ID: BAP-01-120219-5

Lab Sample ID: 550-134181-2

Date Collected: 12/02/19 10:50

Matrix: Water

Date Received: 12/03/19 09:55

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2000	D2	100	26	mg/L			12/12/19 00:00	50
Sulfate	2800	D2	100	21	mg/L			12/12/19 00:00	50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.017	E4	0.10	0.015	mg/L		12/03/19 17:28	12/18/19 22:33	1
Boron	3.3		0.050	0.042	mg/L		12/03/19 17:28	12/18/19 22:33	1
Calcium	510		2.0	0.064	mg/L		12/03/19 17:28	12/18/19 22:33	1
Chromium	ND	E8	0.010	0.0027	mg/L		12/03/19 17:28	12/18/19 22:33	1
Cobalt	0.0018	E4	0.010	0.0015	mg/L		12/03/19 17:28	12/18/19 22:33	1
Lithium	0.16	E4	0.20	0.018	mg/L		12/03/19 17:28	12/18/19 22:33	1
Magnesium	300		2.0	0.039	mg/L		12/03/19 17:28	12/05/19 05:57	1
Sodium	1400		0.50	0.45	mg/L		12/23/19 17:03	12/31/19 14:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	120		6.0	6.0	mg/L			12/04/19 18:35	1
Bicarbonate Alkalinity as CaCO3	120		6.0	6.0	mg/L			12/04/19 18:35	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			12/04/19 18:35	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L			12/04/19 18:35	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			12/04/19 18:35	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-1

Client Sample ID: BAP-01-120219-9

Lab Sample ID: 550-134181-3

Date Collected: 12/02/19 10:55

Matrix: Water

Date Received: 12/03/19 09:55

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2100	D2	100	26	mg/L			12/12/19 00:27	50
Sulfate	2900	D2	100	21	mg/L			12/12/19 00:27	50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.023	E4	0.10	0.015	mg/L		12/03/19 17:28	12/18/19 22:36	1
Boron	3.2		0.050	0.042	mg/L		12/03/19 17:28	12/18/19 22:36	1
Calcium	500		2.0	0.064	mg/L		12/03/19 17:28	12/18/19 22:36	1
Chromium	ND	E8	0.010	0.0027	mg/L		12/03/19 17:28	12/18/19 22:36	1
Cobalt	0.0019	E4	0.010	0.0015	mg/L		12/03/19 17:28	12/18/19 22:36	1
Lithium	0.16	E4	0.20	0.018	mg/L		12/03/19 17:28	12/18/19 22:36	1
Magnesium	290		2.0	0.039	mg/L		12/03/19 17:28	12/05/19 06:01	1
Sodium	1400		0.50	0.45	mg/L		12/23/19 17:03	12/31/19 14:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	120		6.0	6.0	mg/L			12/04/19 18:42	1
Bicarbonate Alkalinity as CaCO3	120		6.0	6.0	mg/L			12/04/19 18:42	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			12/04/19 18:42	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L			12/04/19 18:42	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			12/04/19 18:42	1

Client Sample ID: BAP-02-120219-0.5

Lab Sample ID: 550-134181-4

Date Collected: 12/02/19 11:30

Matrix: Water

Date Received: 12/03/19 09:55

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2000	D2	100	26	mg/L			12/12/19 00:55	50
Sulfate	2800	D2	100	21	mg/L			12/12/19 00:55	50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.020	E4	0.10	0.015	mg/L		12/03/19 17:28	12/18/19 22:40	1
Boron	3.1		0.050	0.042	mg/L		12/03/19 17:28	12/18/19 22:40	1
Calcium	480		2.0	0.064	mg/L		12/03/19 17:28	12/18/19 22:40	1
Chromium	ND	E8	0.010	0.0027	mg/L		12/03/19 17:28	12/18/19 22:40	1
Cobalt	0.0015	E4	0.010	0.0015	mg/L		12/03/19 17:28	12/18/19 22:40	1
Lithium	0.15	E4	0.20	0.018	mg/L		12/03/19 17:28	12/18/19 22:40	1
Magnesium	290		2.0	0.039	mg/L		12/03/19 17:28	12/05/19 06:04	1
Sodium	1400		0.50	0.45	mg/L		12/23/19 17:03	12/31/19 14:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	120		6.0	6.0	mg/L			12/04/19 18:50	1
Bicarbonate Alkalinity as CaCO3	120		6.0	6.0	mg/L			12/04/19 18:50	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			12/04/19 18:50	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L			12/04/19 18:50	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			12/04/19 18:50	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-1

Client Sample ID: BAP-02-120219-1

Lab Sample ID: 550-134181-5

Date Collected: 12/02/19 11:35

Matrix: Water

Date Received: 12/03/19 09:55

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2000	D2	100	26	mg/L			12/12/19 01:22	50
Sulfate	2800	D2	100	21	mg/L			12/12/19 01:22	50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.021	E4	0.10	0.015	mg/L		12/03/19 17:28	12/18/19 22:49	1
Boron	3.2		0.050	0.042	mg/L		12/03/19 17:28	12/18/19 22:49	1
Calcium	500		2.0	0.064	mg/L		12/03/19 17:28	12/18/19 22:49	1
Chromium	ND	E8	0.010	0.0027	mg/L		12/03/19 17:28	12/18/19 22:49	1
Cobalt	0.0017	E4	0.010	0.0015	mg/L		12/03/19 17:28	12/18/19 22:49	1
Lithium	0.16	E4	0.20	0.018	mg/L		12/03/19 17:28	12/18/19 22:49	1
Magnesium	300		2.0	0.039	mg/L		12/03/19 17:28	12/05/19 06:14	1
Sodium	1400		0.50	0.45	mg/L		12/23/19 17:03	12/31/19 14:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	120		6.0	6.0	mg/L			12/04/19 19:15	1
Bicarbonate Alkalinity as CaCO3	120		6.0	6.0	mg/L			12/04/19 19:15	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			12/04/19 19:15	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L			12/04/19 19:15	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			12/04/19 19:15	1

Client Sample ID: BAP-02-120219-1.5

Lab Sample ID: 550-134181-6

Date Collected: 12/02/19 11:40

Matrix: Water

Date Received: 12/03/19 09:55

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2000	D2	100	26	mg/L			12/12/19 01:50	50
Sulfate	2800	D2	100	21	mg/L			12/12/19 01:50	50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.022	E4	0.10	0.015	mg/L		12/03/19 17:28	12/18/19 22:52	1
Boron	3.2		0.050	0.042	mg/L		12/03/19 17:28	12/18/19 22:52	1
Calcium	500		2.0	0.064	mg/L		12/03/19 17:28	12/18/19 22:52	1
Chromium	ND	E8	0.010	0.0027	mg/L		12/03/19 17:28	12/18/19 22:52	1
Cobalt	0.0016	E4	0.010	0.0015	mg/L		12/03/19 17:28	12/18/19 22:52	1
Lithium	0.16	E4	0.20	0.018	mg/L		12/03/19 17:28	12/18/19 22:52	1
Magnesium	300		2.0	0.039	mg/L		12/03/19 17:28	12/05/19 06:17	1
Sodium	1400		0.50	0.45	mg/L		12/23/19 17:03	12/31/19 14:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	130		6.0	6.0	mg/L			12/04/19 19:32	1
Bicarbonate Alkalinity as CaCO3	130		6.0	6.0	mg/L			12/04/19 19:32	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			12/04/19 19:32	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L			12/04/19 19:32	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			12/04/19 19:32	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-1

Client Sample ID: DUP-02-120219

Lab Sample ID: 550-134181-7

Date Collected: 12/02/19 11:45

Matrix: Water

Date Received: 12/03/19 09:55

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2000	D2	100	26	mg/L			12/12/19 02:17	50
Sulfate	2800	D2	100	21	mg/L			12/12/19 02:17	50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.024	E4	0.10	0.015	mg/L		12/03/19 17:28	12/18/19 22:56	1
Boron	3.2		0.050	0.042	mg/L		12/03/19 17:28	12/18/19 22:56	1
Calcium	500		2.0	0.064	mg/L		12/03/19 17:28	12/18/19 22:56	1
Chromium	ND	E8	0.010	0.0027	mg/L		12/03/19 17:28	12/18/19 22:56	1
Cobalt	0.0018	E4	0.010	0.0015	mg/L		12/03/19 17:28	12/18/19 22:56	1
Lithium	0.16	E4	0.20	0.018	mg/L		12/03/19 17:28	12/18/19 22:56	1
Magnesium	300		2.0	0.039	mg/L		12/03/19 17:28	12/05/19 06:21	1
Sodium	1400		0.50	0.45	mg/L		12/23/19 17:03	12/31/19 14:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	130		6.0	6.0	mg/L			12/04/19 19:39	1
Bicarbonate Alkalinity as CaCO3	130		6.0	6.0	mg/L			12/04/19 19:39	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			12/04/19 19:39	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L			12/04/19 19:39	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			12/04/19 19:39	1

Client Sample ID: BAP-INF-120219

Lab Sample ID: 550-134181-8

Date Collected: 12/02/19 12:55

Matrix: Water

Date Received: 12/03/19 09:55

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2200	D2	100	26	mg/L			12/12/19 02:44	50
Sulfate	3100	D2	100	21	mg/L			12/12/19 02:44	50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.021	E4	0.10	0.015	mg/L		12/03/19 17:28	12/18/19 22:59	1
Boron	3.0		0.050	0.042	mg/L		12/03/19 17:28	12/18/19 22:59	1
Calcium	500		2.0	0.064	mg/L		12/03/19 17:28	12/18/19 22:59	1
Chromium	0.0030	E4	0.010	0.0027	mg/L		12/03/19 17:28	12/18/19 22:59	1
Cobalt	0.0053	E4	0.010	0.0015	mg/L		12/03/19 17:28	12/18/19 22:59	1
Lithium	0.16	E4	0.20	0.018	mg/L		12/03/19 17:28	12/18/19 22:59	1
Magnesium	310		2.0	0.039	mg/L		12/03/19 17:28	12/05/19 06:25	1
Sodium	1500		0.50	0.45	mg/L		12/23/19 17:03	12/31/19 14:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	110		6.0	6.0	mg/L			12/04/19 19:48	1
Bicarbonate Alkalinity as CaCO3	110		6.0	6.0	mg/L			12/04/19 19:48	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			12/04/19 19:48	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L			12/04/19 19:48	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			12/04/19 19:48	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-1

Client Sample ID: BAP-INF-120219-SED

Lab Sample ID: 550-134181-9

Date Collected: 12/02/19 13:10

Matrix: Solid

Date Received: 12/03/19 09:55

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	2.9	1.5	mg/Kg		12/06/19 10:39	12/20/19 06:42	1
Boron	14		9.8	0.66	mg/Kg		12/06/19 10:39	12/20/19 06:42	1
Chromium	2.0		2.0	0.64	mg/Kg		12/06/19 10:39	12/20/19 06:42	1
Cobalt	1.3	E4	2.0	0.092	mg/Kg		12/06/19 10:39	12/20/19 06:42	1
Iron	32000	D2	49	32	mg/Kg		12/06/19 10:39	12/20/19 18:48	5
Lithium	2.2	E4	24	2.0	mg/Kg		12/06/19 10:39	12/20/19 18:31	1

Client Sample ID: BAP-INF-120219-SILT

Lab Sample ID: 550-134181-10

Date Collected: 12/02/19 13:20

Matrix: Solid

Date Received: 12/03/19 09:55

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	2.9	1.5	mg/Kg		12/06/19 10:39	12/20/19 06:45	1
Boron	30		9.8	0.66	mg/Kg		12/06/19 10:39	12/20/19 06:45	1
Chromium	2.7		2.0	0.64	mg/Kg		12/06/19 10:39	12/20/19 06:45	1
Cobalt	1.5	E4	2.0	0.092	mg/Kg		12/06/19 10:39	12/20/19 06:45	1
Iron	8200		9.8	6.3	mg/Kg		12/06/19 10:39	12/20/19 18:34	1
Lithium	3.2	E4	24	2.0	mg/Kg		12/06/19 10:39	12/20/19 18:34	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oxidation Reduction Potential	370	H5	0.10	0.10	millivolts			12/10/19 17:48	1

Client Sample ID: PS-S-120219

Lab Sample ID: 550-134181-11

Date Collected: 12/02/19 13:50

Matrix: Water

Date Received: 12/03/19 09:55

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2400	D2	100	26	mg/L			12/12/19 21:02	50
Sulfate	3000	D2	100	21	mg/L			12/12/19 21:02	50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	0.10	0.015	mg/L		12/03/19 17:28	12/18/19 23:03	1
Boron	3.5		0.050	0.042	mg/L		12/03/19 17:28	12/18/19 23:03	1
Calcium	630		2.0	0.064	mg/L		12/03/19 17:28	12/18/19 23:03	1
Chromium	ND	E8	0.010	0.0027	mg/L		12/03/19 17:28	12/18/19 23:03	1
Cobalt	0.019		0.010	0.0015	mg/L		12/03/19 17:28	12/18/19 23:03	1
Lithium	0.19	E4	0.20	0.018	mg/L		12/03/19 17:28	12/18/19 23:03	1
Magnesium	250		2.0	0.039	mg/L		12/03/19 17:28	12/05/19 06:28	1
Sodium	1600		0.50	0.45	mg/L		12/23/19 17:03	12/31/19 14:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	74		6.0	6.0	mg/L			12/04/19 19:57	1
Bicarbonate Alkalinity as CaCO3	74		6.0	6.0	mg/L			12/04/19 19:57	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			12/04/19 19:57	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L			12/04/19 19:57	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			12/04/19 19:57	1

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-1

Client Sample ID: PS-01-120219

Lab Sample ID: 550-134181-12

Date Collected: 12/02/19 13:55

Matrix: Water

Date Received: 12/03/19 09:55

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2300	D2	100	26	mg/L			12/12/19 21:21	50
Sulfate	3000	D2	100	21	mg/L			12/12/19 21:21	50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	0.10	0.015	mg/L		12/03/19 17:28	12/18/19 23:06	1
Boron	3.4		0.050	0.042	mg/L		12/03/19 17:28	12/18/19 23:06	1
Calcium	610		2.0	0.064	mg/L		12/03/19 17:28	12/18/19 23:06	1
Chromium	ND	E8	0.010	0.0027	mg/L		12/03/19 17:28	12/18/19 23:06	1
Cobalt	0.020		0.010	0.0015	mg/L		12/03/19 17:28	12/18/19 23:06	1
Lithium	0.19	E4	0.20	0.018	mg/L		12/03/19 17:28	12/18/19 23:06	1
Magnesium	240		2.0	0.039	mg/L		12/03/19 17:28	12/05/19 06:32	1
Sodium	1600		0.50	0.45	mg/L		12/23/19 17:03	12/31/19 14:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	74		6.0	6.0	mg/L			12/04/19 20:05	1
Bicarbonate Alkalinity as CaCO3	74		6.0	6.0	mg/L			12/04/19 20:05	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			12/04/19 20:05	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L			12/04/19 20:05	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			12/04/19 20:05	1

Client Sample ID: PS-02-120219

Lab Sample ID: 550-134181-13

Date Collected: 12/02/19 14:00

Matrix: Water

Date Received: 12/03/19 09:55

Method: 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2300	D2	100	26	mg/L			12/12/19 21:39	50
Sulfate	3000	D2	100	21	mg/L			12/12/19 21:39	50

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	0.10	0.015	mg/L		12/03/19 17:28	12/18/19 23:10	1
Boron	3.4		0.050	0.042	mg/L		12/03/19 17:28	12/18/19 23:10	1
Calcium	630		2.0	0.064	mg/L		12/03/19 17:28	12/18/19 23:10	1
Chromium	ND	E8	0.010	0.0027	mg/L		12/03/19 17:28	12/18/19 23:10	1
Cobalt	0.020		0.010	0.0015	mg/L		12/03/19 17:28	12/18/19 23:10	1
Lithium	0.19	E4	0.20	0.018	mg/L		12/03/19 17:28	12/18/19 23:10	1
Magnesium	240		2.0	0.039	mg/L		12/03/19 17:28	12/05/19 06:35	1
Sodium	1600		0.50	0.45	mg/L		12/23/19 17:03	12/31/19 14:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	74		6.0	6.0	mg/L			12/04/19 20:14	1
Bicarbonate Alkalinity as CaCO3	74		6.0	6.0	mg/L			12/04/19 20:14	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			12/04/19 20:14	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L			12/04/19 20:14	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L			12/04/19 20:14	1

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 550-197803/2

Matrix: Water

Analysis Batch: 197803

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND	E8	2.0	0.52	mg/L			12/11/19 16:42	1
Sulfate	ND	E8	2.0	0.43	mg/L			12/11/19 16:42	1

Lab Sample ID: LCS 550-197803/5

Matrix: Water

Analysis Batch: 197803

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	19.9		mg/L		100	80 - 120
Sulfate	20.0	19.8		mg/L		99	80 - 120

Lab Sample ID: LCSD 550-197803/6

Matrix: Water

Analysis Batch: 197803

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	19.9		mg/L		100	80 - 120	0	20
Sulfate	20.0	19.8		mg/L		99	80 - 120	0	20

Lab Sample ID: 550-134379-A-2 MS

Matrix: Water

Analysis Batch: 197803

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	1.7	E4	20.0	22.1		mg/L		102	80 - 120
Sulfate	87	M3	20.0	104	M3	mg/L		87	80 - 120

Lab Sample ID: 550-134379-A-2 MSD

Matrix: Water

Analysis Batch: 197803

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	1.7	E4	20.0	22.5		mg/L		104	80 - 120	2	20
Sulfate	87	M3	20.0	105	M3	mg/L		89	80 - 120	0	20

Lab Sample ID: MB 550-197909/2

Matrix: Water

Analysis Batch: 197909

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND	E8	2.0	0.52	mg/L			12/12/19 19:30	1
Sulfate	ND	E8	2.0	0.43	mg/L			12/12/19 19:30	1

Lab Sample ID: LCS 550-197909/5

Matrix: Water

Analysis Batch: 197909

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	21.5		mg/L		108	80 - 120
Sulfate	20.0	20.8		mg/L		104	80 - 120

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: LCSD 550-197909/6

Matrix: Water

Analysis Batch: 197909

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	21.5		mg/L		108	80 - 120	0	20
Sulfate	20.0	20.8		mg/L		104	80 - 120	0	20

Lab Sample ID: 550-134594-A-1 MS

Matrix: Water

Analysis Batch: 197909

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	67	M2	20.0	83.2	M2	mg/L		79	80 - 120		
Sulfate	47		20.0	66.2		mg/L		94	80 - 120		

Lab Sample ID: 550-134594-A-1 MSD

Matrix: Water

Analysis Batch: 197909

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	67	M2	20.0	83.3		mg/L		80	80 - 120	0	20
Sulfate	47		20.0	66.4		mg/L		95	80 - 120	0	20

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 550-197132/1-A

Matrix: Water

Analysis Batch: 197305

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 197132

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	ND	E8	2.0	0.039	mg/L		12/03/19 17:28	12/05/19 05:28	1

Lab Sample ID: MB 550-197132/1-A

Matrix: Water

Analysis Batch: 198452

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 197132

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	0.10	0.015	mg/L		12/03/19 17:28	12/18/19 22:03	1
Boron	ND	E8	0.050	0.042	mg/L		12/03/19 17:28	12/18/19 22:03	1
Calcium	ND	E8	2.0	0.064	mg/L		12/03/19 17:28	12/18/19 22:03	1
Chromium	ND	E8	0.010	0.0027	mg/L		12/03/19 17:28	12/18/19 22:03	1
Cobalt	ND	E8	0.010	0.0015	mg/L		12/03/19 17:28	12/18/19 22:03	1
Lithium	ND	E8	0.20	0.018	mg/L		12/03/19 17:28	12/18/19 22:03	1

Lab Sample ID: LCS 550-197132/2-A

Matrix: Water

Analysis Batch: 197305

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 197132

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Magnesium	21.0	22.4		mg/L		107	89 - 110		

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 550-197132/2-A

Matrix: Water

Analysis Batch: 198452

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 197132

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1.00	0.981		mg/L		98	90 - 110
Boron	1.00	0.980		mg/L		98	88 - 110
Calcium	21.0	21.3		mg/L		101	88 - 112
Chromium	1.00	0.998		mg/L		100	90 - 110
Cobalt	1.00	1.00		mg/L		100	90 - 112
Lithium	1.00	1.03		mg/L		103	82 - 113

Lab Sample ID: LCSD 550-197132/3-A

Matrix: Water

Analysis Batch: 197305

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 197132

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Magnesium	21.0	22.2		mg/L		106	89 - 110	1	20

Lab Sample ID: LCSD 550-197132/3-A

Matrix: Water

Analysis Batch: 198452

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 197132

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	1.00	0.961		mg/L		96	90 - 110	2	20
Boron	1.00	0.968		mg/L		97	88 - 110	1	20
Calcium	21.0	20.9		mg/L		100	88 - 112	2	20
Chromium	1.00	0.982		mg/L		98	90 - 110	2	20
Cobalt	1.00	0.985		mg/L		98	90 - 112	2	20
Lithium	1.00	1.01		mg/L		101	82 - 113	2	20

Lab Sample ID: 550-133888-D-1-D MS

Matrix: Water

Analysis Batch: 197305

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 197132

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Magnesium	160	M3	21.0	177	M3	mg/L		80	75 - 125

Lab Sample ID: 550-133888-D-1-D MS

Matrix: Water

Analysis Batch: 198452

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 197132

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	ND	E8	1.00	1.04		mg/L		104	75 - 125
Boron	1.8		1.00	2.76		mg/L		96	75 - 125
Calcium	680	M3	21.0	681	M3	mg/L		-14	75 - 125
Chromium	ND	E8	1.00	0.942		mg/L		94	75 - 125
Cobalt	0.019		1.00	0.931		mg/L		91	75 - 125
Lithium	0.20		1.00	1.24		mg/L		105	75 - 125

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 550-133888-D-1-E MSD

Matrix: Water

Analysis Batch: 197305

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 197132

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Magnesium	160	M3	21.0	171	M3	mg/L		54	75 - 125	3	20

Lab Sample ID: 550-133888-D-1-E MSD

Matrix: Water

Analysis Batch: 198452

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 197132

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND	E8	1.00	1.04		mg/L		104	75 - 125	0	20
Boron	1.8		1.00	2.74		mg/L		95	75 - 125	1	20
Calcium	680	M3	21.0	665	M3	mg/L		-90	75 - 125	2	20
Chromium	ND	E8	1.00	0.946		mg/L		95	75 - 125	0	20
Cobalt	0.019		1.00	0.930		mg/L		91	75 - 125	0	20
Lithium	0.20		1.00	1.24		mg/L		104	75 - 125	0	20

Lab Sample ID: MB 550-197401/1-A

Matrix: Solid

Analysis Batch: 198604

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 197401

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	E8	2.9	1.5	mg/Kg		12/06/19 10:39	12/20/19 06:19	1
Boron	ND	E8	9.8	0.66	mg/Kg		12/06/19 10:39	12/20/19 06:19	1
Chromium	ND	E8	2.0	0.64	mg/Kg		12/06/19 10:39	12/20/19 06:19	1
Cobalt	ND	E8	2.0	0.092	mg/Kg		12/06/19 10:39	12/20/19 06:19	1

Lab Sample ID: MB 550-197401/1-A

Matrix: Solid

Analysis Batch: 198733

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 197401

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	ND	E8	9.8	6.4	mg/Kg		12/06/19 10:39	12/20/19 18:07	1
Lithium	ND	E8	24	2.0	mg/Kg		12/06/19 10:39	12/20/19 18:07	1

Lab Sample ID: LCS 550-197401/2-A

Matrix: Solid

Analysis Batch: 198604

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 197401

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	49.5	51.9		mg/Kg		105	80 - 110
Boron	49.5	49.7		mg/Kg		100	80 - 120
Chromium	49.5	53.5		mg/Kg		108	86 - 110
Cobalt	49.5	53.3		mg/Kg		108	80 - 120

Lab Sample ID: LCS 550-197401/2-A

Matrix: Solid

Analysis Batch: 198733

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 197401

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	49.5	55.1		mg/Kg		111	83 - 117
Lithium	49.5	52.2		mg/Kg		105	102 - 112

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCSD 550-197401/3-A

Matrix: Solid

Analysis Batch: 198604

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 197401

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	49.9	52.1		mg/Kg		104	80 - 110	0	20
Boron	49.9	50.0		mg/Kg		100	80 - 120	1	20
Chromium	49.9	53.7		mg/Kg		107	86 - 110	0	20
Cobalt	49.9	53.6		mg/Kg		107	80 - 120	0	20

Lab Sample ID: LCSD 550-197401/3-A

Matrix: Solid

Analysis Batch: 198733

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 197401

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	49.9	55.7		mg/Kg		112	83 - 117	1	20
Lithium	49.9	52.7		mg/Kg		105	102 - 112	1	20

Lab Sample ID: 550-134374-C-1-A MS

Matrix: Solid

Analysis Batch: 198604

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 197401

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	ND	E8	49.7	44.8		mg/Kg		90	75 - 125
Boron	7.5	E4	49.7	56.1		mg/Kg		98	75 - 125
Chromium	19		49.7	68.7		mg/Kg		100	75 - 125
Cobalt	7.6		49.7	55.6		mg/Kg		97	75 - 125
Lithium	16	E4 L4	49.7	65.0		mg/Kg		99	75 - 125

Lab Sample ID: 550-134374-C-1-A MS

Matrix: Solid

Analysis Batch: 198733

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 197401

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	15000	M3	49.7	15500	M3	mg/Kg		330	75 - 125
Lithium	17	E4	49.7	69.7		mg/Kg		106	75 - 125

Lab Sample ID: 550-134374-C-1-B MSD

Matrix: Solid

Analysis Batch: 198604

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 197401

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND	E8	49.7	45.8		mg/Kg		92	75 - 125	2	20
Boron	7.5	E4	49.7	57.3		mg/Kg		100	75 - 125	2	20
Chromium	19		49.7	68.6		mg/Kg		100	75 - 125	0	20
Cobalt	7.6		49.7	57.2		mg/Kg		100	75 - 125	3	20
Lithium	16	E4 L4	49.7	65.0		mg/Kg		99	75 - 125	0	20

Lab Sample ID: 550-134374-C-1-B MSD

Matrix: Solid

Analysis Batch: 198733

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 197401

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	15000	M3	49.7	15700	M3	mg/Kg		759	75 - 125	1	20
Lithium	17	E4	49.7	70.3		mg/Kg		107	75 - 125	1	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 550-198814/1-A
Matrix: Water
Analysis Batch: 199368

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 198814

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	ND	E8	0.50	0.45	mg/L	-	12/23/19 16:22	12/31/19 13:39	1

Lab Sample ID: LCS 550-198814/2-A
Matrix: Water
Analysis Batch: 199368

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 198814

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sodium	20.0	19.5		mg/L	-	97	84 - 110

Lab Sample ID: LCSD 550-198814/3-A
Matrix: Water
Analysis Batch: 199368

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 198814

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Sodium	20.0	19.3		mg/L	-	96	84 - 110	1	20

Lab Sample ID: 550-134201-J-1-D MS ^T
Matrix: Water
Analysis Batch: 199368

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 198814

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sodium	ND	E8	100	91.8		mg/L	-	92	75 - 125

Lab Sample ID: 550-134201-J-1-E MSD ^T
Matrix: Water
Analysis Batch: 199368

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 198814

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Sodium	ND	E8	100	92.0		mg/L	-	92	75 - 125	0	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 550-197265/33
Matrix: Water
Analysis Batch: 197265

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L	-		12/04/19 19:08	1
Bicarbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L	-		12/04/19 19:08	1
Carbonate Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L	-		12/04/19 19:08	1
Alkalinity, Phenolphthalein	ND	E8	6.0	6.0	mg/L	-		12/04/19 19:08	1
Hydroxide Alkalinity as CaCO3	ND	E8	6.0	6.0	mg/L	-		12/04/19 19:08	1

Lab Sample ID: LCS 550-197265/18
Matrix: Water
Analysis Batch: 197265

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity as CaCO3	250	247		mg/L	-	99	90 - 110

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QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCSD 550-197265/32

Matrix: Water

Analysis Batch: 197265

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity as CaCO3	250	248		mg/L		99	90 - 110	0	20

Lab Sample ID: 550-134181-5 DU

Matrix: Water

Analysis Batch: 197265

Client Sample ID: BAP-02-120219-1

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity as CaCO3	120		124		mg/L		1	20
Bicarbonate Alkalinity as CaCO3	120		124		mg/L		1	20
Carbonate Alkalinity as CaCO3	ND	E8	ND	E8	mg/L		NC	20
Alkalinity, Phenolphthalein	ND	E8	ND	E8	mg/L		NC	20
Hydroxide Alkalinity as CaCO3	ND	E8	ND	E8	mg/L		NC	20

Lab Sample ID: 550-134230-A-1 DU

Matrix: Water

Analysis Batch: 197265

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity as CaCO3	89		89.2		mg/L		0.5	20
Bicarbonate Alkalinity as CaCO3	89		89.2		mg/L		0.5	20
Carbonate Alkalinity as CaCO3	ND	E8	ND	E8	mg/L		NC	20
Alkalinity, Phenolphthalein	ND	E8	ND	E8	mg/L		NC	20
Hydroxide Alkalinity as CaCO3	ND	E8	ND	E8	mg/L		NC	20

Method: SM 2580B - Reduction-Oxidation (REDOX) Potential

Lab Sample ID: 550-134181-10 DU

Matrix: Solid

Analysis Batch: 585078

Client Sample ID: BAP-INF-120219-SILT

Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Oxidation Reduction Potential	370	H5	362		millivolts		2	5

QC Association Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-1

HPLC/IC

Analysis Batch: 197803

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-134181-1	BAP-01-120219-1	Total/NA	Water	9056A	
550-134181-2	BAP-01-120219-5	Total/NA	Water	9056A	
550-134181-3	BAP-01-120219-9	Total/NA	Water	9056A	
550-134181-4	BAP-02-120219-0.5	Total/NA	Water	9056A	
550-134181-5	BAP-02-120219-1	Total/NA	Water	9056A	
550-134181-6	BAP-02-120219-1.5	Total/NA	Water	9056A	
550-134181-7	DUP-02-120219	Total/NA	Water	9056A	
550-134181-8	BAP-INF-120219	Total/NA	Water	9056A	
MB 550-197803/2	Method Blank	Total/NA	Water	9056A	
LCS 550-197803/5	Lab Control Sample	Total/NA	Water	9056A	
LCSD 550-197803/6	Lab Control Sample Dup	Total/NA	Water	9056A	
550-134379-A-2 MS	Matrix Spike	Total/NA	Water	9056A	
550-134379-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	9056A	

Analysis Batch: 197909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-134181-11	PS-S-120219	Total/NA	Water	9056A	
550-134181-12	PS-01-120219	Total/NA	Water	9056A	
550-134181-13	PS-02-120219	Total/NA	Water	9056A	
MB 550-197909/2	Method Blank	Total/NA	Water	9056A	
LCS 550-197909/5	Lab Control Sample	Total/NA	Water	9056A	
LCSD 550-197909/6	Lab Control Sample Dup	Total/NA	Water	9056A	
550-134594-A-1 MS	Matrix Spike	Total/NA	Water	9056A	
550-134594-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	9056A	

Metals

Prep Batch: 197132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-134181-1	BAP-01-120219-1	Total/NA	Water	3005A	
550-134181-2	BAP-01-120219-5	Total/NA	Water	3005A	
550-134181-3	BAP-01-120219-9	Total/NA	Water	3005A	
550-134181-4	BAP-02-120219-0.5	Total/NA	Water	3005A	
550-134181-5	BAP-02-120219-1	Total/NA	Water	3005A	
550-134181-6	BAP-02-120219-1.5	Total/NA	Water	3005A	
550-134181-7	DUP-02-120219	Total/NA	Water	3005A	
550-134181-8	BAP-INF-120219	Total/NA	Water	3005A	
550-134181-11	PS-S-120219	Total/NA	Water	3005A	
550-134181-12	PS-01-120219	Total/NA	Water	3005A	
550-134181-13	PS-02-120219	Total/NA	Water	3005A	
MB 550-197132/1-A	Method Blank	Total/NA	Water	3005A	
LCS 550-197132/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 550-197132/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	
550-133888-D-1-D MS	Matrix Spike	Total/NA	Water	3005A	
550-133888-D-1-E MSD	Matrix Spike Duplicate	Total/NA	Water	3005A	

Analysis Batch: 197305

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-134181-1	BAP-01-120219-1	Total/NA	Water	6010C	197132
550-134181-2	BAP-01-120219-5	Total/NA	Water	6010C	197132
550-134181-3	BAP-01-120219-9	Total/NA	Water	6010C	197132

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QC Association Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-1

Metals (Continued)

Analysis Batch: 197305 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-134181-4	BAP-02-120219-0.5	Total/NA	Water	6010C	197132
550-134181-5	BAP-02-120219-1	Total/NA	Water	6010C	197132
550-134181-6	BAP-02-120219-1.5	Total/NA	Water	6010C	197132
550-134181-7	DUP-02-120219	Total/NA	Water	6010C	197132
550-134181-8	BAP-INF-120219	Total/NA	Water	6010C	197132
550-134181-11	PS-S-120219	Total/NA	Water	6010C	197132
550-134181-12	PS-01-120219	Total/NA	Water	6010C	197132
550-134181-13	PS-02-120219	Total/NA	Water	6010C	197132
MB 550-197132/1-A	Method Blank	Total/NA	Water	6010C	197132
LCS 550-197132/2-A	Lab Control Sample	Total/NA	Water	6010C	197132
LCSD 550-197132/3-A	Lab Control Sample Dup	Total/NA	Water	6010C	197132
550-133888-D-1-D MS	Matrix Spike	Total/NA	Water	6010C	197132
550-133888-D-1-E MSD	Matrix Spike Duplicate	Total/NA	Water	6010C	197132

Prep Batch: 197401

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-134181-9	BAP-INF-120219-SED	Total/NA	Solid	3050B	
550-134181-10	BAP-INF-120219-SILT	Total/NA	Solid	3050B	
MB 550-197401/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 550-197401/2-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 550-197401/3-A	Lab Control Sample Dup	Total/NA	Solid	3050B	
550-134374-C-1-A MS	Matrix Spike	Total/NA	Solid	3050B	
550-134374-C-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	3050B	

Analysis Batch: 198452

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-134181-1	BAP-01-120219-1	Total/NA	Water	6010C	197132
550-134181-2	BAP-01-120219-5	Total/NA	Water	6010C	197132
550-134181-3	BAP-01-120219-9	Total/NA	Water	6010C	197132
550-134181-4	BAP-02-120219-0.5	Total/NA	Water	6010C	197132
550-134181-5	BAP-02-120219-1	Total/NA	Water	6010C	197132
550-134181-6	BAP-02-120219-1.5	Total/NA	Water	6010C	197132
550-134181-7	DUP-02-120219	Total/NA	Water	6010C	197132
550-134181-8	BAP-INF-120219	Total/NA	Water	6010C	197132
550-134181-11	PS-S-120219	Total/NA	Water	6010C	197132
550-134181-12	PS-01-120219	Total/NA	Water	6010C	197132
550-134181-13	PS-02-120219	Total/NA	Water	6010C	197132
MB 550-197132/1-A	Method Blank	Total/NA	Water	6010C	197132
LCS 550-197132/2-A	Lab Control Sample	Total/NA	Water	6010C	197132
LCSD 550-197132/3-A	Lab Control Sample Dup	Total/NA	Water	6010C	197132
550-133888-D-1-D MS	Matrix Spike	Total/NA	Water	6010C	197132
550-133888-D-1-E MSD	Matrix Spike Duplicate	Total/NA	Water	6010C	197132

Analysis Batch: 198604

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-134181-9	BAP-INF-120219-SED	Total/NA	Solid	6010C	197401
550-134181-10	BAP-INF-120219-SILT	Total/NA	Solid	6010C	197401
MB 550-197401/1-A	Method Blank	Total/NA	Solid	6010C	197401
LCS 550-197401/2-A	Lab Control Sample	Total/NA	Solid	6010C	197401
LCSD 550-197401/3-A	Lab Control Sample Dup	Total/NA	Solid	6010C	197401
550-134374-C-1-A MS	Matrix Spike	Total/NA	Solid	6010C	197401

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QC Association Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-1

Metals (Continued)

Analysis Batch: 198604 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-134374-C-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	6010C	197401

Analysis Batch: 198733

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-134181-9	BAP-INF-120219-SED	Total/NA	Solid	6010C	197401
550-134181-9	BAP-INF-120219-SED	Total/NA	Solid	6010C	197401
550-134181-10	BAP-INF-120219-SILT	Total/NA	Solid	6010C	197401
MB 550-197401/1-A	Method Blank	Total/NA	Solid	6010C	197401
LCS 550-197401/2-A	Lab Control Sample	Total/NA	Solid	6010C	197401
LCSD 550-197401/3-A	Lab Control Sample Dup	Total/NA	Solid	6010C	197401
550-134374-C-1-A MS	Matrix Spike	Total/NA	Solid	6010C	197401
550-134374-C-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	6010C	197401

Prep Batch: 198814

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-134181-1	BAP-01-120219-1	Total/NA	Water	3005A	
550-134181-2	BAP-01-120219-5	Total/NA	Water	3005A	
550-134181-3	BAP-01-120219-9	Total/NA	Water	3005A	
550-134181-4	BAP-02-120219-0.5	Total/NA	Water	3005A	
550-134181-5	BAP-02-120219-1	Total/NA	Water	3005A	
550-134181-6	BAP-02-120219-1.5	Total/NA	Water	3005A	
550-134181-7	DUP-02-120219	Total/NA	Water	3005A	
550-134181-8	BAP-INF-120219	Total/NA	Water	3005A	
550-134181-11	PS-S-120219	Total/NA	Water	3005A	
550-134181-12	PS-01-120219	Total/NA	Water	3005A	
550-134181-13	PS-02-120219	Total/NA	Water	3005A	
MB 550-198814/1-A	Method Blank	Total/NA	Water	3005A	
LCS 550-198814/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 550-198814/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	
550-134201-J-1-D MS ^T	Matrix Spike	Total/NA	Water	3005A	
550-134201-J-1-E MSD ^T	Matrix Spike Duplicate	Total/NA	Water	3005A	

Analysis Batch: 199368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-134181-1	BAP-01-120219-1	Total/NA	Water	6010C	198814
550-134181-2	BAP-01-120219-5	Total/NA	Water	6010C	198814
550-134181-3	BAP-01-120219-9	Total/NA	Water	6010C	198814
550-134181-4	BAP-02-120219-0.5	Total/NA	Water	6010C	198814
550-134181-5	BAP-02-120219-1	Total/NA	Water	6010C	198814
550-134181-6	BAP-02-120219-1.5	Total/NA	Water	6010C	198814
550-134181-7	DUP-02-120219	Total/NA	Water	6010C	198814
550-134181-8	BAP-INF-120219	Total/NA	Water	6010C	198814
550-134181-11	PS-S-120219	Total/NA	Water	6010C	198814
550-134181-12	PS-01-120219	Total/NA	Water	6010C	198814
550-134181-13	PS-02-120219	Total/NA	Water	6010C	198814
MB 550-198814/1-A	Method Blank	Total/NA	Water	6010C	198814
LCS 550-198814/2-A	Lab Control Sample	Total/NA	Water	6010C	198814
LCSD 550-198814/3-A	Lab Control Sample Dup	Total/NA	Water	6010C	198814
550-134201-J-1-D MS ^T	Matrix Spike	Total/NA	Water	6010C	198814
550-134201-J-1-E MSD ^T	Matrix Spike Duplicate	Total/NA	Water	6010C	198814

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-1

General Chemistry

Analysis Batch: 197265

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-134181-1	BAP-01-120219-1	Total/NA	Water	SM 2320B	
550-134181-2	BAP-01-120219-5	Total/NA	Water	SM 2320B	
550-134181-3	BAP-01-120219-9	Total/NA	Water	SM 2320B	
550-134181-4	BAP-02-120219-0.5	Total/NA	Water	SM 2320B	
550-134181-5	BAP-02-120219-1	Total/NA	Water	SM 2320B	
550-134181-6	BAP-02-120219-1.5	Total/NA	Water	SM 2320B	
550-134181-7	DUP-02-120219	Total/NA	Water	SM 2320B	
550-134181-8	BAP-INF-120219	Total/NA	Water	SM 2320B	
550-134181-11	PS-S-120219	Total/NA	Water	SM 2320B	
550-134181-12	PS-01-120219	Total/NA	Water	SM 2320B	
550-134181-13	PS-02-120219	Total/NA	Water	SM 2320B	
MB 550-197265/33	Method Blank	Total/NA	Water	SM 2320B	
LCS 550-197265/18	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 550-197265/32	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
550-134181-5 DU	BAP-02-120219-1	Total/NA	Water	SM 2320B	
550-134230-A-1 DU	Duplicate	Total/NA	Water	SM 2320B	

Leach Batch: 584993

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-134181-10	BAP-INF-120219-SILT	Soluble	Solid	DI Leach	
550-134181-10 DU	BAP-INF-120219-SILT	Soluble	Solid	DI Leach	

Analysis Batch: 585078

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-134181-10	BAP-INF-120219-SILT	Soluble	Solid	SM 2580B	584993
550-134181-10 DU	BAP-INF-120219-SILT	Soluble	Solid	SM 2580B	584993

Lab Chronicle

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-1

Client Sample ID: BAP-01-120219-1

Lab Sample ID: 550-134181-1

Date Collected: 12/02/19 10:45

Matrix: Water

Date Received: 12/03/19 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		50	197803	12/11/19 23:33	NEL	TAL PHX
Total/NA	Prep	3005A			197132	12/03/19 17:28	MGM	TAL PHX
Total/NA	Analysis	6010C		1	197305	12/05/19 05:54	SRA	TAL PHX
Total/NA	Prep	3005A			197132	12/03/19 17:28	MGM	TAL PHX
Total/NA	Analysis	6010C		1	198452	12/18/19 22:29	SRA	TAL PHX
Total/NA	Prep	3005A			198814	12/23/19 17:03	MGM	TAL PHX
Total/NA	Analysis	6010C		1	199368	12/31/19 13:59	MGM	TAL PHX
Total/NA	Analysis	SM 2320B		1	197265	12/04/19 18:26	DGS	TAL PHX

Client Sample ID: BAP-01-120219-5

Lab Sample ID: 550-134181-2

Date Collected: 12/02/19 10:50

Matrix: Water

Date Received: 12/03/19 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		50	197803	12/12/19 00:00	NEL	TAL PHX
Total/NA	Prep	3005A			197132	12/03/19 17:28	MGM	TAL PHX
Total/NA	Analysis	6010C		1	197305	12/05/19 05:57	SRA	TAL PHX
Total/NA	Prep	3005A			197132	12/03/19 17:28	MGM	TAL PHX
Total/NA	Analysis	6010C		1	198452	12/18/19 22:33	SRA	TAL PHX
Total/NA	Prep	3005A			198814	12/23/19 17:03	MGM	TAL PHX
Total/NA	Analysis	6010C		1	199368	12/31/19 14:02	MGM	TAL PHX
Total/NA	Analysis	SM 2320B		1	197265	12/04/19 18:35	DGS	TAL PHX

Client Sample ID: BAP-01-120219-9

Lab Sample ID: 550-134181-3

Date Collected: 12/02/19 10:55

Matrix: Water

Date Received: 12/03/19 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		50	197803	12/12/19 00:27	NEL	TAL PHX
Total/NA	Prep	3005A			197132	12/03/19 17:28	MGM	TAL PHX
Total/NA	Analysis	6010C		1	197305	12/05/19 06:01	SRA	TAL PHX
Total/NA	Prep	3005A			197132	12/03/19 17:28	MGM	TAL PHX
Total/NA	Analysis	6010C		1	198452	12/18/19 22:36	SRA	TAL PHX
Total/NA	Prep	3005A			198814	12/23/19 17:03	MGM	TAL PHX
Total/NA	Analysis	6010C		1	199368	12/31/19 14:06	MGM	TAL PHX
Total/NA	Analysis	SM 2320B		1	197265	12/04/19 18:42	DGS	TAL PHX

Client Sample ID: BAP-02-120219-0.5

Lab Sample ID: 550-134181-4

Date Collected: 12/02/19 11:30

Matrix: Water

Date Received: 12/03/19 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		50	197803	12/12/19 00:55	NEL	TAL PHX
Total/NA	Prep	3005A			197132	12/03/19 17:28	MGM	TAL PHX
Total/NA	Analysis	6010C		1	197305	12/05/19 06:04	SRA	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-1

Client Sample ID: BAP-02-120219-0.5

Lab Sample ID: 550-134181-4

Date Collected: 12/02/19 11:30

Matrix: Water

Date Received: 12/03/19 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			197132	12/03/19 17:28	MGM	TAL PHX
Total/NA	Analysis	6010C		1	198452	12/18/19 22:40	SRA	TAL PHX
Total/NA	Prep	3005A			198814	12/23/19 17:03	MGM	TAL PHX
Total/NA	Analysis	6010C		1	199368	12/31/19 14:09	MGM	TAL PHX
Total/NA	Analysis	SM 2320B		1	197265	12/04/19 18:50	DGS	TAL PHX

Client Sample ID: BAP-02-120219-1

Lab Sample ID: 550-134181-5

Date Collected: 12/02/19 11:35

Matrix: Water

Date Received: 12/03/19 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		50	197803	12/12/19 01:22	NEL	TAL PHX
Total/NA	Prep	3005A			197132	12/03/19 17:28	MGM	TAL PHX
Total/NA	Analysis	6010C		1	197305	12/05/19 06:14	SRA	TAL PHX
Total/NA	Prep	3005A			197132	12/03/19 17:28	MGM	TAL PHX
Total/NA	Analysis	6010C		1	198452	12/18/19 22:49	SRA	TAL PHX
Total/NA	Prep	3005A			198814	12/23/19 17:03	MGM	TAL PHX
Total/NA	Analysis	6010C		1	199368	12/31/19 14:18	MGM	TAL PHX
Total/NA	Analysis	SM 2320B		1	197265	12/04/19 19:15	DGS	TAL PHX

Client Sample ID: BAP-02-120219-1.5

Lab Sample ID: 550-134181-6

Date Collected: 12/02/19 11:40

Matrix: Water

Date Received: 12/03/19 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		50	197803	12/12/19 01:50	NEL	TAL PHX
Total/NA	Prep	3005A			197132	12/03/19 17:28	MGM	TAL PHX
Total/NA	Analysis	6010C		1	197305	12/05/19 06:17	SRA	TAL PHX
Total/NA	Prep	3005A			197132	12/03/19 17:28	MGM	TAL PHX
Total/NA	Analysis	6010C		1	198452	12/18/19 22:52	SRA	TAL PHX
Total/NA	Prep	3005A			198814	12/23/19 17:03	MGM	TAL PHX
Total/NA	Analysis	6010C		1	199368	12/31/19 14:22	MGM	TAL PHX
Total/NA	Analysis	SM 2320B		1	197265	12/04/19 19:32	DGS	TAL PHX

Client Sample ID: DUP-02-120219

Lab Sample ID: 550-134181-7

Date Collected: 12/02/19 11:45

Matrix: Water

Date Received: 12/03/19 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		50	197803	12/12/19 02:17	NEL	TAL PHX
Total/NA	Prep	3005A			197132	12/03/19 17:28	MGM	TAL PHX
Total/NA	Analysis	6010C		1	197305	12/05/19 06:21	SRA	TAL PHX
Total/NA	Prep	3005A			197132	12/03/19 17:28	MGM	TAL PHX
Total/NA	Analysis	6010C		1	198452	12/18/19 22:56	SRA	TAL PHX

Eurofins TestAmerica, Phoenix

Lab Chronicle

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-1

Client Sample ID: DUP-02-120219

Lab Sample ID: 550-134181-7

Date Collected: 12/02/19 11:45

Matrix: Water

Date Received: 12/03/19 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			198814	12/23/19 17:03	MGM	TAL PHX
Total/NA	Analysis	6010C		1	199368	12/31/19 14:25	MGM	TAL PHX
Total/NA	Analysis	SM 2320B		1	197265	12/04/19 19:39	DGS	TAL PHX

Client Sample ID: BAP-INF-120219

Lab Sample ID: 550-134181-8

Date Collected: 12/02/19 12:55

Matrix: Water

Date Received: 12/03/19 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		50	197803	12/12/19 02:44	NEL	TAL PHX
Total/NA	Prep	3005A			197132	12/03/19 17:28	MGM	TAL PHX
Total/NA	Analysis	6010C		1	197305	12/05/19 06:25	SRA	TAL PHX
Total/NA	Prep	3005A			197132	12/03/19 17:28	MGM	TAL PHX
Total/NA	Analysis	6010C		1	198452	12/18/19 22:59	SRA	TAL PHX
Total/NA	Prep	3005A			198814	12/23/19 17:03	MGM	TAL PHX
Total/NA	Analysis	6010C		1	199368	12/31/19 14:28	MGM	TAL PHX
Total/NA	Analysis	SM 2320B		1	197265	12/04/19 19:48	DGS	TAL PHX

Client Sample ID: BAP-INF-120219-SED

Lab Sample ID: 550-134181-9

Date Collected: 12/02/19 13:10

Matrix: Solid

Date Received: 12/03/19 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			197401	12/06/19 10:39	MGM	TAL PHX
Total/NA	Analysis	6010C		1	198604	12/20/19 06:42	SRA	TAL PHX
Total/NA	Prep	3050B			197401	12/06/19 10:39	MGM	TAL PHX
Total/NA	Analysis	6010C		1	198733	12/20/19 18:31	SRA	TAL PHX
Total/NA	Prep	3050B			197401	12/06/19 10:39	MGM	TAL PHX
Total/NA	Analysis	6010C		5	198733	12/20/19 18:48	SRA	TAL PHX

Client Sample ID: BAP-INF-120219-SILT

Lab Sample ID: 550-134181-10

Date Collected: 12/02/19 13:20

Matrix: Solid

Date Received: 12/03/19 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			197401	12/06/19 10:39	MGM	TAL PHX
Total/NA	Analysis	6010C		1	198604	12/20/19 06:45	SRA	TAL PHX
Total/NA	Prep	3050B			197401	12/06/19 10:39	MGM	TAL PHX
Total/NA	Analysis	6010C		1	198733	12/20/19 18:34	SRA	TAL PHX
Soluble	Leach	DI Leach			584993	12/10/19 13:53	HZ	TAL IRV
Soluble	Analysis	SM 2580B		1	585078	12/10/19 17:48	HZ	TAL IRV

Lab Chronicle

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-1

Client Sample ID: PS-S-120219

Lab Sample ID: 550-134181-11

Date Collected: 12/02/19 13:50

Matrix: Water

Date Received: 12/03/19 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		50	197909	12/12/19 21:02	NEL	TAL PHX
Total/NA	Prep	3005A			197132	12/03/19 17:28	MGM	TAL PHX
Total/NA	Analysis	6010C		1	197305	12/05/19 06:28	SRA	TAL PHX
Total/NA	Prep	3005A			197132	12/03/19 17:28	MGM	TAL PHX
Total/NA	Analysis	6010C		1	198452	12/18/19 23:03	SRA	TAL PHX
Total/NA	Prep	3005A			198814	12/23/19 17:03	MGM	TAL PHX
Total/NA	Analysis	6010C		1	199368	12/31/19 14:32	MGM	TAL PHX
Total/NA	Analysis	SM 2320B		1	197265	12/04/19 19:57	DGS	TAL PHX

Client Sample ID: PS-01-120219

Lab Sample ID: 550-134181-12

Date Collected: 12/02/19 13:55

Matrix: Water

Date Received: 12/03/19 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		50	197909	12/12/19 21:21	NEL	TAL PHX
Total/NA	Prep	3005A			197132	12/03/19 17:28	MGM	TAL PHX
Total/NA	Analysis	6010C		1	197305	12/05/19 06:32	SRA	TAL PHX
Total/NA	Prep	3005A			197132	12/03/19 17:28	MGM	TAL PHX
Total/NA	Analysis	6010C		1	198452	12/18/19 23:06	SRA	TAL PHX
Total/NA	Prep	3005A			198814	12/23/19 17:03	MGM	TAL PHX
Total/NA	Analysis	6010C		1	199368	12/31/19 14:35	MGM	TAL PHX
Total/NA	Analysis	SM 2320B		1	197265	12/04/19 20:05	DGS	TAL PHX

Client Sample ID: PS-02-120219

Lab Sample ID: 550-134181-13

Date Collected: 12/02/19 14:00

Matrix: Water

Date Received: 12/03/19 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9056A		50	197909	12/12/19 21:39	NEL	TAL PHX
Total/NA	Prep	3005A			197132	12/03/19 17:28	MGM	TAL PHX
Total/NA	Analysis	6010C		1	197305	12/05/19 06:35	SRA	TAL PHX
Total/NA	Prep	3005A			197132	12/03/19 17:28	MGM	TAL PHX
Total/NA	Analysis	6010C		1	198452	12/18/19 23:10	SRA	TAL PHX
Total/NA	Prep	3005A			198814	12/23/19 17:03	MGM	TAL PHX
Total/NA	Analysis	6010C		1	199368	12/31/19 14:39	MGM	TAL PHX
Total/NA	Analysis	SM 2320B		1	197265	12/04/19 20:14	DGS	TAL PHX

Laboratory References:

TAL IRV = Eurofins Calscience Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Eurofins TestAmerica, Phoenix

Accreditation/Certification Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-1

Laboratory: Eurofins TestAmerica, Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Arizona	State Program	AZ0728	06-09-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte

Laboratory: Eurofins Calscience Irvine

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Arizona	State Program	AZ0671	10-14-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
SM 2580B		Solid	Oxidation Reduction Potential

Method Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	TAL PHX
6010C	Metals (ICP)	SW846	TAL PHX
SM 2320B	Alkalinity	SM	TAL PHX
SM 2580B	Reduction-Oxidation (REDOX) Potential	SM	TAL IRV
3005A	Preparation, Total Metals	SW846	TAL PHX
3050B	Preparation, Metals	SW846	TAL PHX
DI Leach	Deionized Water Leaching Procedure	ASTM	TAL IRV

Protocol References:

ASTM = ASTM International

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL IRV = Eurofins Calscience Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Chain of Custody Record

372469



Environment Test
TestAmerica

Address:

Regulatory Program:

☐ DW

☐ NPDES

☐ RCRA

☐ Other:

TAL-8

Client Contact
Company Name: Wood
Address: 4600 E. Washington Ste. 1000
City/State/Zip: Phoenix, AZ 85034
Phone: (602) 733-1000
Fax:
Project Name: APS Cholla BAP SW Samples
Site:
PO # 1420182040.yxxx.04

Project Manager: Emily LeDolce
Tel/Email: emily.ledolce@eurofins.com
Analysis Turnaround Time
☐ CALENDAR DAYS ☐ WORKING DAYS
TAT if different from below
☐ 2 weeks
☐ 1 week
☐ 2 days
☐ 1 day

Site Contact:
Lab Contact:

Date:

Carrier:

COC No.:

1 of 2 COCs

Sampler:

For Lab Use Only:

3/ SDG No.:

3/ SDG No.:

3/ SDG No.:

3/ SDG No.:

3/ SDG No.:

Sample Identification	Sample Date	Sample Time	Sample Type (C-Comp, G-Grab)	Matrix	# of Cont.
BAP-01-120219-1	12/2/19	10:45	G	W	4
BAP-01-120219-5		10:50			
BAP-01-120219-9		10:55			
BAP-02-120219-05		11:30			
BAP-02-120219-1		11:35			
BAP-02-120219-1.5		11:40			
DUP-02-120219		11:45			
BAP-INF-120219	12/2/19	12:55	G	W	4
BAP-INF-120219-SED	12/2/19	13:10	G	S	2
BAP-INF-120219-SILT	12/2/19	13:20	G	S	2
PS-S-120219		13:50	G	W	4
PS-01-120219		13:55	G	W	4

Filtered Sample (Y/N)
Perform MS / MSD (Y/N)
6010C
SD4
2320B, CI
ORP

550-134181 Chain of Custody



Sample Specific Notes:

Sample Specific Notes:

Sample Specific Notes:

Sample Specific Notes:

Sample Specific Notes:

Sample Specific Notes:

Sample Specific Notes:

Sample Specific Notes:

Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other
Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown
Special Instructions/QC Requirements & Comments:
Custody Seals Intact: ☐ Yes ☐ No
Relinquished by: *Wood* Company: *Wood* Date/Time: *14:10*
Relinquished by: *AC&T* Company: *AC&T* Date/Time: *12/3/19*
Relinquished by: *AC&T* Company: *AC&T* Date/Time: *9:35*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Cooler Temp. °C: Obs'd: *43°C cooler 1*
Cooler Temp. °C: Obs'd: *12.9°C cooler 2*
Cooler Temp. °C: Obs'd: *BAP-01-120219-5 12.4°C cooler 3 5 gallon ON ICE*

Return to Client ☐ Disposal by Lab ☐ Archive for ☐ Months

Corrd: *AC&T*

Therm ID No.:

Date/Time: *12-02-19 14:10*

Date/Time: *9:36*

Date/Time: *12-3-19 09:58*

Date/Time: *12-3-19 09:58*

Date/Time: *12-3-19 09:58*

Date/Time: *12-3-19 09:58*

Date/Time: *12-3-19 09:58*

Date/Time: *12-3-19 09:58*

Date/Time: *12-3-19 09:58*

TAL-1

2/25/2020 (Rev. 1)

Chain of Custody Record

Client Information (Sub Contract Lab) Client Contact Shipping/Receiving Company TestAmerica Laboratories, Inc. Address 17461 Denan Ave, Suite 100, Irvine State, Zip CA, 92614-5817 Phone 949-261-1022(Tel) 949-260-3297(Fax) Email		Lab PM Baker, Ken E-Mail Ken baker@testamericainc.com Accreditations Required (See note) State Program - Arizona		Carrier Tracking No(s) 1128 3812 4035 Page Page 1 of 1 Job # 550-134181-1	
Due Date Requested: 12/13/2019 TAT Requested (days):		Analysis Requested			
PO # WO # Project # 55013695 SSOV#		Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> 2808/D/L_EACH_MP Reduction-Oxidation (REDOX) <input checked="" type="checkbox"/> Potential <input checked="" type="checkbox"/>			
Sample Date 12/2/19 Sample Time 13 20 Arizona		Sample Type (C=comp, G=grab) Preservation Code:		Matrix (W=water, S=solid, O=other, BT=Tissue, AA=Air) Solid	
Sample Identification - Client ID (Lab ID) BAP-INF-120219-SILT (550-134181-10)		Special Instructions/Note: Total Number of containers 1 AZ Sample			
Note: Since laboratory accreditation is subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/test/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately if all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to TestAmerica Laboratories, Inc.					
Possible Hazard Identification Unconfirmed Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank 2					
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/QC Requirements					
Empty Kit Relinquished by _____ Relinquished by _____ Relinquished by _____ Relinquished by _____		Date: _____ Time: _____ Method of Shipment			
Relinquished by _____ Relinquished by _____ Relinquished by _____		Date/Time 12/4/19 1600 Date/Time Date/Time Date/Time			
Relinquished by _____ Relinquished by _____ Relinquished by _____		Date/Time 12/15/19 1000 Date/Time Date/Time			
Relinquished by _____ Relinquished by _____ Relinquished by _____		Date/Time 12/15/19 1000 Date/Time Date/Time			
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Login Sample Receipt Checklist

Client: Wood E&I Solutions Inc

Job Number: 550-134181-1

Login Number: 134181

List Source: Eurofins TestAmerica, Phoenix

List Number: 1

Creator: Gravlin, Andrea

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	False	
Cooler Temperature is acceptable.	False	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

Login Sample Receipt Checklist

Client: Wood E&I Solutions Inc

Job Number: 550-134181-1

Login Number: 134181

List Number: 2

Creator: Ornelas, Olga

List Source: Eurofins Irvine

List Creation: 12/05/19 02:31 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	Not Present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

Eurofins TestAmerica, Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-134181-2

Client Project/Site: APS Cholla BAP SW Samples

For:

Wood E&I Solutions Inc
4600 E. Washington St
6th Floor
Phoenix, Arizona 85034

Attn: Emily LoDolce



Authorized for release by:
3/13/2020 11:39:14 AM

Ken Baker, Project Manager II
(602)659-7624
ken.baker@testamericainc.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Sample Summary	5
Detection Summary	6
Client Sample Results	8
QC Sample Results	10
QC Association Summary	12
Lab Chronicle	14
Certification Summary	17
Method Summary	18
Chain of Custody	19
Receipt Checklists	21



Definitions/Glossary

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-2

Qualifiers

Metals

Qualifier	Qualifier Description
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting level (MRL) but above MDL.
E8	Analyte reported to MDL per project specification. Target analyte was not detected in the sample.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-2

Job ID: 550-134181-2

Laboratory: Eurofins TestAmerica, Phoenix

Narrative

Job Narrative 550-134181-2

Comments

This report contains Cobalt analyzed by Method 6020B as requested.

Receipt

The samples were received on 12/3/2019 9:55 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 4.3° C, 9.9° C, 12.4° C and 12.9° C.

Receipt Exceptions

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed.

Sample #9 and #10 are soil samples. No methods are logged in for these 2 samples.

Please add the 6010 method needed for these samples, method chain has 3 different 6010 methods.

Sample #10 needs ORP added to the project and to the login.

The following samples were received at the laboratory outside the required temperature criteria: BAP-01-120219-1 (550-134181-1), BAP-01-120219-5 (550-134181-2), BAP-01-120219-9 (550-134181-3), BAP-02-120219-0.5 (550-134181-4), BAP-02-120219-1 (550-134181-5), BAP-02-120219-1.5 (550-134181-6), DUP-02-120219 (550-134181-7), BAP-INF-120219-SED (550-134181-9) and BAP-INF-120219-SILT (550-134181-10). There was no cooling media present in the cooler. The client was contacted regarding this issue, and the laboratory was instructed to <CHOOSE_ONE> proceed with/cancel analysis

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
550-134181-1	BAP-01-120219-1	Water	12/02/19 10:45	12/03/19 09:55	
550-134181-2	BAP-01-120219-5	Water	12/02/19 10:50	12/03/19 09:55	
550-134181-3	BAP-01-120219-9	Water	12/02/19 10:55	12/03/19 09:55	
550-134181-4	BAP-02-120219-0.5	Water	12/02/19 11:30	12/03/19 09:55	
550-134181-5	BAP-02-120219-1	Water	12/02/19 11:35	12/03/19 09:55	
550-134181-6	BAP-02-120219-1.5	Water	12/02/19 11:40	12/03/19 09:55	
550-134181-7	DUP-02-120219	Water	12/02/19 11:45	12/03/19 09:55	
550-134181-8	BAP-INF-120219	Water	12/02/19 12:55	12/03/19 09:55	
550-134181-9	BAP-INF-120219-SED	Solid	12/02/19 13:10	12/03/19 09:55	
550-134181-10	BAP-INF-120219-SILT	Solid	12/02/19 13:20	12/03/19 09:55	
550-134181-11	PS-S-120219	Water	12/02/19 13:50	12/03/19 09:55	
550-134181-12	PS-01-120219	Water	12/02/19 13:55	12/03/19 09:55	
550-134181-13	PS-02-120219	Water	12/02/19 14:00	12/03/19 09:55	

Detection Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-2

Client Sample ID: BAP-01-120219-1

Lab Sample ID: 550-134181-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.0013		0.00050	0.000063	mg/L	1		6020B	Total/NA

Client Sample ID: BAP-01-120219-5

Lab Sample ID: 550-134181-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.0011		0.00050	0.000063	mg/L	1		6020B	Total/NA

Client Sample ID: BAP-01-120219-9

Lab Sample ID: 550-134181-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.0011		0.00050	0.000063	mg/L	1		6020B	Total/NA

Client Sample ID: BAP-02-120219-0.5

Lab Sample ID: 550-134181-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.0011		0.00050	0.000063	mg/L	1		6020B	Total/NA

Client Sample ID: BAP-02-120219-1

Lab Sample ID: 550-134181-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.0011		0.00050	0.000063	mg/L	1		6020B	Total/NA

Client Sample ID: BAP-02-120219-1.5

Lab Sample ID: 550-134181-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.0011		0.00050	0.000063	mg/L	1		6020B	Total/NA

Client Sample ID: DUP-02-120219

Lab Sample ID: 550-134181-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.0011		0.00050	0.000063	mg/L	1		6020B	Total/NA

Client Sample ID: BAP-INF-120219

Lab Sample ID: 550-134181-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.0053		0.00050	0.000063	mg/L	1		6020B	Total/NA

Client Sample ID: BAP-INF-120219-SED

Lab Sample ID: 550-134181-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.66		0.050	0.011	mg/Kg	1		6020B	Total/NA

Client Sample ID: BAP-INF-120219-SILT

Lab Sample ID: 550-134181-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.049	E4	0.050	0.011	mg/Kg	1		6020B	Total/NA

Client Sample ID: PS-S-120219

Lab Sample ID: 550-134181-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.019		0.00050	0.000063	mg/L	1		6020B	Total/NA

Client Sample ID: PS-01-120219

Lab Sample ID: 550-134181-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.020		0.00050	0.000063	mg/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Detection Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-2

Client Sample ID: PS-02-120219

Lab Sample ID: 550-134181-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.021		0.00050	0.000063	mg/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Phoenix

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-2

Client Sample ID: BAP-01-120219-1

Date Collected: 12/02/19 10:45

Date Received: 12/03/19 09:55

Lab Sample ID: 550-134181-1

Matrix: Water

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.0013		0.00050	0.000063	mg/L	—	02/27/20 09:04	03/04/20 20:42	1

Client Sample ID: BAP-01-120219-5

Date Collected: 12/02/19 10:50

Date Received: 12/03/19 09:55

Lab Sample ID: 550-134181-2

Matrix: Water

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.0011		0.00050	0.000063	mg/L	—	02/27/20 09:04	03/04/20 20:44	1

Client Sample ID: BAP-01-120219-9

Date Collected: 12/02/19 10:55

Date Received: 12/03/19 09:55

Lab Sample ID: 550-134181-3

Matrix: Water

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.0011		0.00050	0.000063	mg/L	—	02/27/20 09:04	03/04/20 20:46	1

Client Sample ID: BAP-02-120219-0.5

Date Collected: 12/02/19 11:30

Date Received: 12/03/19 09:55

Lab Sample ID: 550-134181-4

Matrix: Water

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.0011		0.00050	0.000063	mg/L	—	02/27/20 09:04	03/05/20 19:27	1

Client Sample ID: BAP-02-120219-1

Date Collected: 12/02/19 11:35

Date Received: 12/03/19 09:55

Lab Sample ID: 550-134181-5

Matrix: Water

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.0011		0.00050	0.000063	mg/L	—	02/27/20 09:04	03/05/20 19:29	1

Client Sample ID: BAP-02-120219-1.5

Date Collected: 12/02/19 11:40

Date Received: 12/03/19 09:55

Lab Sample ID: 550-134181-6

Matrix: Water

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.0011		0.00050	0.000063	mg/L	—	02/27/20 09:04	03/05/20 19:31	1

Client Sample ID: DUP-02-120219

Date Collected: 12/02/19 11:45

Date Received: 12/03/19 09:55

Lab Sample ID: 550-134181-7

Matrix: Water

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.0011		0.00050	0.000063	mg/L	—	02/27/20 09:04	03/05/20 19:33	1

Client Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-2

Client Sample ID: BAP-INF-120219

Lab Sample ID: 550-134181-8

Date Collected: 12/02/19 12:55

Matrix: Water

Date Received: 12/03/19 09:55

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.0053		0.00050	0.000063	mg/L		02/27/20 09:04	03/05/20 19:35	1

Client Sample ID: BAP-INF-120219-SED

Lab Sample ID: 550-134181-9

Date Collected: 12/02/19 13:10

Matrix: Solid

Date Received: 12/03/19 09:55

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.66		0.050	0.011	mg/Kg		03/02/20 10:53	03/05/20 19:19	1

Client Sample ID: BAP-INF-120219-SILT

Lab Sample ID: 550-134181-10

Date Collected: 12/02/19 13:20

Matrix: Solid

Date Received: 12/03/19 09:55

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.049	E4	0.050	0.011	mg/Kg		03/02/20 10:53	03/05/20 19:21	1

Client Sample ID: PS-S-120219

Lab Sample ID: 550-134181-11

Date Collected: 12/02/19 13:50

Matrix: Water

Date Received: 12/03/19 09:55

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.019		0.00050	0.000063	mg/L		02/27/20 09:04	03/05/20 19:37	1

Client Sample ID: PS-01-120219

Lab Sample ID: 550-134181-12

Date Collected: 12/02/19 13:55

Matrix: Water

Date Received: 12/03/19 09:55

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.020		0.00050	0.000063	mg/L		02/27/20 09:04	03/05/20 19:40	1

Client Sample ID: PS-02-120219

Lab Sample ID: 550-134181-13

Date Collected: 12/02/19 14:00

Matrix: Water

Date Received: 12/03/19 09:55

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.021		0.00050	0.000063	mg/L		02/27/20 09:04	03/05/20 19:42	1

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-2

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 550-203902/1-A

Matrix: Water

Analysis Batch: 204633

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 203902

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	ND	E8	0.00050	0.000063	mg/L	-	02/27/20 09:04	03/04/20 20:30	1

Lab Sample ID: LCS 550-203902/2-A

Matrix: Water

Analysis Batch: 204633

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 203902

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cobalt	0.100	0.0990		mg/L	-	99	80 - 120

Lab Sample ID: LCSD 550-203902/3-A

Matrix: Water

Analysis Batch: 204633

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 203902

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Cobalt	0.100	0.0976		mg/L	-	98	80 - 120	1	20

Lab Sample ID: 550-134181-1 MS

Matrix: Water

Analysis Batch: 204633

Client Sample ID: BAP-01-120219-1

Prep Type: Total/NA

Prep Batch: 203902

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cobalt	0.0013		0.100	0.0899		mg/L	-	89	75 - 125

Lab Sample ID: 550-134181-1 MSD

Matrix: Water

Analysis Batch: 204633

Client Sample ID: BAP-01-120219-1

Prep Type: Total/NA

Prep Batch: 203902

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Cobalt	0.0013		0.100	0.0883		mg/L	-	87	75 - 125	2	20

Lab Sample ID: MB 550-204276/1-A

Matrix: Solid

Analysis Batch: 204710

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 204276

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	ND	E8	0.050	0.011	mg/Kg	-	03/02/20 10:53	03/05/20 19:06	1

Lab Sample ID: LCS 550-204276/2-A

Matrix: Solid

Analysis Batch: 204710

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 204276

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cobalt	9.98	9.73		mg/Kg	-	97	80 - 120

Lab Sample ID: LCSD 550-204276/3-A

Matrix: Solid

Analysis Batch: 204710

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 204276

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Cobalt	9.97	9.94		mg/Kg	-	100	80 - 120	2	20

Eurofins TestAmerica, Phoenix

QC Sample Results

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-2

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: 550-134181-9 MS

Matrix: Solid

Analysis Batch: 204710

Client Sample ID: BAP-INF-120219-SED

Prep Type: Total/NA

Prep Batch: 204276

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cobalt	0.66		10.0	9.85		mg/Kg		92	75 - 125

Lab Sample ID: 550-134181-9 MSD

Matrix: Solid

Analysis Batch: 204710

Client Sample ID: BAP-INF-120219-SED

Prep Type: Total/NA

Prep Batch: 204276

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Cobalt	0.66		9.95	9.51		mg/Kg		89	75 - 125	4	20

QC Association Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-2

Metals

Prep Batch: 203902

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-134181-1	BAP-01-120219-1	Total/NA	Water	3005A	
550-134181-2	BAP-01-120219-5	Total/NA	Water	3005A	
550-134181-3	BAP-01-120219-9	Total/NA	Water	3005A	
550-134181-4	BAP-02-120219-0.5	Total/NA	Water	3005A	
550-134181-5	BAP-02-120219-1	Total/NA	Water	3005A	
550-134181-6	BAP-02-120219-1.5	Total/NA	Water	3005A	
550-134181-7	DUP-02-120219	Total/NA	Water	3005A	
550-134181-8	BAP-INF-120219	Total/NA	Water	3005A	
550-134181-11	PS-S-120219	Total/NA	Water	3005A	
550-134181-12	PS-01-120219	Total/NA	Water	3005A	
550-134181-13	PS-02-120219	Total/NA	Water	3005A	
MB 550-203902/1-A	Method Blank	Total/NA	Water	3005A	
LCS 550-203902/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 550-203902/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	
550-134181-1 MS	BAP-01-120219-1	Total/NA	Water	3005A	
550-134181-1 MSD	BAP-01-120219-1	Total/NA	Water	3005A	

Prep Batch: 204276

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-134181-9	BAP-INF-120219-SED	Total/NA	Solid	3050B	
550-134181-10	BAP-INF-120219-SILT	Total/NA	Solid	3050B	
MB 550-204276/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 550-204276/2-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 550-204276/3-A	Lab Control Sample Dup	Total/NA	Solid	3050B	
550-134181-9 MS	BAP-INF-120219-SED	Total/NA	Solid	3050B	
550-134181-9 MSD	BAP-INF-120219-SED	Total/NA	Solid	3050B	

Analysis Batch: 204633

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-134181-1	BAP-01-120219-1	Total/NA	Water	6020B	203902
550-134181-2	BAP-01-120219-5	Total/NA	Water	6020B	203902
550-134181-3	BAP-01-120219-9	Total/NA	Water	6020B	203902
MB 550-203902/1-A	Method Blank	Total/NA	Water	6020B	203902
LCS 550-203902/2-A	Lab Control Sample	Total/NA	Water	6020B	203902
LCSD 550-203902/3-A	Lab Control Sample Dup	Total/NA	Water	6020B	203902
550-134181-1 MS	BAP-01-120219-1	Total/NA	Water	6020B	203902
550-134181-1 MSD	BAP-01-120219-1	Total/NA	Water	6020B	203902

Analysis Batch: 204710

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-134181-9	BAP-INF-120219-SED	Total/NA	Solid	6020B	204276
550-134181-10	BAP-INF-120219-SILT	Total/NA	Solid	6020B	204276
MB 550-204276/1-A	Method Blank	Total/NA	Solid	6020B	204276
LCS 550-204276/2-A	Lab Control Sample	Total/NA	Solid	6020B	204276
LCSD 550-204276/3-A	Lab Control Sample Dup	Total/NA	Solid	6020B	204276
550-134181-9 MS	BAP-INF-120219-SED	Total/NA	Solid	6020B	204276
550-134181-9 MSD	BAP-INF-120219-SED	Total/NA	Solid	6020B	204276

Analysis Batch: 204711

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-134181-4	BAP-02-120219-0.5	Total/NA	Water	6020B	203902

Eurofins TestAmerica, Phoenix

QC Association Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-2

Metals (Continued)

Analysis Batch: 204711 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-134181-5	BAP-02-120219-1	Total/NA	Water	6020B	203902
550-134181-6	BAP-02-120219-1.5	Total/NA	Water	6020B	203902
550-134181-7	DUP-02-120219	Total/NA	Water	6020B	203902
550-134181-8	BAP-INF-120219	Total/NA	Water	6020B	203902
550-134181-11	PS-S-120219	Total/NA	Water	6020B	203902
550-134181-12	PS-01-120219	Total/NA	Water	6020B	203902
550-134181-13	PS-02-120219	Total/NA	Water	6020B	203902

Lab Chronicle

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-2

Client Sample ID: BAP-01-120219-1

Lab Sample ID: 550-134181-1

Date Collected: 12/02/19 10:45

Matrix: Water

Date Received: 12/03/19 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			203902	02/27/20 09:04	SGO	TAL PHX
Total/NA	Analysis	6020B		1	204633	03/04/20 20:42	SRA	TAL PHX

Client Sample ID: BAP-01-120219-5

Lab Sample ID: 550-134181-2

Date Collected: 12/02/19 10:50

Matrix: Water

Date Received: 12/03/19 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			203902	02/27/20 09:04	SGO	TAL PHX
Total/NA	Analysis	6020B		1	204633	03/04/20 20:44	SRA	TAL PHX

Client Sample ID: BAP-01-120219-9

Lab Sample ID: 550-134181-3

Date Collected: 12/02/19 10:55

Matrix: Water

Date Received: 12/03/19 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			203902	02/27/20 09:04	SGO	TAL PHX
Total/NA	Analysis	6020B		1	204633	03/04/20 20:46	SRA	TAL PHX

Client Sample ID: BAP-02-120219-0.5

Lab Sample ID: 550-134181-4

Date Collected: 12/02/19 11:30

Matrix: Water

Date Received: 12/03/19 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			203902	02/27/20 09:04	SGO	TAL PHX
Total/NA	Analysis	6020B		1	204711	03/05/20 19:27	ARE	TAL PHX

Client Sample ID: BAP-02-120219-1

Lab Sample ID: 550-134181-5

Date Collected: 12/02/19 11:35

Matrix: Water

Date Received: 12/03/19 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			203902	02/27/20 09:04	SGO	TAL PHX
Total/NA	Analysis	6020B		1	204711	03/05/20 19:29	ARE	TAL PHX

Client Sample ID: BAP-02-120219-1.5

Lab Sample ID: 550-134181-6

Date Collected: 12/02/19 11:40

Matrix: Water

Date Received: 12/03/19 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			203902	02/27/20 09:04	SGO	TAL PHX
Total/NA	Analysis	6020B		1	204711	03/05/20 19:31	ARE	TAL PHX

Lab Chronicle

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-2

Client Sample ID: DUP-02-120219

Lab Sample ID: 550-134181-7

Date Collected: 12/02/19 11:45

Matrix: Water

Date Received: 12/03/19 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			203902	02/27/20 09:04	SGO	TAL PHX
Total/NA	Analysis	6020B		1	204711	03/05/20 19:33	ARE	TAL PHX

Client Sample ID: BAP-INF-120219

Lab Sample ID: 550-134181-8

Date Collected: 12/02/19 12:55

Matrix: Water

Date Received: 12/03/19 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			203902	02/27/20 09:04	SGO	TAL PHX
Total/NA	Analysis	6020B		1	204711	03/05/20 19:35	ARE	TAL PHX

Client Sample ID: BAP-INF-120219-SED

Lab Sample ID: 550-134181-9

Date Collected: 12/02/19 13:10

Matrix: Solid

Date Received: 12/03/19 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			204276	03/02/20 10:53	MGM	TAL PHX
Total/NA	Analysis	6020B		1	204710	03/05/20 19:19	ARE	TAL PHX

Client Sample ID: BAP-INF-120219-SILT

Lab Sample ID: 550-134181-10

Date Collected: 12/02/19 13:20

Matrix: Solid

Date Received: 12/03/19 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			204276	03/02/20 10:53	MGM	TAL PHX
Total/NA	Analysis	6020B		1	204710	03/05/20 19:21	ARE	TAL PHX

Client Sample ID: PS-S-120219

Lab Sample ID: 550-134181-11

Date Collected: 12/02/19 13:50

Matrix: Water

Date Received: 12/03/19 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			203902	02/27/20 09:04	SGO	TAL PHX
Total/NA	Analysis	6020B		1	204711	03/05/20 19:37	ARE	TAL PHX

Client Sample ID: PS-01-120219

Lab Sample ID: 550-134181-12

Date Collected: 12/02/19 13:55

Matrix: Water

Date Received: 12/03/19 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			203902	02/27/20 09:04	SGO	TAL PHX
Total/NA	Analysis	6020B		1	204711	03/05/20 19:40	ARE	TAL PHX

Lab Chronicle

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-2

Client Sample ID: PS-02-120219

Lab Sample ID: 550-134181-13

Date Collected: 12/02/19 14:00

Matrix: Water

Date Received: 12/03/19 09:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3005A			203902	02/27/20 09:04	SGO	TAL PHX
Total/NA	Analysis	6020B		1	204711	03/05/20 19:42	ARE	TAL PHX

Laboratory References:

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-2

Laboratory: Eurofins TestAmerica, Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Arizona	State Program	AZ0728	06-09-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
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Method Summary

Client: Wood E&I Solutions Inc
Project/Site: APS Cholla BAP SW Samples

Job ID: 550-134181-2

Method	Method Description	Protocol	Laboratory
6020B	Metals (ICP/MS)	SW846	TAL PHX
3005A	Preparation, Total Metals	SW846	TAL PHX
3050B	Preparation, Metals	SW846	TAL PHX

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PHX = Eurofins TestAmerica, Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Chain of Custody Record

372469



Environment TestAmerica

Address: _____

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other: _____

TAL-8210

134181

Client Contact		Project Manager: Emily LeDolce		Site Contact:		Date:		COC No.:	
Company Name: Wood		Tel/Email: emily.ledolce@woodcorp.com		Lab Contact:		Carrier:		1 of 2 COCs	
Address: 4600 E. Washington Ste. 1000		Analysis Turnaround Time							
City/State/Zip: Phoenix, AZ 85034		<input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS							
Phone: (602) 733-1000		TAT if different from below							
Fax:		2 weeks							
Project Name: APS Cholla BAP SW Samples		1 week							
Site:		2 days							
PO # 1420182040.yxxx.04		1 day							

Sample Identification	Sample Date	Sample Time	Sample Type (G-Comp, G-Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Sample Specific Notes:
BAP-01-120219-1	12/2/19	10:45	G	W	4			
BAP-01-120219-5		10:50						
BAP-01-120219-9		10:55						
BAP-02-120219-05		11:30						
BAP-02-120219-1		11:35						
BAP-02-120219-1.5		11:40						
DUP-02-120219		11:45						
BAP-INF-120219	12/2/19	12:55	G	W	4			
BAP-INF-120219-SED	12/2/19	13:10	G	S	2			
BAP-INF-120219-SILT	12/2/19	13:20	G	S	2			
PS-S-120219		13:50	G	W	4			
PS-01-120219		13:55	G	W	4			

Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Special Instructions/QC Requirements & Comments:

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Custody Seals Intact: ☐ Yes ☐ No

Custody Seal No.:

Relinquished by: *Eric R* Company: *Wood* Date/Time: *14:10*

Relinquished by: *Michael Brubaker* Company: *AC&T* Date/Time: *12/3/19 9:30*

Relinquished by: *DAVID HANCOCK* Company: *AC&T* Date/Time: *12/3/19 9:35*

Received by: *Michael Brubaker* Date/Time: *12/3/19 9:30*

Received in Laboratory by: *Michael Brubaker* Date/Time: *12-3-19 09:58*

Cooler Temp. °C: Obs'd: _____

Corrid: _____

Therm ID No.: _____

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

COCs: *1* of *2* COCs

Sampler: *1*

For Lab Use Only:

1/1k-in Client: _____

2/ Sampling: _____

3/ SDG No.: _____

Sample Specific Notes:

Cooler 1

metals cooler 4

metals, ORP (redox) cooler 4

Cooler 1

Cooler 2

Cooler 3

Cooler 4

Cooler 5

Cooler 6

Cooler 7

Cooler 8

Cooler 9

Cooler 10

Cooler 11

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Cooler 95

Cooler 96

Cooler 97

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Cooler 100

Address: _____

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TAL-8210

[illegible]

Login Sample Receipt Checklist

Client: Wood E&I Solutions Inc

Job Number: 550-134181-2

Login Number: 134181

List Source: Eurofins TestAmerica, Phoenix

List Number: 1

Creator: Gravlin, Andrea

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	False	
Cooler Temperature is acceptable.	False	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

APPENDIX L

WOOD TECHNICAL MEMORANDUM DOCUMENTING A DEWATERING EVALUATION FOR THE BAP

Technical Memorandum

To: Arizona Public Service Company

Project No: 14-2018-2040

By: Ardeshir Sharifabadi, PE, PMP

Reviewed by: Maren Henley, PE

Date: January 31, 2021

**Re: BAP POST-OPERATION WATER BALANCE AND DEWATERING PROJECTION
Arizona Public Service Cholla Power Plant – Navajo County, Arizona**

1.0 INTRODUCTION

This Technical Memorandum (Tech Memo) documents the dewatering projection developed for post-operation conditions at the Bottom Ash Pond (BAP), located at the Arizona Public Service Company (APS) Cholla Power Plant in Navajo County, Arizona (Cholla or the Plant). The BAP is a surface impoundment that receives coal combustion residuals (CCR) and, as such, is regulated by 40 Code of Federal Regulations (CFR) Part 257 Subpart D (herein referred to as the CCR Rule) (Federal Register, 2018). As documented in previous reports (e.g., Wood Environment & Infrastructure Solutions, Inc. [Wood], 2019a and 2019b), APS is in the process of selecting and designing a remedy to address exceedances of CCR constituents in the downgradient aquifer. The dewatering projection documented in this Tech Memo was developed by Wood to support APS's site characterization efforts in advance of selecting a remedy/corrective measure for the BAP.

The intent of the dewatering projection is to evaluate the duration of time until seepage from the BAP has declined to a steady state level. The dewatering projection is based on a water balance of the BAP that accounts for precipitation, evaporation, and natural seepage through the foundation of the BAP dam. The following sections detail the site background, basis for and development of the water balance model, results of the dewatering projection, and recommendations.

1.1 Site Background

A description of the site background, groundwater monitoring system associated with CCR rule compliance, and historical operational information is presented in the *2018 Annual Groundwater Monitoring and Corrective Action Report* (Wood, 2019a). The subject of this dewatering projection is the BAP, a surface water impoundment and CCR Unit that receives bottom ash slurry from the Plant. The BAP is constructed primarily on the Moqui member of the Moenkopi Formation, a Triassic siltstone/mudstone with gypsum stringers and a low vertical hydraulic permeability. The BAP has a total surface area of approximately 80 acres and a total storage capacity (solids and water) of approximately 2,300 acre-feet when the storage pool water level is at the Arizona Department of Water Resources permitted maximum of 5,117.8 feet (ft) above mean sea level (amsl).

The BAP dam is an earthen, zoned embankment dam consisting of a central clay core surrounded by an outer sand and gravel shell. The BAP was constructed by damming a tributary to Tanner Wash and is



comprised of southern and eastern dams operating as one dam system. The BAP has no fixed intake or outlet water work structures. Seepage water from the BAP has been observed on the downgradient sides of the dam, beginning shortly after the BAP was placed into service. APS has constructed seepage intercept systems intended to reduce the volume of water daylighting downgradient of the dam.

1.2 Basis for Dewatering Projection using Water Balance Model

APS is currently planning for pond closures as part of plant decommissioning activities. Part of the planning involves long-term cost estimation for infrastructure, operations, and maintenance; the assumptions on which the cost estimate is founded rely on engineering estimates of how long water will be present in the ponds and thus how long the seepage intercept systems will be required to operate. APS developed a water balance for the Fly Ash Pond (FAP) post-operational period (AECOM, 2018) but had not yet developed a water balance for the BAP.

The conceptual approach to the dewatering projection is to develop a water balance that will start with an estimated volume of water in the BAP at the time discharges to the pond cease (i.e., the post-operation period) and then project inflows and outflows over time until the net flow reaches steady state. The water balance does not include additional measures to dewater the pond, the approach represents gravity drain-down only.

The current schedule is for the Plant to cease operation and discharges to the BAP in 2025. The BAP must be closed no later than October 17, 2028. This leaves approximately 3 years for three key activities; the BAP to dewater enough for earthwork to begin within the BAP, regrading the bottom ash material within the BAP, installing a cover and surface water diversion features.

2.0 WATER BALANCE MODEL DEVELOPMENT

The dewatering projection consists of a water balance spreadsheet model (Water Balance Model). The sources and losses of water to the BAP are generalized in a flow diagram of the various components of the Water Balance Model (Figure 1). The components of the Water Balance Model include the following: initial conditions, potential inflows, and potential outflows. These are described below.

Initial Condition at the BAP:

- Free water in the BAP at the time discharges to the BAP cease (based on assumed water elevation, and that no efforts were made to dewater the pond prior to cessation)
- Interstitial water in bottom ash material (based on assumed water elevation)

Potential Inflows to the BAP:

- Direct precipitation within the footprint of the BAP
- Surface water runoff from adjacent areas of the BAP

Potential Outflows from the BAP:

- Evaporation
- Seepage at base of BAP dam center line

These water balance components are discussed in detail within the following sections.

2.1 Initial Conditions

As previously stated, the volume of water in the BAP at the time discharges to the BAP cease is considered the initial condition for the Water Balance Model. Wood assumes the water level is 5,115 ft amsl when operation ceases and is therefore the initial condition for the total volume of water in the BAP and subsequently the Water Balance Model. Ideally, efforts will be made prior to cessation to start dewatering the BAP.

The total volume of water in the BAP consists of the volume of free water in the pond and the volume of interstitial water in the sediments. The total volume of free water was estimated using a bathymetric survey conducted by APS in 2010 (Bathymetry Survey # 161566, 2010). The topography was used to develop a relationship between surface water elevation and pond volume (Figure 2). The bathymetric survey was also used to estimate the relationship between the surface water elevation and the surface area of the pond, as this will affect the surface area available for evaporation as the water elevation decreases. Wood used the bathymetry survey for the Main Reservoir and West Cell (Areas 1 and 2 on Figure 3a) to estimate the free water. However, the bathymetry for the East Cell was not included because the topography of that portion of the BAP is continually changing or being graded as part of operations. Wood assumed that at the time operation ceases the water would be negligible in this area and included it as part of the estimate of interstitial water discussed below.

Interstitial water is water stored in the pore spaces of the sediment at the bottom of the BAP. Wood estimated the interstitial water volume by comparing native topography to the current surface topography of BAP materials to develop a relationship between elevation and volume of saturated material (bottom ash and interstitial water). Wood assumed interstitial water volume to be 40% of the total volume of solids (Bera et al., 2007).

Table 1 presents the cumulative interstitial water and cumulative free water per elevation in 10-ft increments. Figure 2 shows the same information graphically with a polynomial line of best fit applied to the data.

Table 1: Total Volume of Water at the BAP by Elevation

Elevation (ft amsl)	Free Water Pond Area (sq. ft)	Cumulative Interstitial Water (cu. ft)	Cumulative Free Water (cu. ft)	Cumulative Total Water Available for Seepage (cu. ft)
5,050	0	0	0	0
5,060	0	90,819	0	90,819
5,070	0	1,199,533	0	1,199,533
5,080	83,754	3,278,334	67,334	3,345,668
5,090	282,064	5,821,940	2,124,678	7,946,618
5,100	377,089	9,659,955	5,449,988	15,109,943
5,110	531,648	15,836,376	9,808,698	25,645,074
5,120	2,410,672	22,593,556	20,144,877	42,738,433
5,123 ¹	3,006,929	23,153,609	28,339,866	51,493,475

Notes:

1. The top of embankment elevation is 5,123 ft amsl
amsl – above mean sea level
cu. – cubic
ft – feet
sq – square

2.2 Potential Inflows

Potential inflows to the BAP are direct precipitation and precipitation runoff from the upgradient watershed. Based on an evaluation of the topography and a watershed delineation, Wood estimates that no runoff from upland watershed areas will contribute inflows to the BAP. Therefore, only direct precipitation on the entire surface of the BAP is included as an inflow in the water balance as presented on the Figure 3a.

Monthly precipitation at Cholla was estimated using the National Oceanic and Atmospheric Administration (NOAA) National Climatic Data Center (NCDC) records for average monthly precipitation in Winslow, Arizona for the time period of 2007 and 2014 (NOAA NCDC, 2007-2014). Data from Winslow, which is 30 miles away from Cholla, are considered applicable. The monthly precipitation data set is the same data set for both the Fly Ash Pond (FAP) and the BAP. Table 2 presents the average monthly precipitation and evaporation.

Table 2: Average Monthly Precipitation and Evaporation

Month	Monthly Precipitation¹ (inches)	Monthly Pan Evaporation² (inches)	Monthly Free Water Evaporation³ (inches)
Jan	0.53	1.99	1.35
Feb	0.42	3.07	2.09
Mar	0.37	5.50	3.74
Apr	0.10	8.08	5.49
May	0.22	10.93	7.43
Jun	0.06	13.05	8.87
Jul	1.07	11.86	8.06
Aug	1.25	10.14	6.90
Sep	0.70	8.71	5.92
Oct	0.29	6.08	4.13
Nov	0.56	3.36	2.28
Dec	0.58	1.92	1.31
Total	6.14	84.69	57.59

Notes:

1. Winslow average monthly precipitation data from 2007 to 2014 (NOAA NCDC, 2007-2014).
2. Winslow average monthly pan evaporation data. (NOAA, 1982).
3. Monthly free water evaporation is 68% of pan evaporation data ((NOAA, 1982).

2.3 Potential Outflows

Potential outflows from the BAP are evaporation from the surface and seepage through the subsurface. Monthly evaporation at Cholla was estimated using NOAA NCDC records for average monthly pan evaporation in Winslow, Arizona (NOAA, 1982). Pan evaporation represents the potential, or maximum possible, evaporation rate from a free water surface. As such, pan evaporation is consistently greater than the actual free water evaporation from a shallow body of water (Eagleman, 1967). To account for this, the pan evaporation rate was scaled by a factor of 0.68 (NOAA, 1982 and Kohler, 1954). Table 2 presents the average monthly pan and resulting free water evaporation values.

Seepage through the subsurface (aka seepage loss) was estimated using the two-dimensional numerical groundwater flow modeling software SEEP/W. The following sections describe the development, calibration, and results of the SEEP/W model.

2.4 Numerical Modeling to Estimate Seepage Loss

Wood used SEEP/W (GEOSLOPE, 2016) to develop a model to estimate potential seepage flow rates to the vadose zone and groundwater. SEEP/W is a finite element numerical model for steady state and transient simulations of both saturated and unsaturated water flow through porous media using the basis of Darcy's Law. The analysis discussed herein assumed steady state saturated flow.

Inputs to the SEEP/W model include elevation datum to define layer thickness, hydraulic conductivity of geologic (vertical) layers, and anisotropy ratio (K_y/K_x). The model outputs a potentiometric surface and a flow rate (volume per time) at a designated point. Site-specific observations of flow from totalizer measurements at APS seepage collection systems around the BAP as well as water level measurements from nearby monitoring wells were used for calibration data. The calibrated model was used to develop a relationship curve between water level elevation in the BAP and seepage flux through the subsurface.

Because SEEP/W is a two-dimensional model, Wood developed a series of four representative cross-sections around the BAP dam (Figure 3). The locations were intended to correspond to the location of a seepage collection system (and thus real-life observations for use in model calibration), and for three of the four cross-sections this is the case. Section B is located in an area with no corresponding seepage collection system; therefore, calibrated properties for this section were set equal to those of Section A.

2.4.1 SEEP/W Conceptual Site Model

Key features of the conceptual site model that informed the layering and geometry of the SEEP/W model are as follows:

- The alluvium overburden is unconsolidated, heterogeneous, and predominantly consists of clay and silt, with some sand and gravel.
- Bedrock (Moenkopi Moqui) is composed of pale brown to reddish-brown gypsiferous mudstone and siltstone beds.
- The Moenkopi Holbrook Formation, where present, is found above the Moqui. It is composed of pale-red, thin to thick bedded sandstone with medium to very fine poorly sorted sand and considerable silt.
- The BAP Dam is an earthen, zoned embankment dam consisting of a central clay core surrounded by shell (sand and gravel – random material zone). A cut-off wall was constructed in the areas where the alluvium/Moqui contact is deep.
 - The southern BAP dam was constructed on alluvial sediments and Moenkopi Moqui geologic units within a tributary to Tanner Wash, which is significant because the depth of alluvial material is notably greater near the center of the wash compared to the sides of the wash.
 - The eastern BAP dam was constructed on alluvial sediments, Moenkopi Holbrook, Moenkopi Moqui, and Chinle (note the Chinle Formation is not present where cross-sections were drawn). The eastern BAP dam generally is aligned parallel to flow in Tanner Wash.

The geologic units noted above were included as layers in the SEEP/W model. Table 3 presents the saturated hydraulic conductivity (K_x) and anisotropy ratio (K_y/K_x) used in the model for each of these materials.

Table 3: Material Property for Seepage Modeling

Material	Saturated Kx (ft/day)	Ky/Kx Ratio
Alluvium Overburden ¹	0.96	0.1
Holbrook ¹	0.0142	1
Bedrock (Moqui) ¹	0.017	0.1
Central Clay Core ²	0.00142	1
Compacted Bottom Ash ²	15	1
Cut-off Wall ²	0.0028	1
Shell ²	0.0142	1

Notes:

ft/day = feet per day

1. Arizona Public Service Company, 1975

2. URS, August 12, 2008

Based on the boring logs and observations made during site investigative activities, the geologic contact between the Holbrook and Moqui Formations is weathered and laminated, and is thought to be a conduit for seepage from the BAP. Therefore, an interface layer was defined in SEEP/W to represent this area of high flow from the BAP. The hydraulic conductivity of this interface was adjusted during calibration (Section 2.4.3). The hydraulic conductivity of the other layers remained as shown in Table 3.

2.4.2 Cross-section Development

As stated above, the two-dimensional SEEP/W model needed to be adapted to the three-dimensional BAP dam system. To do this, Wood developed four representative cross-sections using information obtained from piezometer boring logs and completions reports and previous Site reports (e.g., Wood, 2019b; AECOM, 2016; and APS, 1975). The locations of the cross-sections are shown on Figure 3 and the basis for the locations is summarized below:

Section A (West Abutment): Section A is located at the southwest corner of the BAP. Seepage at the western abutment of the southern dam is monitored using a weir. After flow through the weir, seepage infiltrates back into the aquifer and is collected in the Toe Drain Seepage Intercept System. Figure 4 presents a conceptual geological cross-section of Section A.

Section B (Embankment Center): Section B is located east of Section A near the center of the southern portion of the BAP dam. At this location, the bedrock depth is almost 100 ft below the ground surface at the deepest point. There is a soil bentonite slurry cut-off wall installed at the center of the embankment. There is no seepage collection system or monitoring at this location. Figure 5 presents a conceptual geological cross-section of Section B.

Section C (Petroglyph): Section C is located at the southeast corner of the BAP. Seepage is collected and monitored in the Petroglyph Seepage Intercept System, which was installed in 1993. The seepage intercept system consists of two, 4- to 6-ft-deep seepage intercept trenches with a total length of approximately 250 ft sloped to one, 4-ft-diameter sump installed to approximately 10 ft below ground surface (bgs). Figure 6 presents a conceptual geological cross-section of Section C.

Section D (P-226): Section D is located north of Section C on the eastern portion of the BAP dam. Seepage at this point is collected and monitored in the P-226 Seepage Intercept System, which was installed in 1993 to intercept flow in the alluvium. The seepage intercept system consists of ten, 5-inch-diameter pumping wells spaced approximately 50 to 70 ft apart and installed to around 40 ft bgs in the alluvium. Pumps are installed in eight of the wells and the pumps are set to operate based on pre-determined setpoints of groundwater elevation. Figure 7 presents a conceptual geological cross-section of Section D.

To apply modeled seepage across the length of the dam section represented by one of the aforementioned cross-sections, Wood defined a “projection limit” for each of the cross-sections (Figure 3). The projection limit is the distance across which the modeled flow from the SEEP/W simulation will be applied to obtain an overall seepage flow rate for a given section of dam. The projection limit is based on dam construction, geology, and engineering judgment.

2.4.3 SEEP/W Calibration

The seepage model was calibrated to observed flow and water level elevations from seepage collection systems and monitoring wells, respectively. Calibration was attempted by adjusting the hydraulic conductivity of the interface layer between Holbrook/Moqui or Alluvium/Moqui, where appropriate, until the amount of seepage modeled at the seepage intercept systems satisfactorily matched the observed seepage, and the modeled water elevation satisfactorily matched measured water elevations in monitoring wells. Observed seepage rates from three seepage intercept systems, corresponding to Sections A, C, and D, were provided by APS. These seepage rates over time are shown in Figure 3 through Figure 5 and summarized in Table 3. There is no seepage intercept system associated with Section B. Therefore, there are no seepage rates to compare against to calibrate the model with this method. Instead, attempts were made to calibrate the model based on the observed water elevations at downgradient monitor wells (discussed below).

To obtain a representative flow from the seepage intercept systems, Wood defined an “influence limit” for the systems using knowledge of area geology and engineering judgment. The influence limit is the distance across which observed flow from APS data was subdivided to obtain a representative target flow rate for the two-dimension model. Once the model was calibrated to the target flow rate, the modeled flow from SEEP/W was multiplied by the projection limit to obtain an estimated flow rate through the section of dam.

Data provided by APS (Figures 8 through 10) indicate that seepage flow rate is proportional to water elevation. Wood used a higher water level to correlate to a seepage rate that was used for calibration. Table 4 summarizes the pond elevations and associated observed average flow rates for each section. The Seep/W analysis outputs are presented in Attachment A.

Initially, the hydraulic conductivity of materials listed in Table 3 were adjusted to calibrate the model to mimic seepage flow rates and the observed water elevations. However, this required increasing the hydraulic conductivities up to three to five times the original assumed hydraulic conductivity in order to calibrate. As a result, the hydraulic conductivities were not realistic. Therefore, a fractured layer at the top of the Moqui was added and the seepage flow rates were calibrated by changing the hydraulic conductivity of the fractured layer. Table 5 presents the hydraulic conductivities used for the fractured Moqui layer to calibrate sections A, C and D.

However, where Section B is located the Alluvium is continuous between the upstream portion in the BAP to downstream of the dam, and the top of the Moqui is not in connection with the wells used for calibration. So, there is no fractured layered assumed for this section. Similar to the other sections, the hydraulic conductivities were increased to attempt to calibrate the model to water elevations in downgradient wells. But the hydraulic conductivities required were unrealistic; therefore, the hydraulic conductivities presented in Table 3 were used for calculating the seepage flow rate and the model was not calibrated. The calculated seepage flow rates were similar to the seepage flow rates calculated for the other sections. This suggests there may be base flow in the alluvium contributing the water elevations in the monitor wells that cannot be accounted for in this modeling approach.

Table 4: Average Seepage Flow per Pond Elevation

Section	Pond Elevation (ft. amsl)	Seepage Flow (gpm)
A (West Abutment)	5115	10
B (Embankment Center)	-	-
C (Petroglyph)	5115	7
D (P-226)	5115	9

Notes:

ft = feet

gpm = gallons per minute

Table 5: Calibrated Hydraulic Conductivity of Fractured Moqui Layer

Section	Saturated Kx (ft/day)
A (West Abutment)	55
B (Embankment Center)	NA
C (Petroglyph)	25
D (P-226)	55

Notes:

ft/day = feet per day

2.4.4 SEEP/W Model Results

SEEP/W model results are presented in Table 6.

Table 6: Modeled Seepage vs. Pond Water Level

Pond Water Level (ft amsl)	Section A (gpm)	Section B (gpm)	Section C (gpm)	Section D (gpm)
5,115	10.3	13.3	7.5	7.6
5,110	9.6	12.4	6.9	7.5
5,100	8.9	10.5	5.7	7.3
5,080	7.1	6.6	3.5	5.1
5,060	5.1	2.9	1.3	1.8

Notes:

ft = feet

amsl = above mean sea level

gpm = gallons per minute

Using the flow vs. pond water level relationship shown in Table 6, an average curve was developed (Figure 11). These estimates of seepage rate based on pond water elevation were then used to estimate seepage outflows in the Water Balance Model.

As presented in Figure 1, the water balance model is based on water leaving the system at the center of the dam. Therefore, an average curve was developed for water head versus water loss for the center of the dam through the foundation. Figure 11 presents the result for water lost versus pond elevation.

3.0 WATER BALANCE MODEL STRUCTURE AND EXECUTION

3.1 Structure

The Water Balance Model is an Excel spreadsheet set up to calculate inflows and outflows to and from the BAP on a monthly basis. The delta (net inflow or net outflow) is applied to the volume of water at end of the time step to calculate the new volume of water. The model starts at Year 1, which is assumed to be the first-year post-operations (i.e. no inflows from the Plant) and continues monthly until reaching a steady-state condition. The Water Balance Model assumes two distinct timeframes:

1. **Post-Operation:** in the post-operation timeframe, pumping to and from the BAP has ceased, the free water pond begins at "full" (i.e., surface water elevation is 5,115 ft amsl), and the topography of solids beneath the pond surface is similar to current conditions. The post-operation timeframe is assumed to end when the water balance indicates that the free water pond is empty (i.e., surface water elevation is less than 5,080 ft amsl). At this point the cover will be placed when the water elevation is at 5,080 ft amsl.
2. **Post-Closure:** in the post-closure timeframe, when the soil cover has been placed, the precipitation compared to evaporation was assumed to be a consistent flux through the cover. The assumption for the inflow flux is that 10% of precipitation will percolate through the soil cover. This period is the long-term condition of the BAP and the water balance would eventually reach a point where the seepage flow rate decreases to a rate similar to inflows and a steady-state condition is observed.

Activities that will presumably occur between the post-operation time period and the post-closure time period include re-grading of bottom ash material and placement of soil cover; however, these are not accounted for in the Water Balance Model.

3.2 Execution

Precipitation and evaporation were based on monthly averages shown on Table 2. A monthly volume was calculated based on the surface area of the BAP and free water pond for decreasing pond elevations starting with 5,115 ft amsl. The total monthly seepage loss was calculated based on the Seepage Lost Versus Pond Elevation Curves developed from the result of the Seep/W analysis (Figures 11). The initial seepage loss was calculated for a pond elevation of 5,115 ft amsl. The delta is the sum of precipitation, seepage lost, and evaporation, and was applied to the volume of available water to calculate a new volume of water. Using the Available Water Versus Elevation Curve (Figure 2) the new volume of water corresponded to a new pond water elevation and surface area for the next time step and the process repeated. Gallons per minute (gpm) was used for the water balance calculation as the seepage collection system report data around the BAP are in gpm.

3.3 Assumptions

Development of a water balance is an iterative process and a simplification of a three-dimensional complex system. The following assumptions were made to develop the Water Balance Model:

- When developing the seepage estimates with SEEP/W, a zone of influence/projection limit was developed for each section (Figure 3). The extent of the projection limit was based on dam construction, geology, and engineering judgment.
- Similar to the projection limit, an influence limit was assumed for the seepage collection systems. The extent of the influence limit was based on knowledge of area geology and engineering judgment. If this is overestimating the zone of influence then the result would be the analysis underestimates the total seepage.
- Based on the bathymetric survey, the bottom elevation of the pond in the BAP is approximately 5,080 ft amsl. Below this elevation, water is present in the pore space of bottom ash material (i.e., interstitial water), and the bottom ash material is assumed to be variably saturated. The seepage flow rate calculated by the SEEP/W model is assumed to be valid to a pond water elevation of 5,080 ft amsl. However, once the water elevation drops below 5,080 ft amsl, the BAP will be regraded, and a soil cover will be placed across the facility. Wood assumes that a portion of the water will be retained in the pore space as entrained water. This is represented in the Water Balance Model by scaling the seepage flow rate as 30% percent of the seepage flow rate at 5,080 ft amsl. There is no soil water characteristic curve available to represent the relationship between volumetric water content and matric suction. Therefore, the estimate of 30% was selected based on general volumetric water content versus suction (Fredlund, 1993).
- Precipitation on the surface of the bottom ash infiltrates quickly through the coarse bottom ash material and contributes to the interstitial water volume, and is not available for evaporation.
- APS will not backfill the ponds or regrade the BAP surface and install the soil cover until the pond water level drops below 5,080 ft amsl. After placement of the soil cover, the inflow flux through the soil cover (combined effects of precipitation and evaporation) is scaled to 10% of precipitation.

4.0 WATER BALANCE MODEL RESULTS

Figure 12 presents the seepage rate versus time. Figures 13a through 13g present total monthly inflow, outflow, and total drainage lost. Figure 14 presents the total volume of water versus time (drain down curve). The Water Balance Model predicts that with only gravity drain conditions, the BAP will continue to drain down to steady state over approximately 12 years during Post-Closure depending on the rate of seepage. Additionally, the rate of drain down decreases around 10 million cubic ft (year 9 to 10) which correlates to approximately 5,095 ft amsl. This is a point where inflows start to have more influence than outflows.

On Figure 12, the sharp reduction in the seepage rate represents the point where the free water pond has drained (i.e. a pond water elevation of 5,080 ft amsl) and the area can be graded and the soil cover placed (Post-Closure). Even though construction of the cover will take some time to complete, for the purpose of the water balance, the point after completion of the cover has been assumed to be a single point in time to distinguish between cover and no cover. Therefore, the system is going from a saturated to a variably saturated state and seepage flow rate was assumed to be constant and 30% of the previous seepage flow rate at 5,080 ft amsl. The seepage flow rate is approximately 9 gpm.

As mentioned, for this Water Balance the seepage flow rate remains constant during Post-Closure. Typically, the seepage flow rate would continue to decrease over time, and therefore the volume of water in the BAP over time would decrease at a slower rate than shown on Figure 14. At some point, the water balance would eventually reach a point where the seepage flow rate decreases to a rate similar to inflows, the volume of water entrained in the BAP remains approximately constant, and a steady-state condition is observed.

5.0 LIMITATIONS AND RECOMMENDATIONS

The dewatering projection presented herein was developed using a two-dimensional numerical seepage model and a spreadsheet model with monthly timesteps. Data inputs were based on average monthly values and calibrated model results. A number of assumptions went into the development of the projections, and as such, the result is given in terms of an estimated time range rather than a single value. The results are intended for use in estimating timeframes for cost estimate projections.

The main unknown variable in the Water Balance Model is the total quantity of seepage from the BAP. For the purpose of the Water Balance Model, this variable is estimated based on calibrating to historical flow rate data at the seepage intercept systems. There is evidence that the seepage intercept systems do not intercept all seepage from the BAP (i.e., boron is present in downgradient groundwater) and the accuracy of the data collected at each location affects the calibrated hydraulic conductivities, and therefore the estimated total seepage flow rates from the BAP. If data available for calibration can be improved, this dewatering estimate could be updated. In addition, testing and data could be collected on the geotechnical and hydraulic properties of the BAP material to help better define seepage flow in variably saturated conditions. If the material properties are better defined, the Seep/W model could be run as transient model instead of as a steady state model. Furthermore, monitoring the pond water level for a short period of time (e.g. several months to a year), monitoring the flow rate at the seepage collection systems around the BAP after operations cease, and recalibration of the Water Balance Model can reduce the assumptions associated with the dewatering timeline. For these reasons, the Water Balance Model is conservative and may be

underestimating the seepage rates and evaporation losses from the BAP. An underestimation of seepage and evaporation loss would result in a longer time to drain the pond.

The Water Balance Model does suggest that additional activities should be considered to meet the closure schedule for the BAP:

- Dewater and reduce the water level in the pond as much as possible prior to and during decommissioning, and
- Initiate earthwork and placing the soil cover as soon as practical to reduce the impact of precipitation to the total volume of water remaining in the BAP.

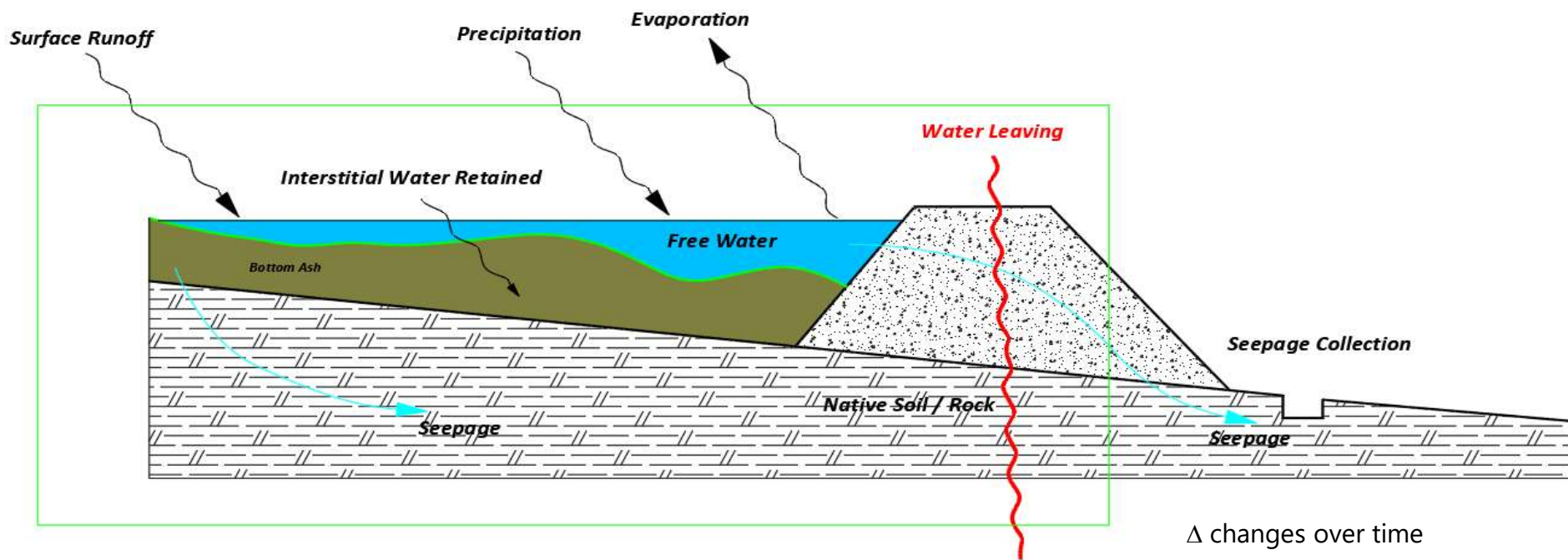
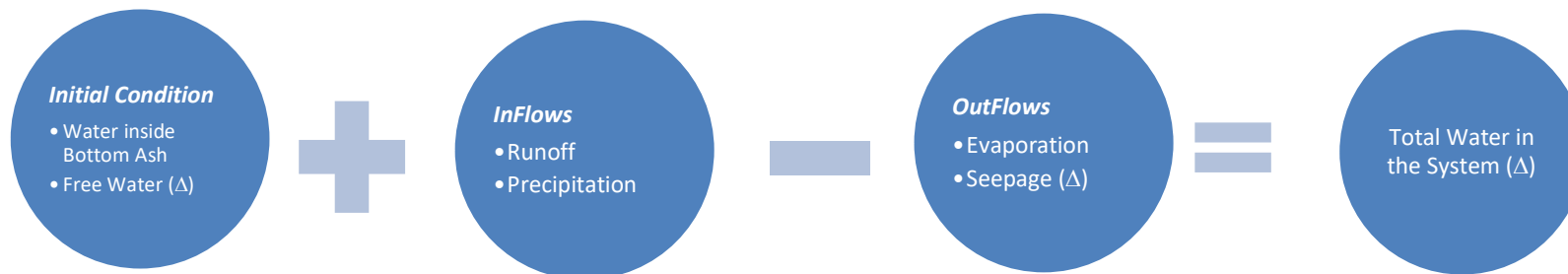
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FIGURES



wood.

CLIENT:

APS Cholla Power Plant, Navajo County, AZ

PROJECT:

BAP POST-OPERATION WATER BALANCE

TITLE:

Water Balance Model and Components

DATE:

Jan 2021

JOB No:

14-2018-2040

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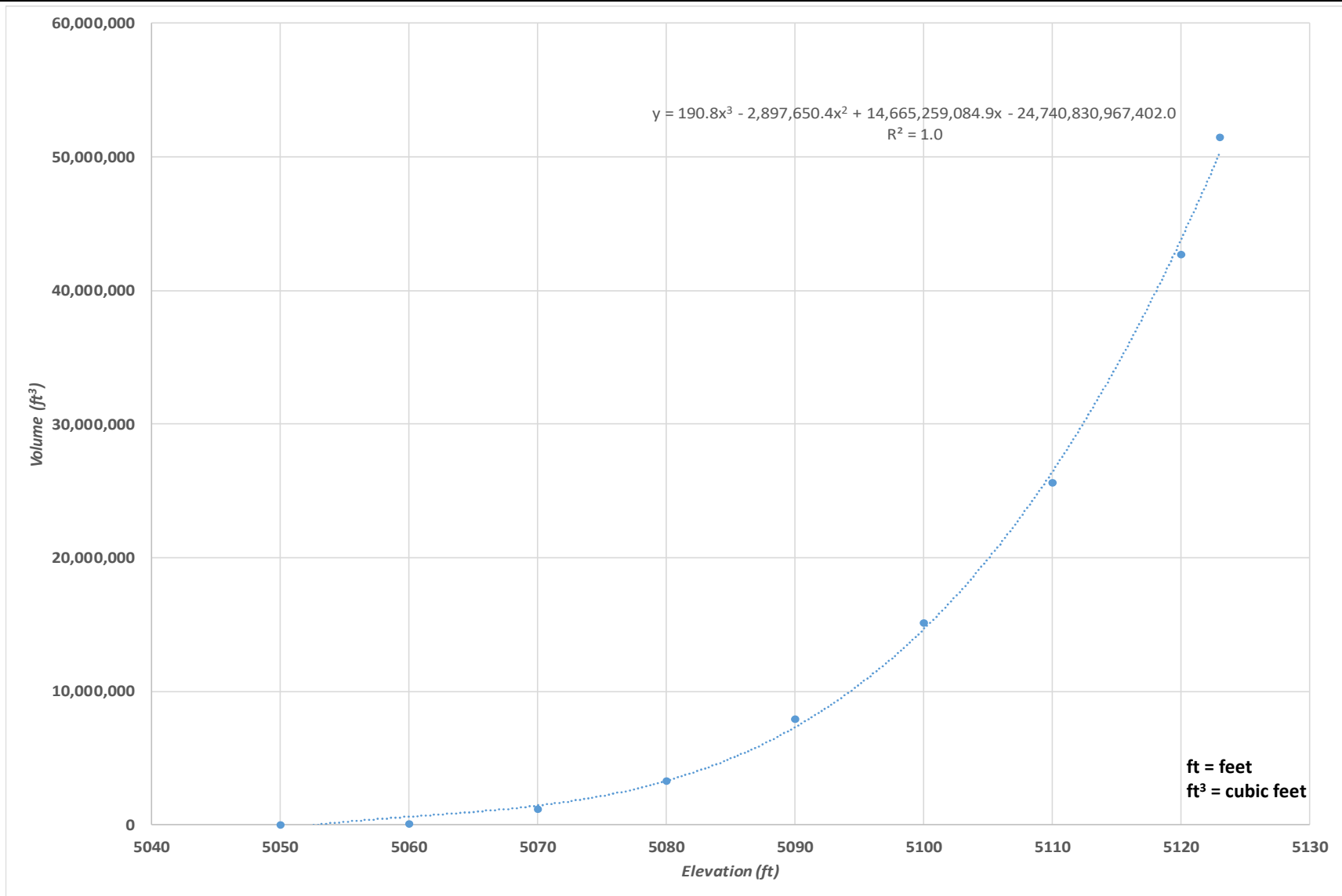
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FIGURE:

1

REV.

A



wood.

CLIENT:

APS Cholla Power Plant, Navajo County, AZ

PROJECT:

BAP POST-OPERATION WATER BALANCE

TITLE:

BAP Available Water Versus Elevation

DATE:

Jan 2021

JOB No:

14-2018-2040

CAD FILE:

N/A

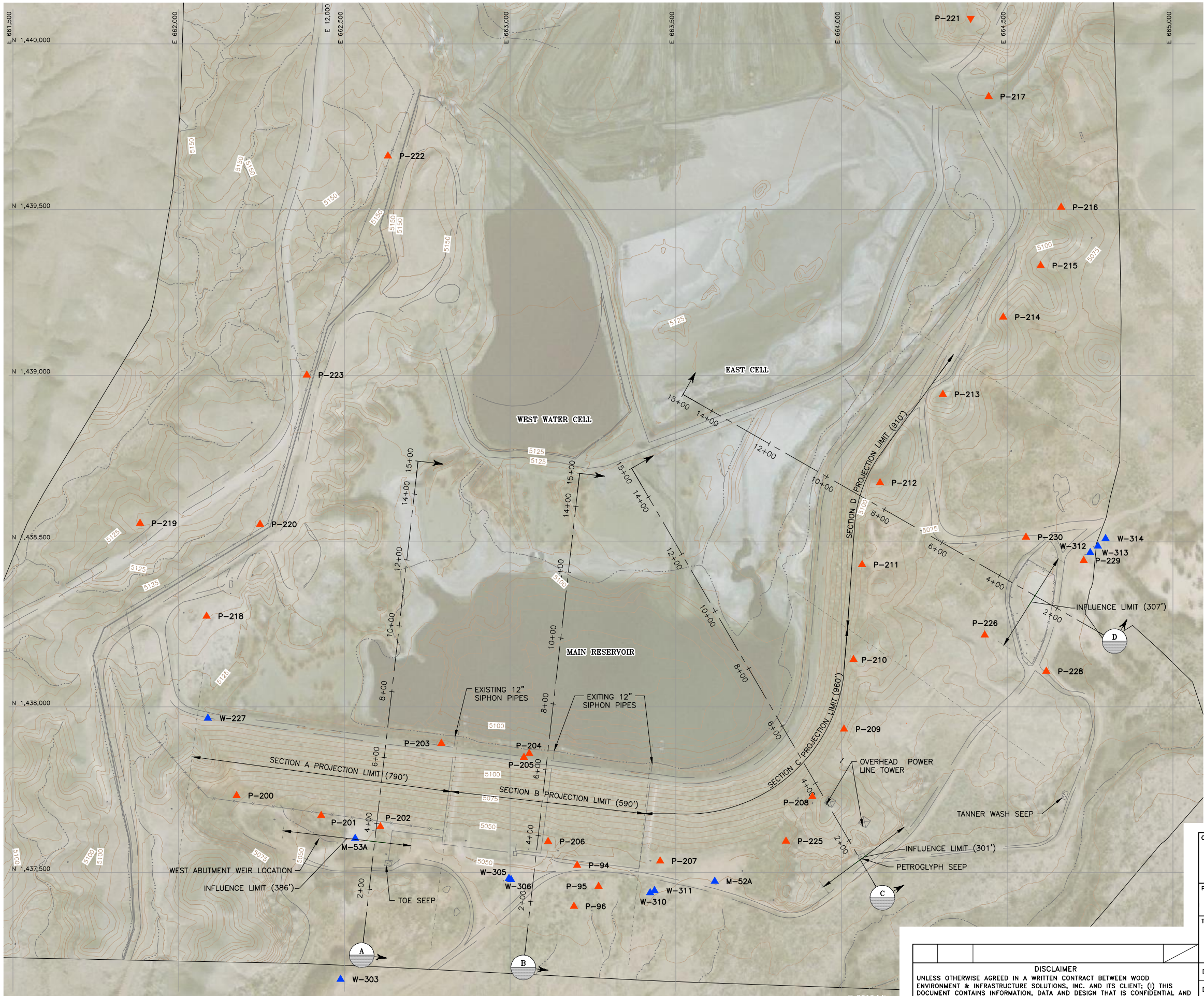
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- LEGEND:**
- 100 EXISTING GROUND SURFACE CONTOUR EL, FEET
 - ▲ PIEZOMETER
 - ▲ MONITORING WELL
 - SECTIONS PROJECTION
 - - - CROSS SECTION LINE
 - LIMIT OF INFLUENCE FOR SEEPAGE COLLECTION SYSTEM

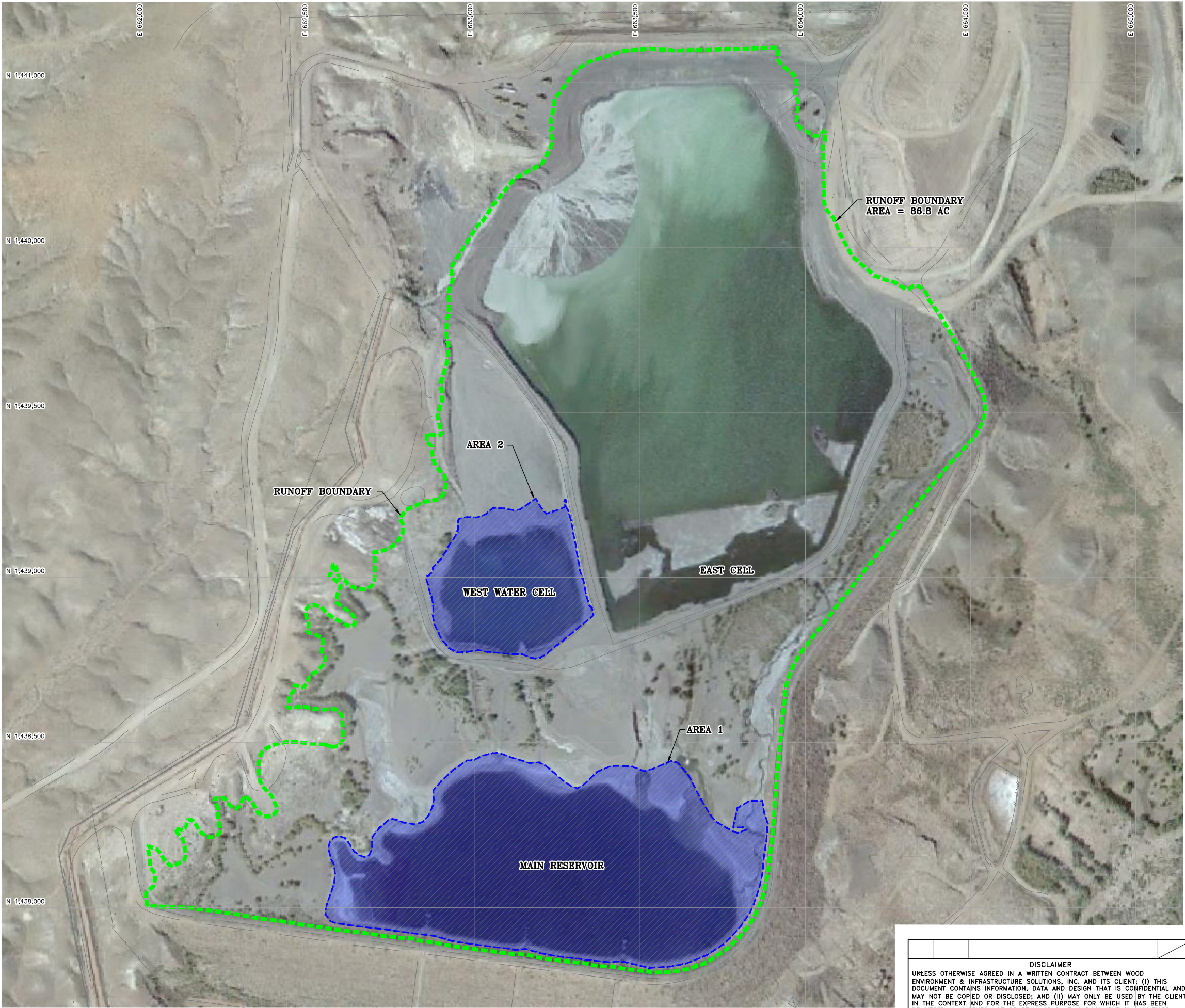
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- NATIVE GROUND SURFACE DIGITIZED FROM 1975 CONTOURS - PDF COPY (BY KENNEY AERIAL MAPPING INC., FLOWN DATE: 3/17/75)
 - THE BASE OF THE BAP IS BASED ON DRAWING DATED 02/15/2010 FROM APS DRAWING NUMBER 161566.
 - THE EMBANKMENT CONFIGURATION AND CONTOUR MAP IS BASED ON DRAWING DATED 09/09/2009 FROM APS DRAWING NUMBER 161394.

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CLIENT					
					
PROJECT					
BAP POST-OPERATION DEWATERING PROJECTION					
TITLE					
BOTTOM ASH POND SITE PLAN					
DESIGNED BY	AS	CHECKED BY	AS	ISSUED FOR	
DRAWN BY	PM	APPROVED BY	MH	FINAL	
FILENAME		FIGURE No.	REV	PROJECT NO.	
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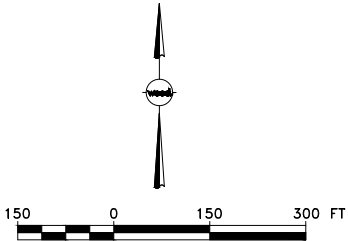




LEGEND:

- - - RUNOFF BOUNDARY
- FREE WATER POND BOUNDARY

CALCULATION NOTES:

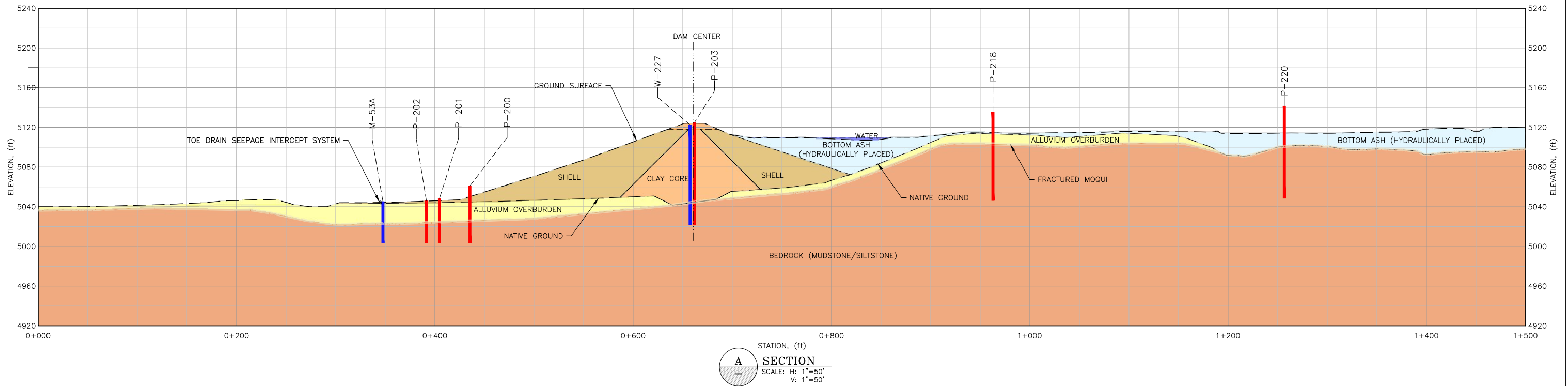
1. AREA 1 AND 2 USED TO CALCULATE THE SURFACE AREA AND VOLUME OF FREE WATER VERSUS ELEVATION. THE REMAINING AREA IN THE BAP WAS USED TO CALCULATE THE INTERSTITIAL WATER VERSUS ELEVATION
2. AREA 1 AND 2 USED TO CALCULATE THE EVAPORATION LOSS VERSUS ELEVATION FIGURE 14 TO 15B.
3. RUNOFF BOUNDARY USED TO CALCULATE THE PRECIPITATION AND INFILTRATION FIGURE 14 TO 15B.



CLIENT						
PROJECT						
BAP POST-OPERATION DEWATERING PROJECTION						
TITLE						
BOTTOM ASH POND BOUNDARY DELINEATION						
DESIGNED BY	AS	CHECKED BY	AS	ISSUED FOR		
DRAWN BY	PM	APPROVED BY	MH	FINAL		
FILENAME		FIGURE No.	REV	PROJECT NO.		
14-2018-2040_Fig001		3a	0	14-2018-4040		

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LEGEND:

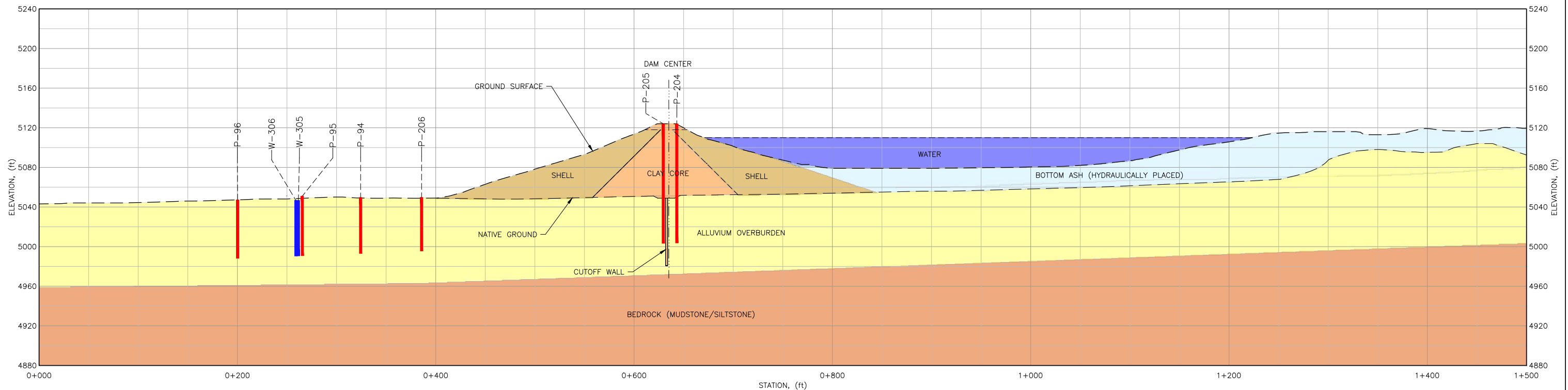
	ALLUVIUM OVERBURDEN		MONITORING WELL
	FRACTURED MOQUI		PIEZOMETER
	SHELL		EXISTING GROUND SURFACE
	CLAY CORE		NATIVE GROUND
	HOLBROOK		
	BOTTOM ASH (HYDRAULICALLY PLACED)		
	BEDROCK (MUDSTONE/SILTSTONE)		

DISCLAIMER			
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CLIENT				
PROJECT				
BAP POST-OPERATION DEWATERING PROJECTION				
TITLE				
SECTION A				
DESIGNED BY	AS	CHECKED BY	AS	ISSUED FOR
DRAWN BY	PM	APPROVED BY	MH	FINAL
FILENAME		FIGURE No.	REV	PROJECT NO.
14-2018-2040_Fig001		4	0	14-2018-4040

wood.

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B SECTION
SCALE: H: 1"=50'
V: 1"=50'

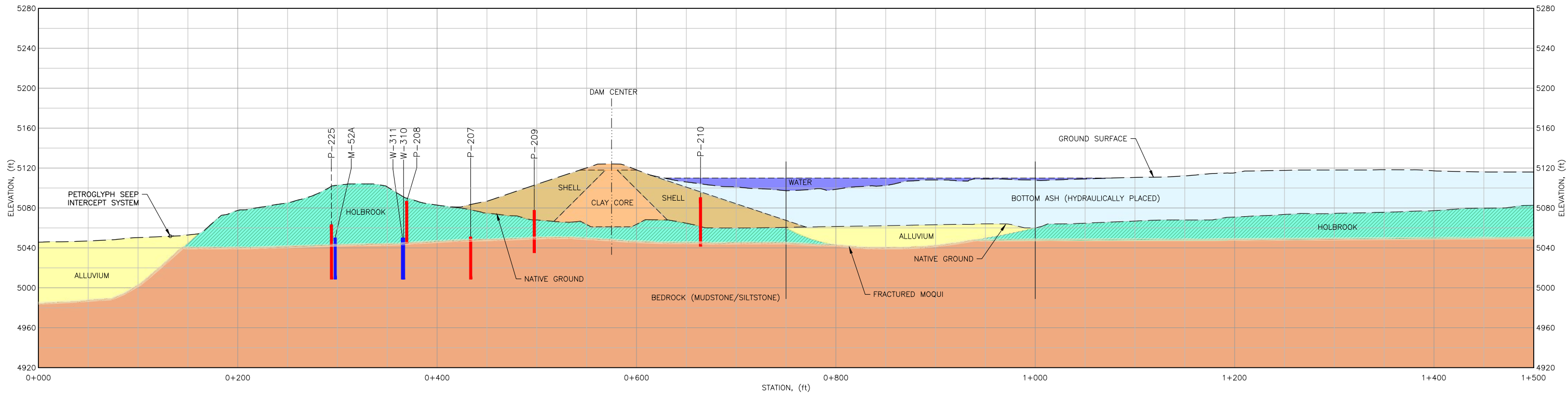
LEGEND:

- | | | | |
|--|-----------------------------------|--|-------------------------|
| | CUTOFF WALL | | MONITORING WELL |
| | ALLUVIUM OVERBURDEN | | PIEZOMETER |
| | SHELL | | EXISTING GROUND SURFACE |
| | CLAY CORE | | NATIVE GROUND |
| | BOTTOM ASH (HYDRAULICALLY PLACED) | | |
| | BEDROCK (MUDSTONE/SILTSTONE) | | |

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









CLIENT				
PROJECT				
BAP POST-OPERATION DEWATERING PROJECTION				
TITLE				
SECTION B				
DESIGNED BY	AS	CHECKED BY	AS	ISSUED FOR
DRAWN BY	PM	APPROVED BY	MH	FINAL
FILENAME		FIGURE No.	REV	PROJECT No.
14-2018-2040_Fig001		5	0	14-2018-4040

G:\Geotechnical\2019 Projects\14-2018-2040-APS Cholla\CAD\Figure\14-2018-2040_Fig001.dwg-11/30/2020 11:30 AM




C SECTION
SCALE: H: 1"=50'
V: 1"=25'

LEGEND:

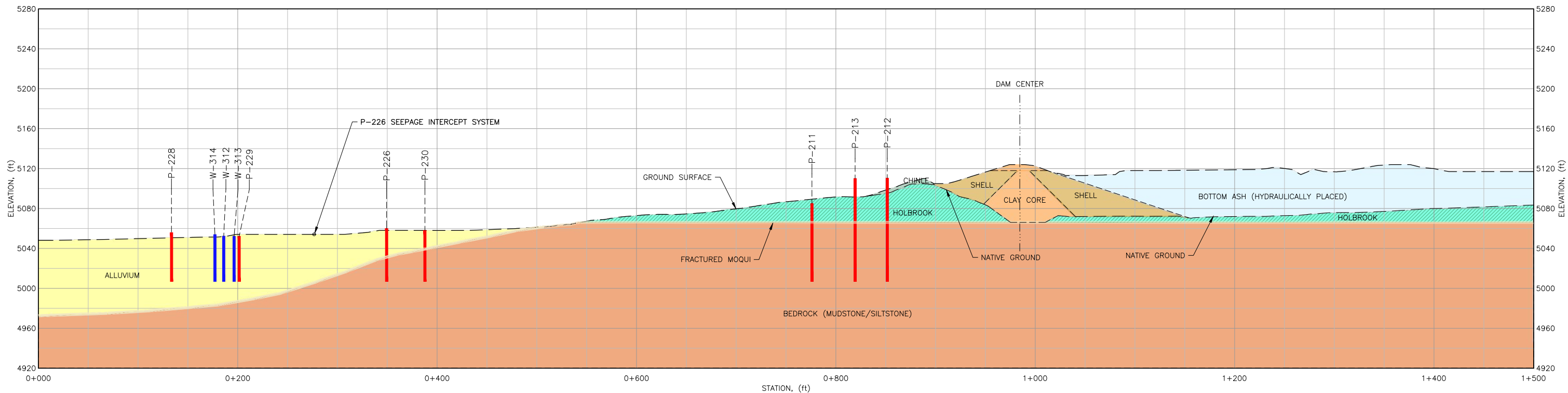
- | | | | |
|---|--------------------------------------|---|-----------------|
|  | ALLUVIUM |  | MONITORING WELL |
|  | FRACTURED MOQUI |  | PIEZOMETER |
|  | SHELL |  | NATIVE GROUND |
|  | CLAY CORE | | |
|  | HOLBROOK | | |
|  | BOTTOM ASH
(HYDRAULICALLY PLACED) | | |
|  | BEDROCK
(MUDSTONE/SILTSTONE) | | |

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CLIENT				
				
PROJECT				
BAP POST-OPERATION DEWATERING PROJECTION				
TITLE				
SECTION C				
DESIGNED BY	AS	CHECKED BY	AS	ISSUED FOR
DRAWN BY	PM	APPROVED BY	TJF	FINAL
FILENAME		FIGURE No.	REV	PROJECT No.
14-2018-2040_Fig001		6	0	14-2018-4040

wood.

G:\Geotechnical\2019 Projects\14-2018-2040-APS Cholla\CAD\Figure\14-2018-2040_Fig001.dwg-11/30/2020 11:30 AM



D SECTION
SCALE: H: 1"=50'
V: 1"=25'

LEGEND:

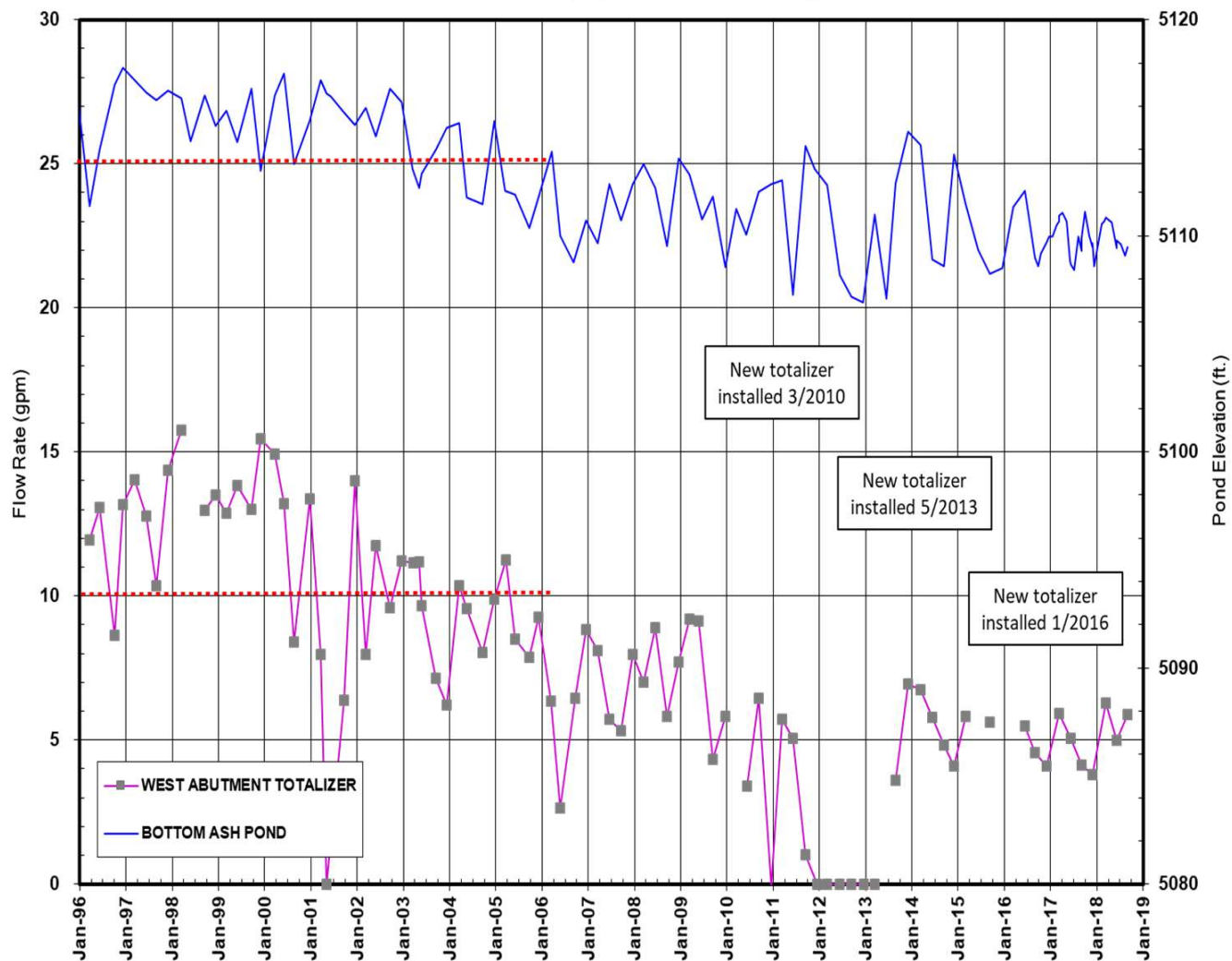
- | | | | |
|--|--------------------------------------|--|-------------------------|
| | CHINLE | | MONITORING WELL |
| | ALLUVIUM | | PIEZOMETER |
| | FRACTURED MOQUI | | EXISTING GROUND SURFACE |
| | SHELL | | NATIVE GROUND |
| | CLAY CORE | | |
| | HOLBROOK | | |
| | BOTTOM ASH
(HYDRAULICALLY PLACED) | | |
| | BEDROCK
(MUDSTONE/SILTSTONE) | | |

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CLIENT				
PROJECT				
BAP POST-OPERATION DEWATERING PROJECTION				
TITLE				
SECTION D				
DESIGNED BY	AS	CHECKED BY	AS	ISSUED FOR
DRAWN BY	PM	APPROVED BY	TJF	FINAL
FILENAME		FIGURE No.	REV	PROJECT No.
14-2018-2040_Fig001		7	0	14-2018-4040

wood.

CHOLLA BOTTOM ASH POND
West Abutment Pumping Station Totalizer Readings



----- Elevation 5115

ft. = feet
gpm = Gallons Per Minute

wood.

CLIENT:

APS Cholla Power Plant, Navajo County, AZ

PROJECT:

BAP POST-OPERATION WATER BALANCE

TITLE:

Section A Flow Rate Versus Pond Elevation

DATE:

Jan 2021

JOB No:

14-2018-2040

CAD FILE:

N/A

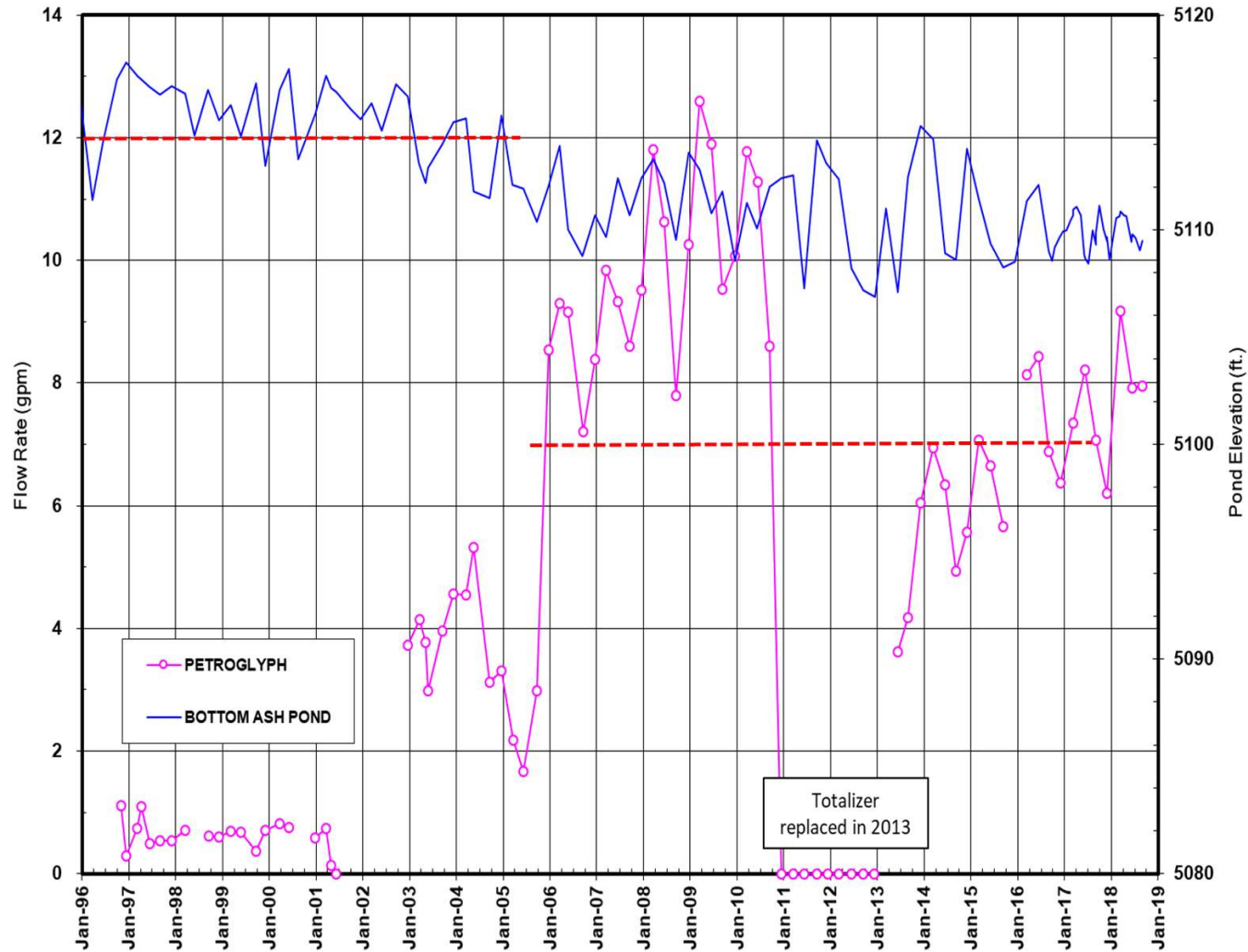
FIGURE:

REV.

8

A

CHOLLA BOTTOM ASH POND Petroglyph Pumping Station Totalizer Readings



----- Elevation 5115

ft. = feet
gpm = Gallons Per Minute

wood.

CLIENT:

APS Cholla Power Plant, Navajo County, AZ

PROJECT:

BAP POST-OPERATION WATER BALANCE

TITLE:

Section C Flow Rate Versus Pond Elevation

DATE:

Jan 2021

JOB No:

14-2018-2040

CAD FILE:

N/A

FIGURE:

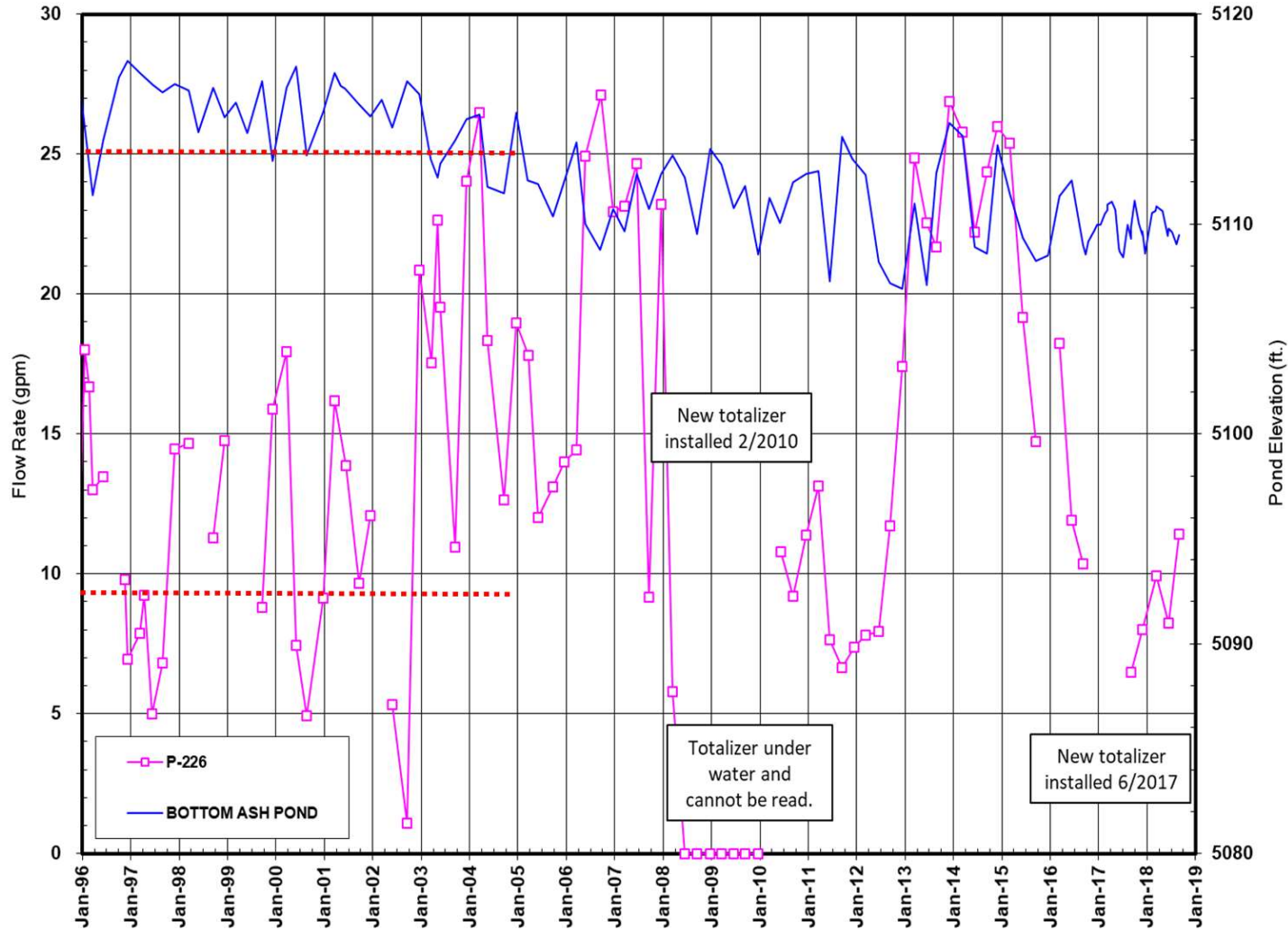
REV.

9

A

CHOLLA BOTTOM ASH POND

P-226 - Pumping Station Totalizer Readings



----- Elevation 5115

ft. = feet
gpm = Gallons Per Minute

wood.

CLIENT:

APS Cholla Power Plant, Navajo County, AZ

PROJECT:

BAP POST-OPERATION WATER BALANCE

TITLE:

Section D Flow Rate Versus Pond Elevation

DATE:

Jan 2021

JOB No:

14-2018-2040

CAD FILE:

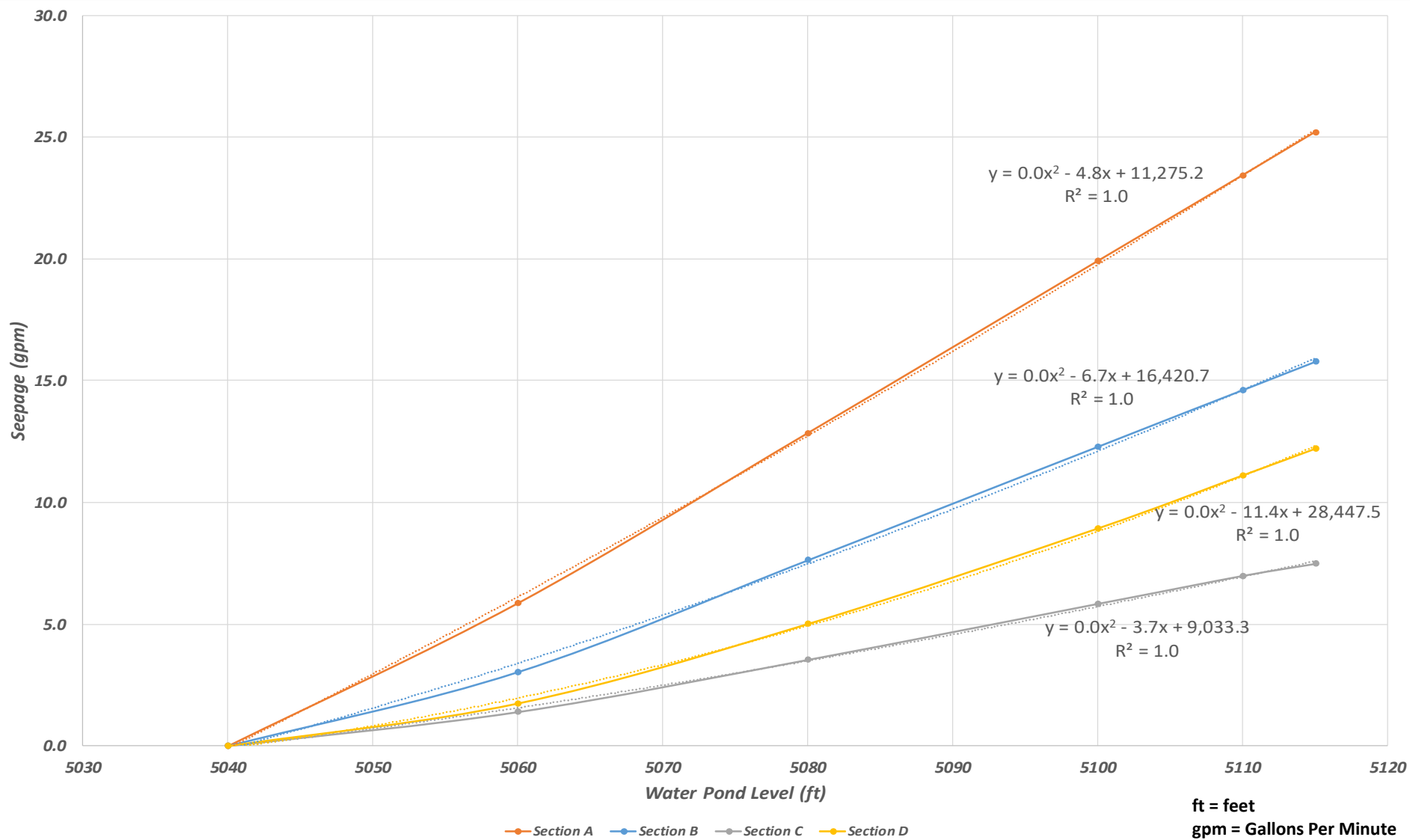
N/A

FIGURE:

10

REV.

A



wood.

CLIENT:

APS Cholla Power Plant, Navajo County, AZ

PROJECT:

BAP POST-OPERATION WATER BALANCE

TITLE:

Seepage Lost Versus Pond

DATE:

Jan 2021

JOB No:

14-2018-2040

CAD FILE:

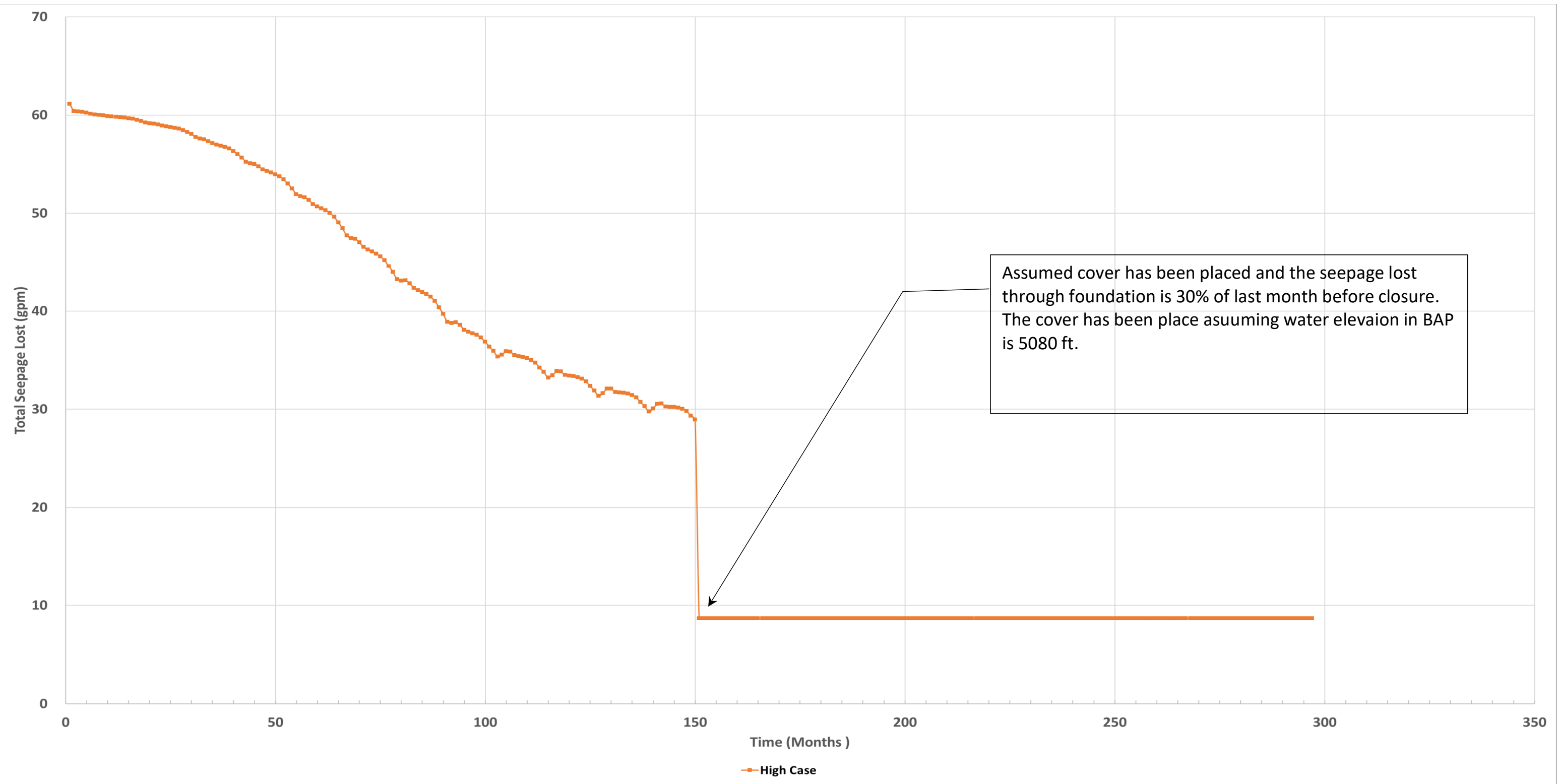
N/A

FIGURE:


11

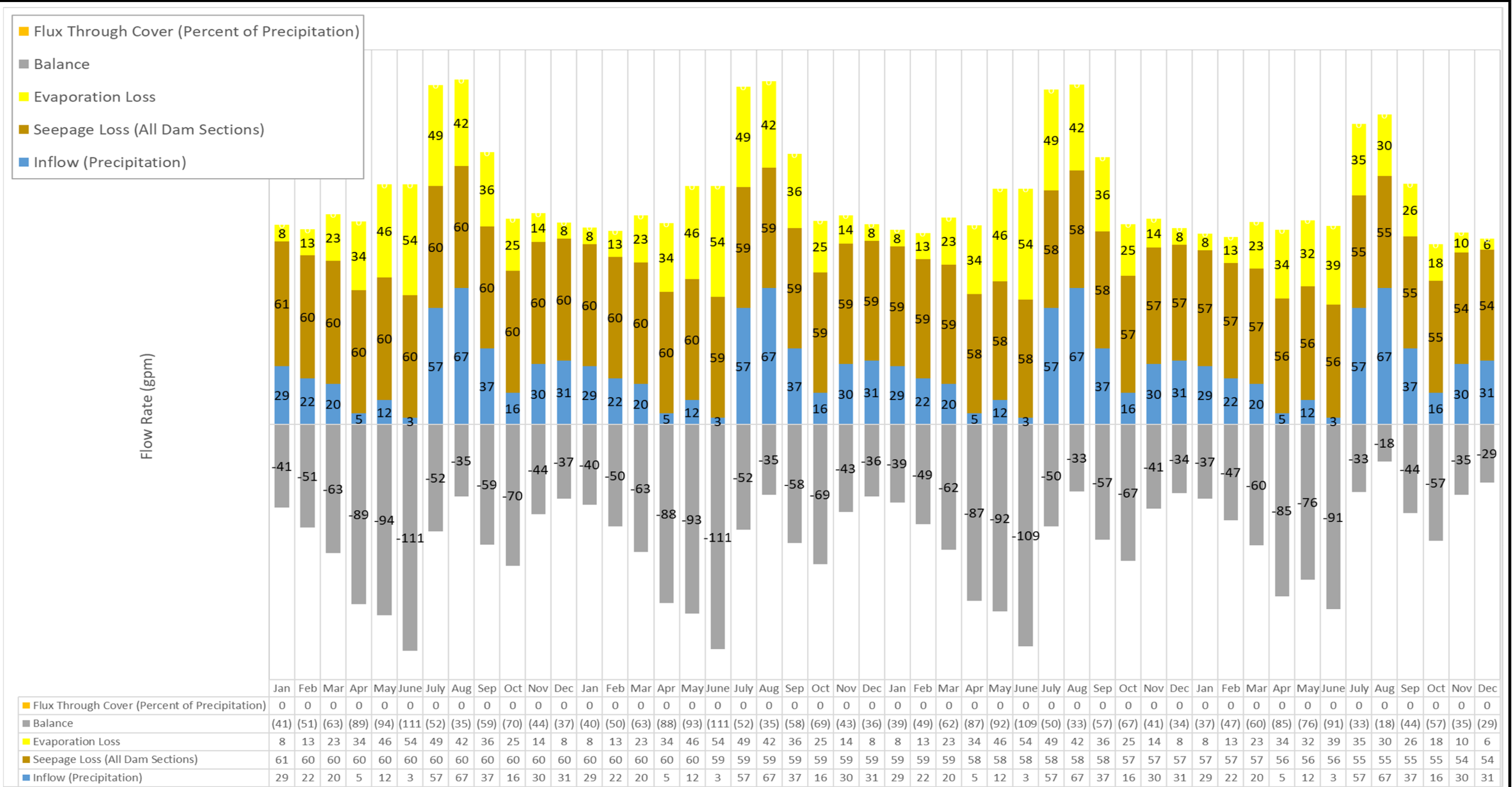
REV.

A



gpm = Gallons Per Minute

	PROJECT: BAP POST-OPERATION WATER BALANCE				
	TITLE: Total Seepage Lost in BAP Versus Time				
CLIENT: APS Cholla Power Plant, Navajo County, AZ	DATE: Jan 2021	JOB No: 14-2018-2040	CAD FILE: N/A	FIGURE: 12	REV. A

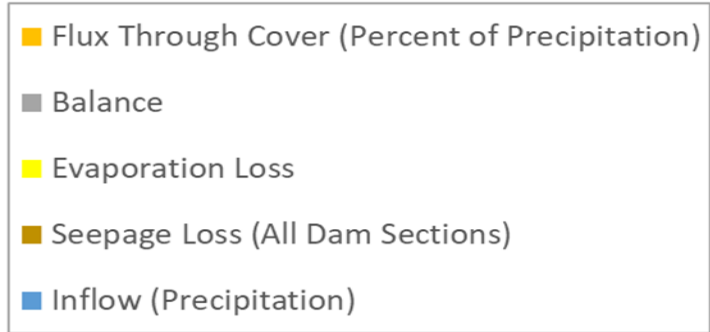


gpm = Gallons Per Minute

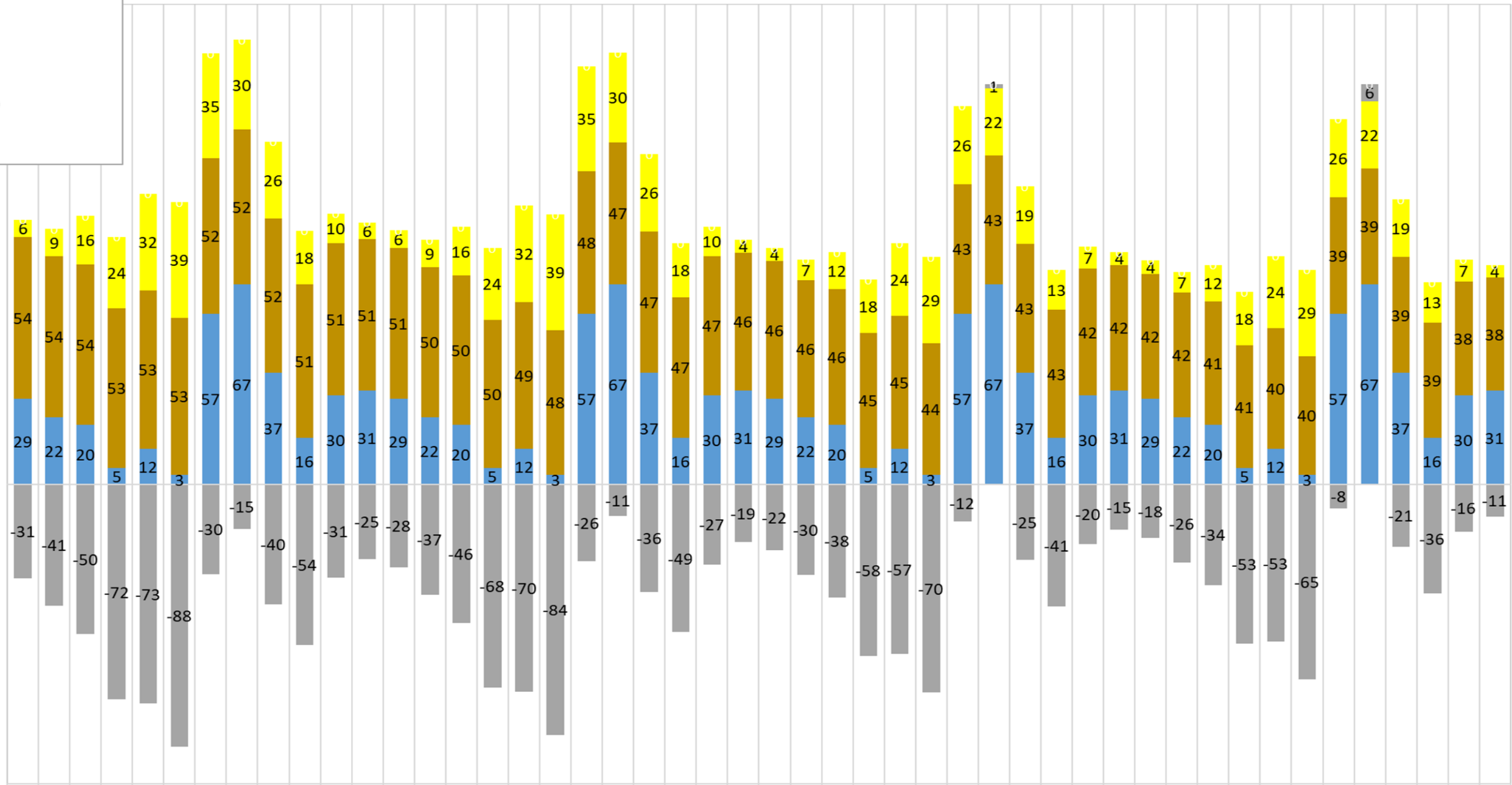


CLIENT: **APS Cholla Power Plant, Navajo County, AZ**

PROJECT: Post-Operations Water Balance for the BAP				
TITLE: Flow Rate Water Balance (Years 1 to 4)				
DATE: Jan 2021	JOB No: 14-2018-2040	CAD FILE: N/A	FIGURE: 13a	REV: A



Flow Rate (gpm)



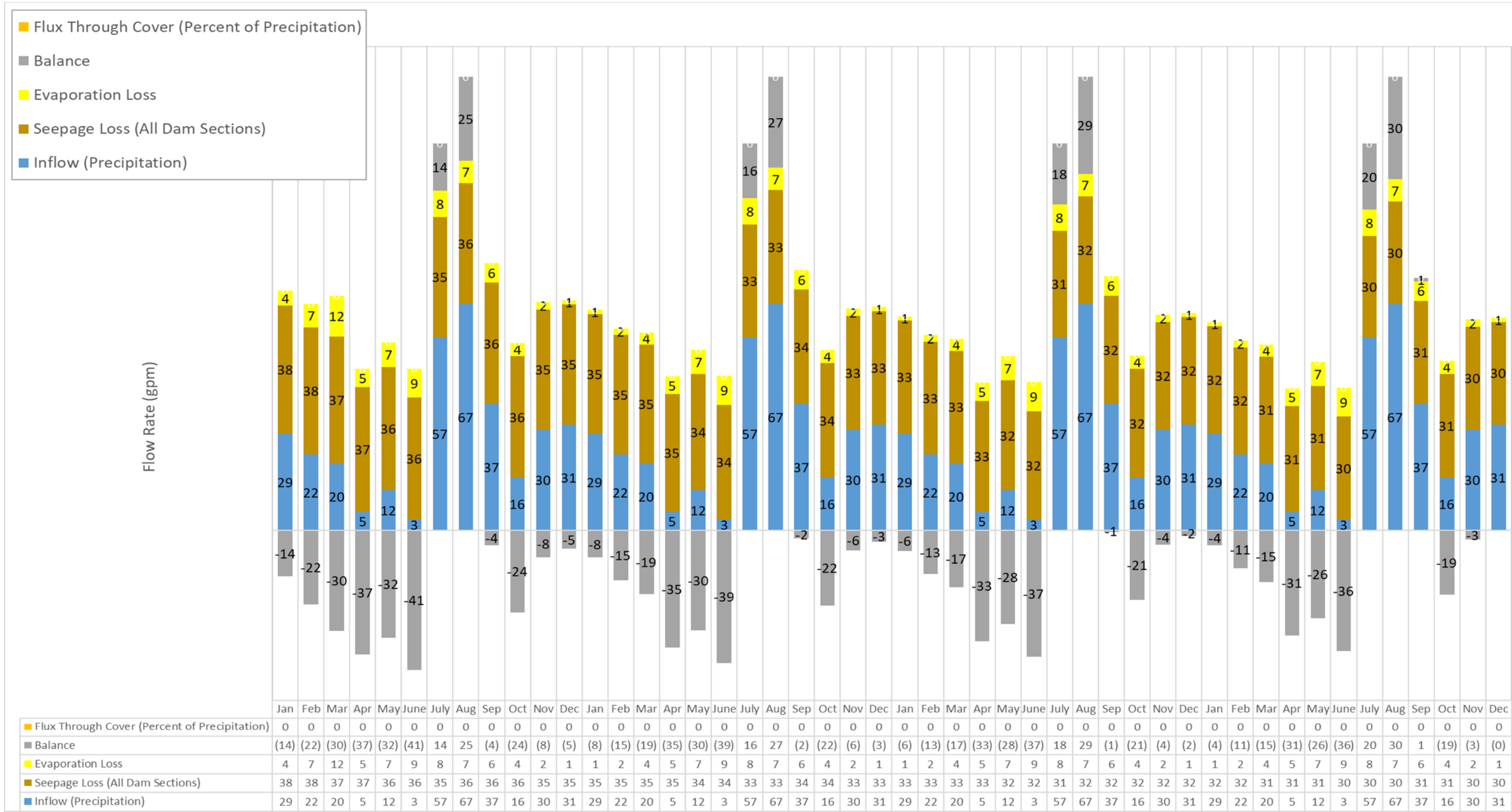
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Flux Through Cover (Percent of Precipitation)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Balance	(31)	(41)	(50)	(72)	(73)	(88)	(30)	(15)	(40)	(54)	(31)	(25)	(28)	(37)	(46)	(68)	(70)	(84)	(26)	(11)	(36)	(49)	(27)	(19)	(22)	(30)	(38)	(58)	(57)	(70)	(12)	1	(25)	(41)	(20)	(15)
Evaporation Loss	6	9	16	24	32	39	35	30	26	18	10	6	6	9	16	24	32	39	35	30	26	18	10	4	4	7	12	18	24	29	26	22	19	13	7	4
Seepage Loss (All Dam Sections)	54	54	54	53	53	53	52	52	52	51	51	51	51	50	50	50	49	48	48	47	47	47	47	46	46	46	46	45	45	44	43	43	43	43	42	42
Inflow (Precipitation)	29	22	20	5	12	3	57	67	37	16	30	31	29	22	20	5	12	3	57	67	37	16	30	31	29	22	20	5	12	3	57	67	37	16	30	31

gpm = Gallons Per Minute



CLIENT: APS Cholla Power Plant, Navajo County, AZ

PROJECT: Post-Operations Water Balance for the BAP				
TITLE: Flow Rate Water Balance (Years 5 to 8)				
DATE: Jan 2021	JOB No: 14-2018-2040	CAD FILE: N/A	FIGURE: 13b	REV: A



gpm = Gallons Per Minute

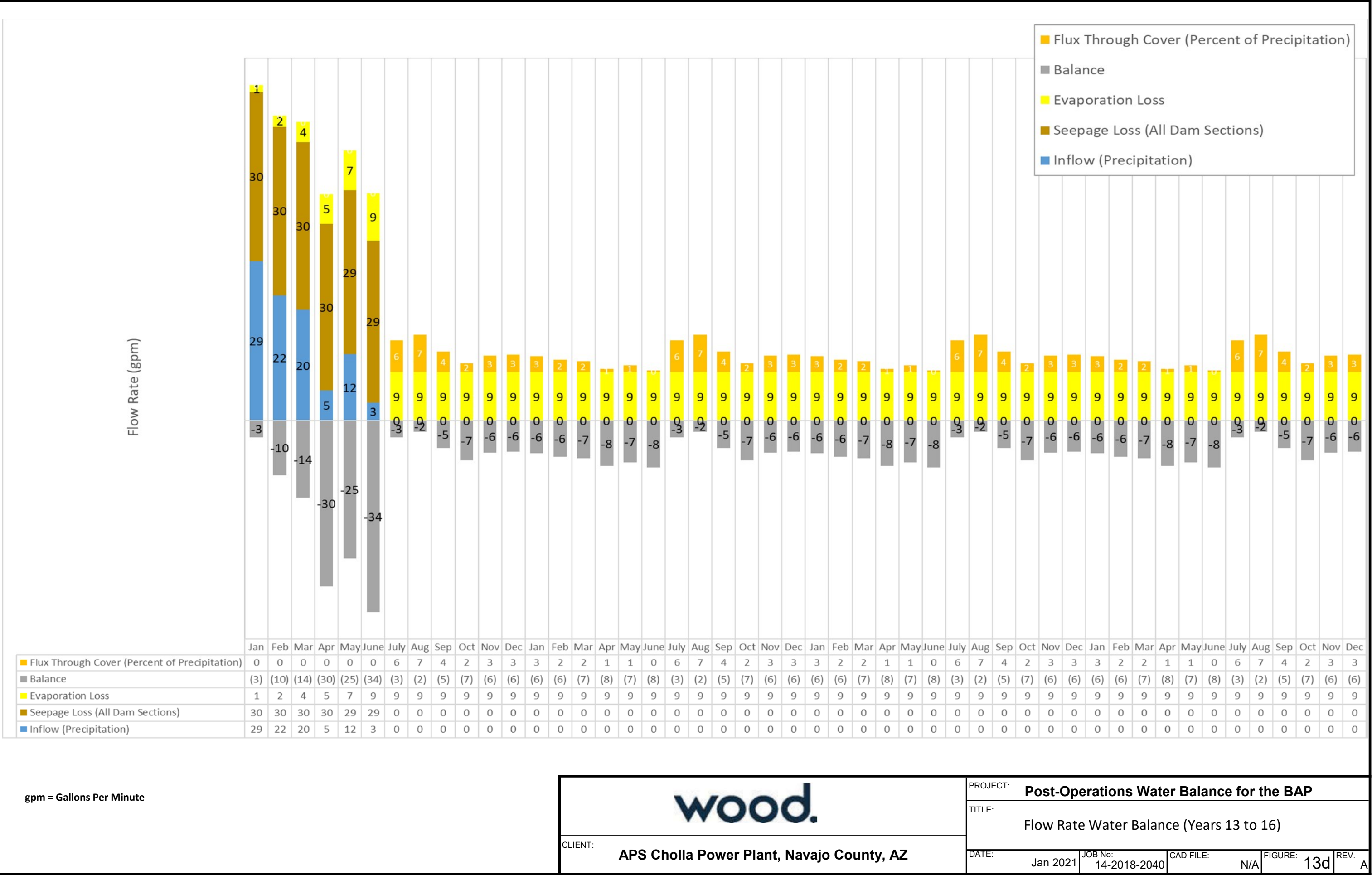


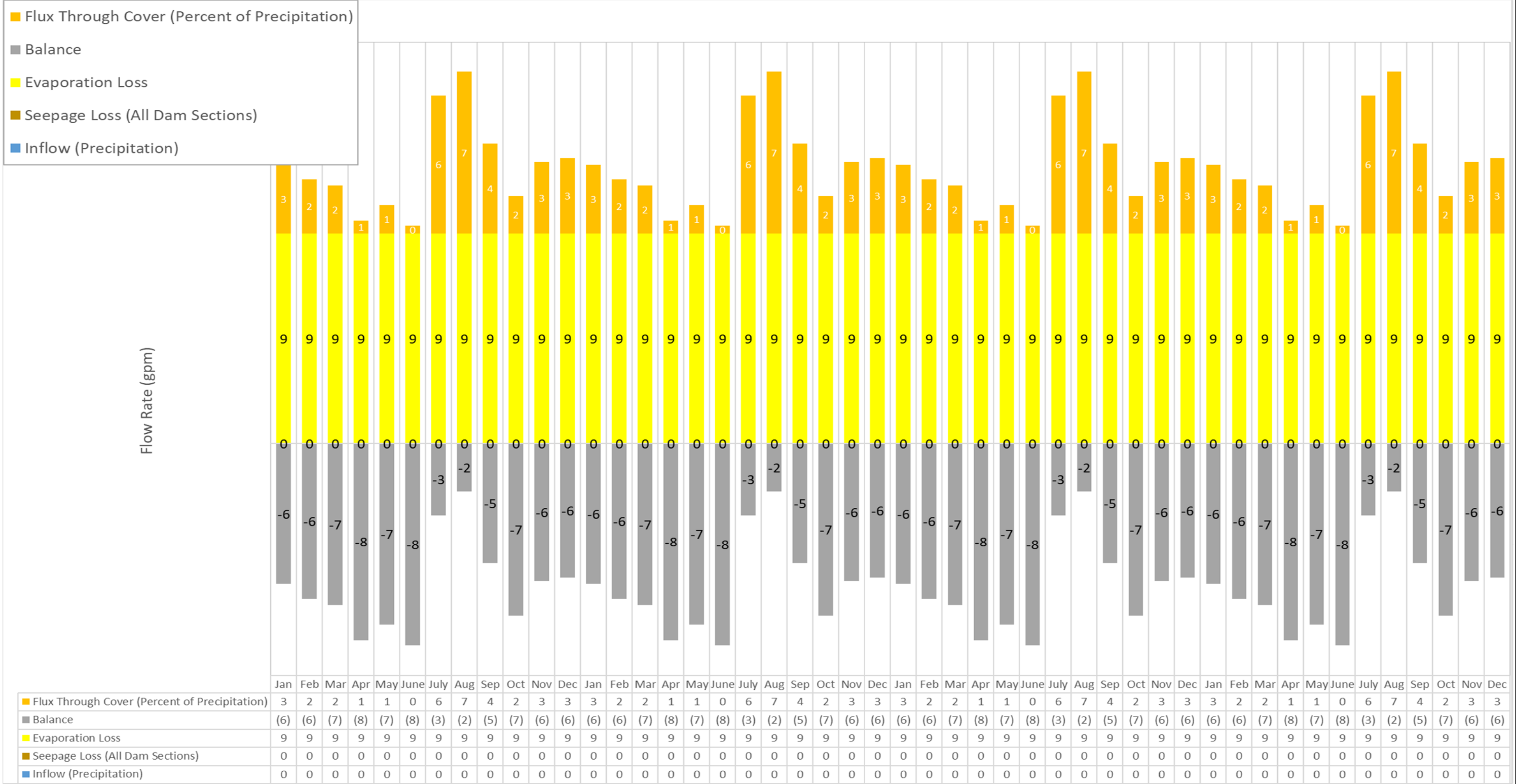
CLIENT: **APS Cholla Power Plant, Navajo County, AZ**

PROJECT: **Post-Operations Water Balance for the BAP**

TITLE: **Flow Rate Water Balance (Years 9 to 12)**

DATE: Jan 2021 JOB No: 14-2018-2040 CAD FILE: N/A FIGURE: 13C REV: A





gpm = Gallons Per Minute

PROJECT: **Post-Operations Water Balance for the BAP**

TITLE: **Flow Rate Water Balance (Years 17 to 20)**

CLIENT: **APS Cholla Power Plant, Navajo County, AZ**

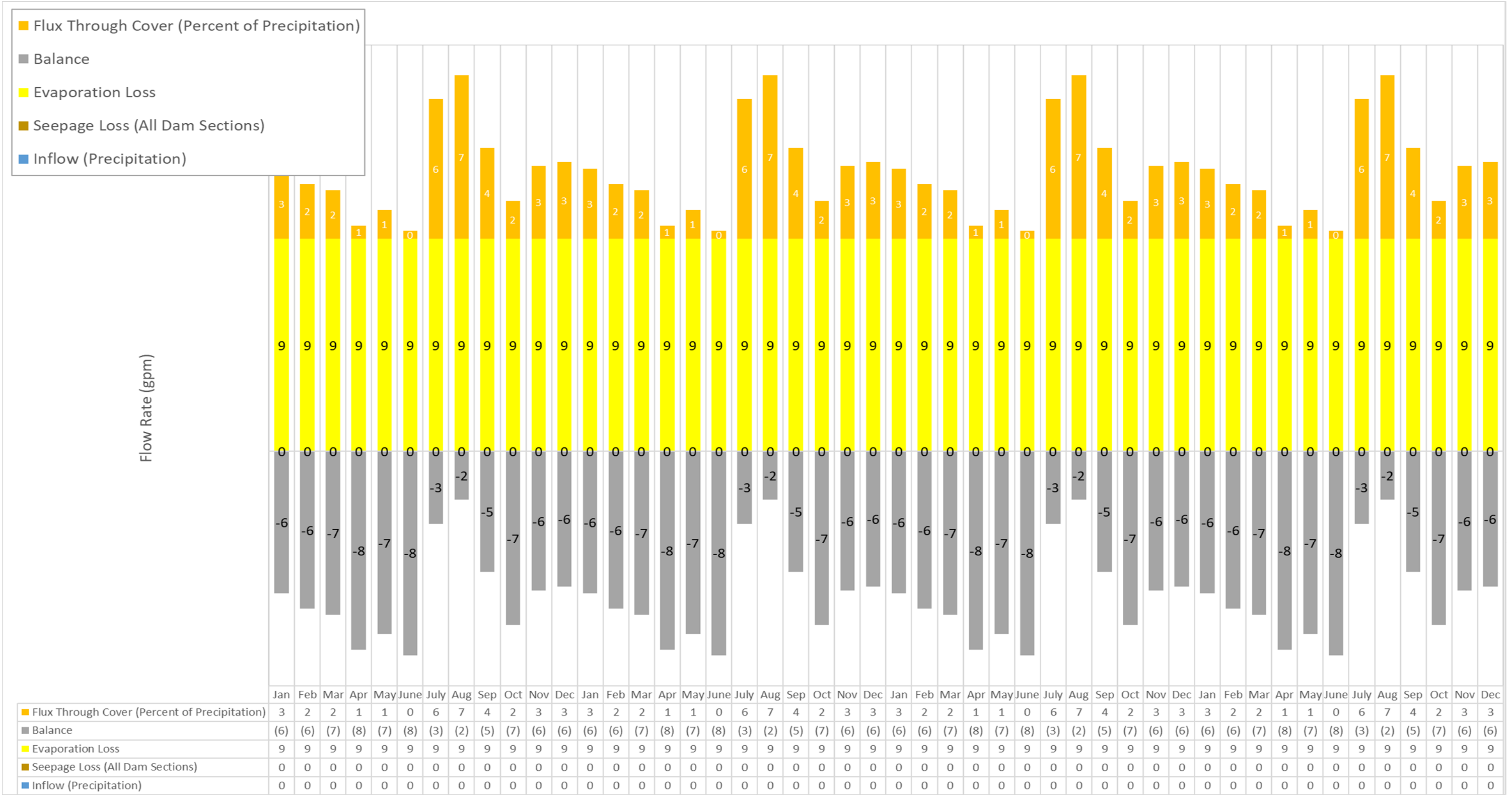
DATE: Jan 2021

JOB No: 14-2018-2040

CAD FILE: N/A

FIGURE: 13e

REV: A



gpm = Gallons Per Minute

PROJECT:
Post-Operations Water Balance for the BAP

TITLE:
Flow Rate Water Balance (Years 21 to 24)

CLIENT:
APS Cholla Power Plant, Navajo County, AZ

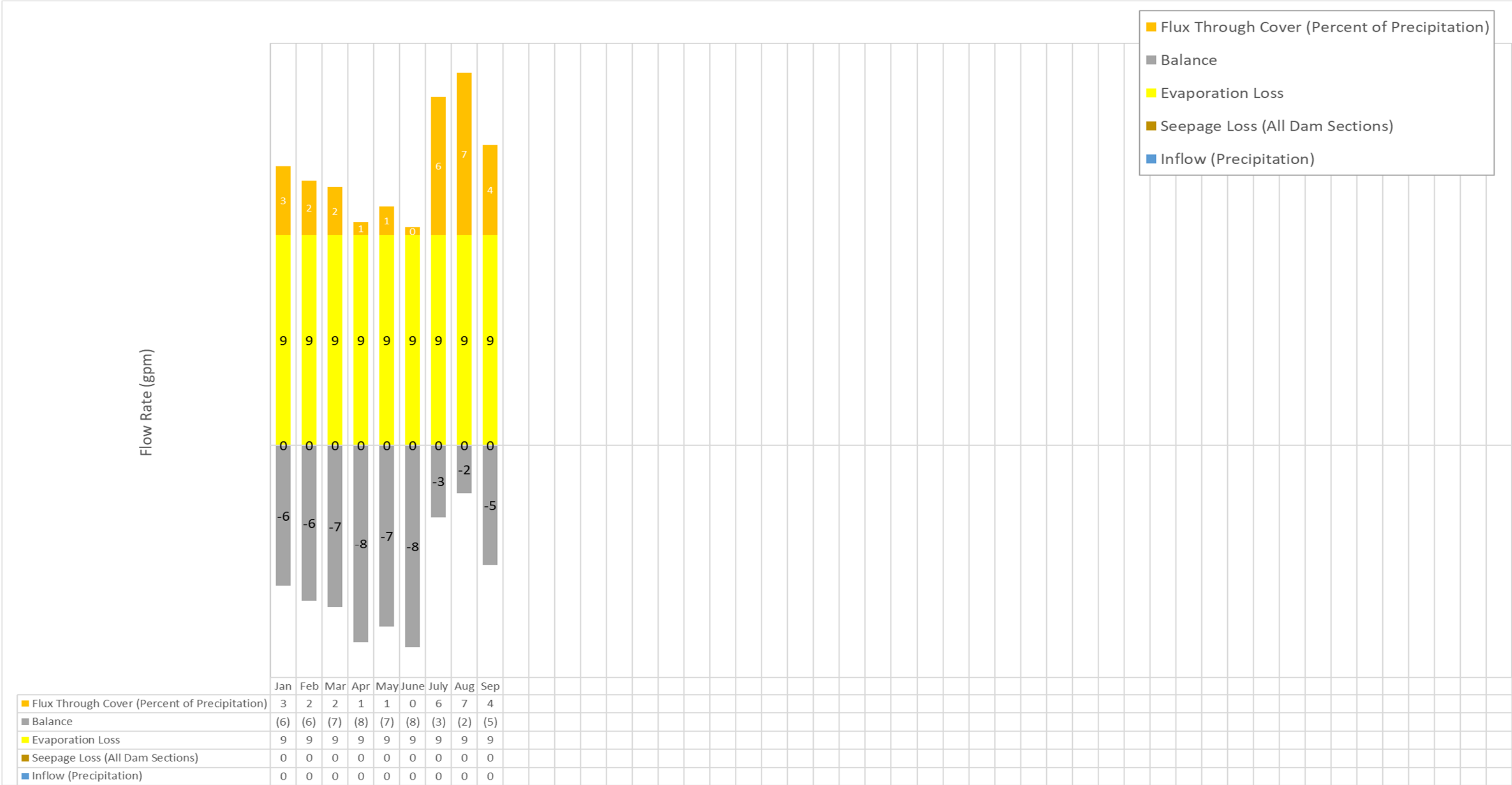
DATE:
Jan 2021

JOB No:
14-2018-2040

CAD FILE:
N/A

FIGURE:
13f

REV.
A



gpm = Gallons Per Minute

CLIENT:
APS Cholla Power Plant, Navajo County, AZ

PROJECT:
Post-Operations Water Balance for the BAP

TITLE:
Flow Rate Water Balance (Years 25)

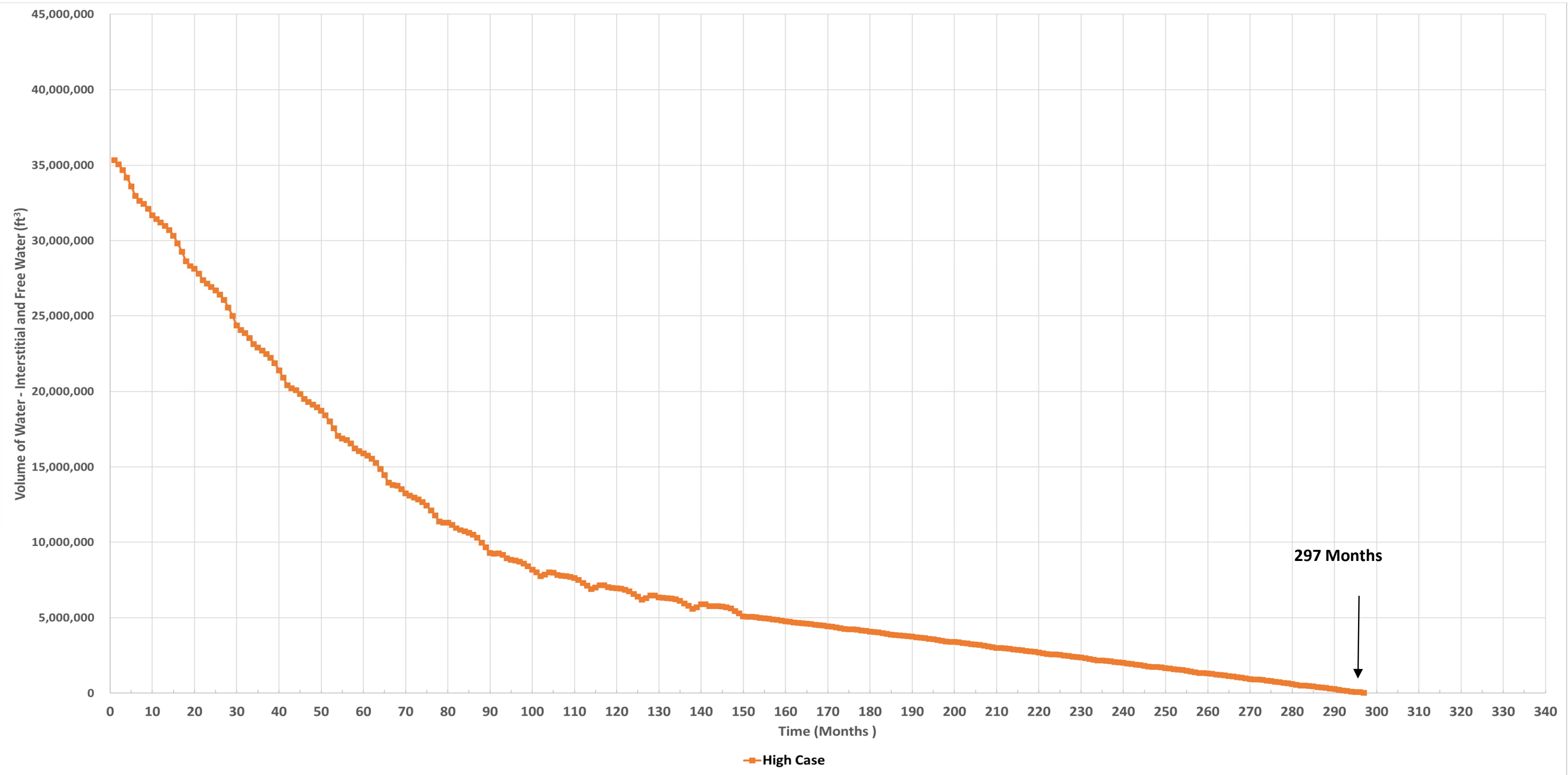
DATE:
Jan 2021

JOB No:
14-2018-2040

CAD FILE:
N/A

FIGURE:
13g

REV.
A



ft³ = cubic feet



CLIENT: **APS Cholla Power Plant, Navajo County, AZ**

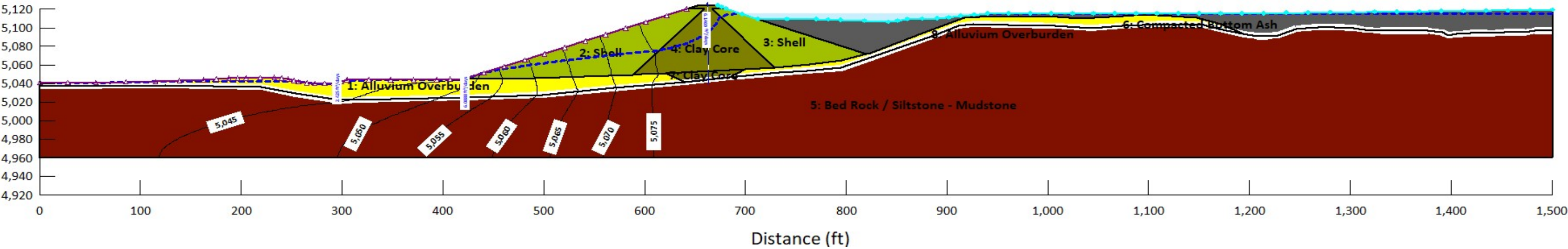
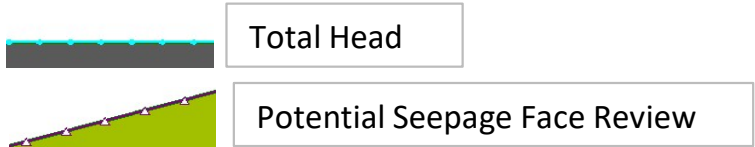
PROJECT: **BAP POST-OPERATION WATER BALANCE**

TITLE: **Draindown for Volume of Water in BAP**

DATE:	Jan 2021	JOB No:	14-2018-2040	CAD FILE:	N/A	FIGURE:	14	REV.	A
-------	----------	---------	--------------	-----------	-----	---------	----	------	---

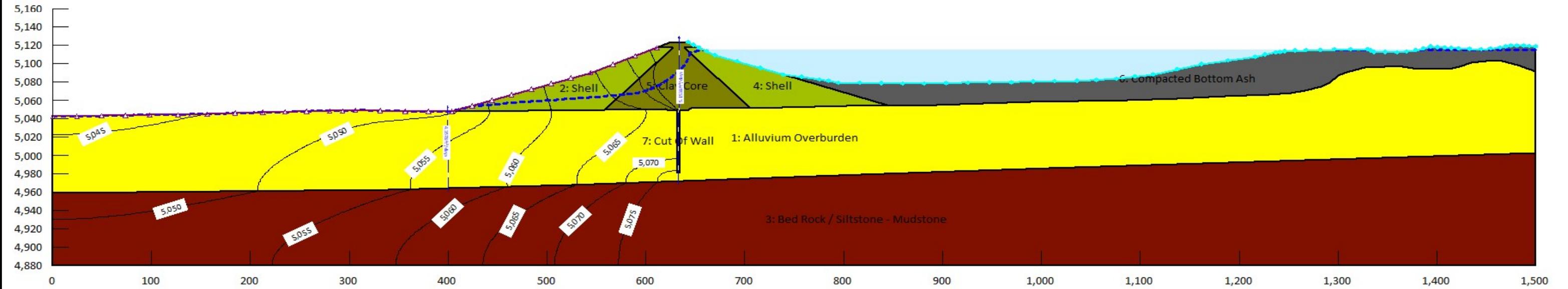
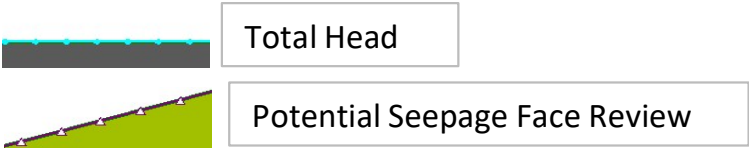
ATTACHMENT A

Color	Name	Model	Sat Kx (ft/days)	Ky'/Kx' Ratio	K-Transpose (ft/days)	K-Normal (ft/days)
<div></div>	Alluvium Overburden	Saturated Only	0.96	0.1		
<div></div>	Bed Rock / Siltstone - Mudstone	Saturated Only	0.017	0.1		
<div></div>	Bed Rock / Siltstone - Mudstone - Fracture	Interface			55	55
<div></div>	Clay Core	Saturated Only	0.00142	1		
<div></div>	Compacted Bottom Ash	Saturated Only	15	1		
<div></div>	Shell	Saturated Only	0.0142	1		



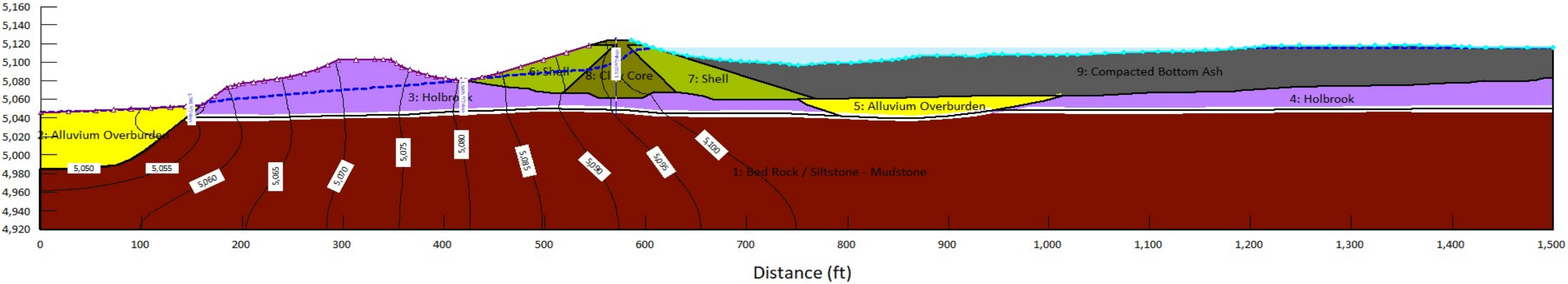
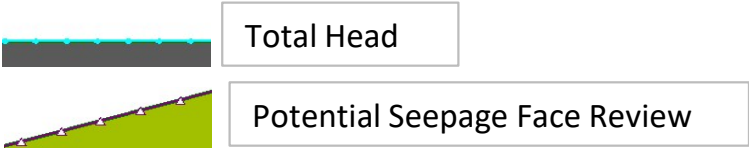
<div>wood.</div>	PROJECT: BAP POST-OPERATION WATER BALANCE				
	TITLE: <i>Calibration for Section A Pond Elevation 5115</i>				
	CLIENT: APS Cholla Power Plant, Navajo County, AZ				
DATE: Jan 2021		JOB No: 14-2018-2040	CAD FILE: N/A	FIGURE: A-1	REV. A

Color	Name	Model	Sat Kx (ft/days)	Ky/Kx' Ratio
<div></div>	Alluvium Overburden	Saturated Only	0.96	0.1
<div></div>	Bed Rock / Siltstone - Mudstone	Saturated Only	0.017	0.1
<div></div>	Clay Core	Saturated Only	0.00142	1
<div></div>	Compacted Bottom Ash	Saturated Only	15	1
<div></div>	Cut Of Wall	Saturated Only	0.0028	1
<div></div>	Shell	Saturated Only	0.0142	1



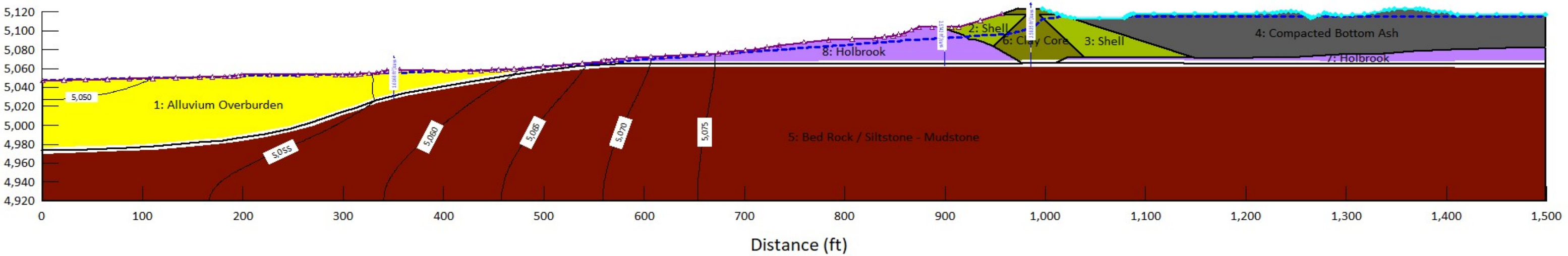
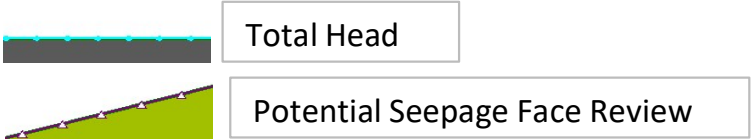
	PROJECT: BAP POST-OPERATION WATER BALANCE				
	TITLE: <i>Calibration for Section B Pond Elevation 5115</i>				
CLIENT: APS Cholla Power Plant, Navajo County, AZ	DATE: Jan 2021	JOB No: 14-2018-2040	CAD FILE: N/A	FIGURE: A-2	REV. A

Color	Name	Model	Sat Kx (ft/days)	Ky'/Kx' Ratio	K-Transpose (ft/days)	K-Normal (ft/days)
<div></div>	Alluvium Overburden	Saturated Only	0.96	0.1		
<div></div>	Bed Rock / Siltstone - Mudstone	Saturated Only	0.017	0.1		
<div></div>	Bed Rock / Siltstone - Mudstone - Fracture	Interface			25	25
<div></div>	Clay Core	Saturated Only	0.00142	1		
<div></div>	Compacted Bottom Ash	Saturated Only	15	1		
<div></div>	Holbrook	Saturated Only	0.028	1		
<div></div>	Shell	Saturated Only	0.0142	1		



	PROJECT: BAP POST-OPERATION WATER BALANCE				
	TITLE: <i>Calibration for Section C Pond Elevation 5115</i>				
CLIENT: APS Cholla Power Plant, Navajo County, AZ	DATE: Jan 2021	JOB No: 14-2018-2040	CAD FILE: N/A	FIGURE: A-3	REV. A

Color	Name	Model	Sat Kx (ft/days)	Ky/Kx' Ratio	K-Transpose (ft/days)	K-Normal (ft/days)
<div></div>	Alluvium Overburden	Saturated Only	0.96	0.1		
<div></div>	Bed Rock / Siltstone - Mudstone	Saturated Only	0.017	0.1		
<div></div>	Bed Rock / Siltstone - Mudstone - Fracture	Interface			55	55
<div></div>	Clay Core	Saturated Only	0.00142	1		
<div></div>	Compacted Bottom Ash	Saturated Only	15	1		
<div></div>	Holbrook	Saturated Only	0.028	1		
<div></div>	Shell	Saturated Only	0.0142	1		



<div>wood.</div>	PROJECT: BAP POST-OPERATION WATER BALANCE				
	TITLE: <i>Calibration for Section D Pond Elevation 5115</i>				
CLIENT: APS Cholla Power Plant, Navajo County, AZ		DATE: Jan 2021	JOB No: 14-2018-2040	CAD FILE: N/A	FIGURE: A-4
					REV. A

APPENDIX M

SITE CCR GROUNDWATER MONITORING SYSTEM NOTIFICATIONS



Arizona Public Service Company
CCR Program
Environmental Policy & Programs

PO Box 53999
Mail Station 9303
Phoenix, AZ 85072-3999

Telephone: 602-250-1000

October 30, 2020

**CCR Program Documentation
Closure – Notification of Intent to Close
CH_ClosNOI_004_20201031**

Subject: Closure – Notification of Intent to Close; Sedimentation Pond - Cholla Power Plant

Pursuant to 40 C.F.R. §§ 257.101(a)(1), APS is providing notice of its intent to close the Sedimentation Pond.

In accordance with 40 CFR 257.102(g), the unit will be closed in accordance with its Closure Plan and the provisions of 40 CFR 257.102(c).

If you have any questions about this or would like additional information, please consult the CCR information webpage located within APS.com or contact neal.brown@aps.com.



Richard Nicosia
Plant Manager
Cholla Power Plant

Tel. 928-288-1176
Fax 928-288-1399
e-mail: Richard.Nicosia@aps.com

4801 Cholla Lake Road
Mail Station 4451
Joseph City, Arizona 86032

February 10, 2020

Bureau of Land Management
Attn: Mr. Scott Cooke
711 14th Avenue
Safford, Arizona 85546

Dear Mr. Cooke:

As you are no doubt aware, real property you manage is located adjacent to the Cholla Power Plant, in particular the Bottom Ash Pond disposal area used by APS to manage coal combustion residuals ("CCR") generated by the plant.

The CCR Rule 40 C.F.R. Sec 257.95(g)(2) requires that APS notify the owners of neighboring property where we have identified levels of certain CCR constituents in groundwater that are in excess of federal CCR groundwater protection standards. We conducted these notifications in June 2019. However, due to an error in county assessor records, APS inadvertently notified the incorrect managing federal agency (the United States Forest Service). This letter serves as notification of the correct federal agency (the Bureau of Land Management) for the federal land located adjacent to our facility.

Based on the results of groundwater quality sampling performed on APS property near certain Cholla CCR disposal areas, we believe that groundwater containing cobalt in excess of federal groundwater protection standards has migrated beneath your property. At this time, we know of no reason to believe that these conditions pose a threat to human health or the environment. The contamination is limited to groundwater in the alluvial aquifer that is not used for drinking water. Nonetheless, out of an abundance of caution and to comply with federal CCR management regulations, we have assessed various corrective measures that could be used to remediate groundwater containing CCR constituents resulting from the Cholla Bottom Ash Pond. In July 2019, we published a written report of this assessment to the APS website, aps.com. At least 30 days prior to selecting a remedy to address these conditions, we will host a public meeting to discuss this assessment of corrective measures.

We welcome your input as we consider our options for corrective measures. Please do not hesitate to reach out to us if you have any questions or comments about these conditions.

Best regards,

A handwritten signature in black ink, appearing to read "Richard Nicosia", written in a cursive style.

Richard Nicosia
Plant Manager
Cholla Power Plant

APPENDIX N

WOOD SEMIANNUAL REPORT DEMONSTRATING PROGRESS OF REMEDY SELECTION FOR THE FAP AND THE BAP



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Phoenix, Arizona 85034
USA

T: 602-733-6000

www.woodplc.com

July 15, 2020

Wood Reference No: 1420182040

Arizona Public Service Company
400 N. 5th Street
Phoenix, Arizona 85004

**Re: SEMIANNUAL REPORT DOCUMENTING PROGRESS IN REMEDY SELECTION
FOR THE FLY ASH POND AND BOTTOM ASH POND
Cholla Power Plant – Navajo County, Arizona**

In accordance with 40 Code of Federal Regulations (CFR) Section (§) 257.97(a) of the Coal Combustion Residuals (CCR) Rule, this Semiannual Remedy Selection Progress Report (Semiannual Report) has been prepared on behalf of Arizona Public Service Company (APS) to document progress in selection of remedies for CCR units which have been identified as potentially impacting groundwater at the APS Cholla Power Plant, located in Navajo County, Arizona (the Site). Applicable site CCR units include the Fly Ash Pond (FAP) and the Bottom Ash Pond (BAP). Previous updates documenting remedy selection progress are provided in a Semiannual Report dated July 15, 2019 and in the *Annual Groundwater Monitoring and Corrective Action Report for 2019*, dated January 31, 2020. This Semiannual Report serves as the third update on remedy selection progress at the site and documents activities completed to date in 2020.

1. Summary of Activities Completed in 2020

Activities completed by APS in the first half of 2020 in support of remedy selection for the FAP and the BAP include the following:

- *Evaluation of Seepage Collection Systems at the FAP and BAP.* As indicated in the 2019 GMCAR, Wood Environment and Infrastructure Solutions, Inc. (Wood) has performed field evaluations of the seepage collection systems at the FAP and BAP in support of remedy selection and design at each CCR unit. The evaluation at the FAP has indicated poor lateral influence of the two seepage collection extraction wells, which may be associated with clogging of the extraction well screens. Well rehabilitation activities are planned for the extraction wells and are likely to occur in the second half of 2020. Additionally, the evaluation has prompted a series of cone penetrometer tests (CPTs) at the FAP, which is planned for July 2020 and discussed in Section 2. The assessment of the BAP seepage collection system is partially complete and will be finalized in the second half of 2020. The assessment results for the FAP and BAP seepage collection systems will be summarized in a Technical Memorandum (Tech Memo) for inclusion as an appendix to the Annual Groundwater Monitoring and Corrective Action Report for 2020 (2020 GMCAR).
- *Aquifer Testing at the FAP.* In March 2020, Wood performed several aquifer tests at wells downgradient of the FAP to evaluate aquifer properties in support of remedy selection. Results of the aquifer tests indicate limited connectivity between test wells and observation wells and relatively low sustained groundwater pumping rates at the test wells (e.g., between approximately 0.1 and 2.5 gallons per minute). The aquifer



test results will be incorporated into a Tech Memo with the results of the FAP seepage system collection evaluation and FAP CPT study for inclusion as an appendix to the 2020 GMCAR.

- *Stratified Water Sampling and Leaching Evaluation at the BAP.* As indicated in the 2019 GMCAR, a field investigation was conducted in 2019 to evaluate the cause of elevated cobalt concentrations in groundwater downgradient of the BAP. Results of the investigation are summarized in a Tech Memo which will be included as an appendix to the 2020 GMCAR. The investigation concluded that the elevated cobalt concentrations in groundwater are not directly attributable to the presence of cobalt in BAP water and may be caused by the mobilization of cobalt from the solid matrixes underlying the BAP (e.g., alluvium, bottom ash, and/or Moenkopi Moqui) under reducing conditions. Groundwater sampling at the BAP to evaluate redox conditions was performed by APS in the first half of 2020 and is discussed below.
- *Groundwater Redox Sampling at the FAP and BAP.* Site investigations conducted to date suggest groundwater redox conditions may be responsible for the mobilization of cobalt at the BAP (discussed above) and arsenic at the FAP (discussed in the 2019 GMCAR). Accordingly, groundwater samples collected during the first semiannual CCR monitoring event of 2020 at FAP and BAP downgradient wells have been analyzed for several redox-sensitive constituents to assess groundwater redox conditions at each CCR unit. The results of the redox analysis will be evaluated in the second half of 2020 to inform the selection and design of remedies for the FAP and BAP and will be summarized in a Tech Memo for inclusion as an appendix to the 2020 GMCAR.
- *BAP Dewatering Projection.* As discussed in the 2019 GMCAR, a dewatering projection was developed in 2019 to estimate the duration of time until the BAP no longer has ponded water and seepage from the BAP declines to a steady state level. A Tech Memo documenting the results of the dewatering projection is being finalized and will be included as an appendix to the 2020 GMCAR.

2. Future Planned Activities

APS plans to perform the following activities in support of remedy selection during the second half of 2020:

- *A CPT Investigation at the FAP.* Investigations conducted at the FAP to date suggest the presence of preferential pathways for groundwater migration in the uppermost aquifer. A CPT study at the FAP is planned for July 2020 to delineate preferential flow paths or perched zones of saturation downgradient of the FAP. The results of the CPT investigation will be assessed in the second half of 2020 to inform remedy selection and design for the FAP and will be documented in a Tech Memo for inclusion as an appendix to the 2020 GMCAR.
- *Installation of Monitoring Wells at BAP.* To evaluate localized cobalt migration pathways in the uppermost aquifer immediately downgradient of the BAP, monitoring wells are planned for installation near the southeastern corner of the BAP. Additionally, the installation of a monitoring well screened in the Moqui is planned as a potential background well for the BAP to evaluate background cobalt concentrations for groundwater in the Moqui. The well installation activities are anticipated to occur in the second half of 2020 and will be summarized in a Tech Memo for inclusion as an appendix to the 2020 GMCAR.
- *Public Meeting.* Pursuant to 40 CFR §257.96(e), APS will conduct a public meeting with interested and affected parties at least 30 days prior to selection of remedies for the FAP and the BAP. Once pre-design studies have provided enough information to progress remedy selection activities, APS will explore alternative methods to conduct the public meeting if gatherings are limited as a result of the COVID-19 pandemic.

- *Remedy Selection Reports for the FAP and the BAP.* After a public meeting to discuss the results of the corrective measures assessment occurs, APS will prepare a remedy selection report for each CCR unit which will document how the selected remedy will meet the requirements of 40 CFR §257.97(b).

Respectfully submitted,

Wood Environment & Infrastructure Solutions, Inc.



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Reviewed by:



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