TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

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TestAmerica Job ID: 550-83572-1
TestAmerica Sample Delivery Group: Cholla
Client Project/Site: APS - Four Corners CCR
Revision: 1

For:
Arizona Public Service Company
4801 Cholla Lake Rd
Joseph City, Arizona 86032

Attn: Doug Lavarnway

Authorized for release by:
6/30/2017 8:21:48 AM

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LINKS

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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 13
QC Sample Results 25
QC Association Summary 38
Lab Chronicle 44
Certification Summary 52
Method Summary 53
Chain of Custody 54
Receipt Checklists 56

Qualifiers

HPLC/IC

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

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.
D2	Sample required dilution due to high concentration of analyte.

General Chemistry

Qualifier	Qualifier Description
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.
D2	Sample required dilution due to high concentration of analyte.

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)

Job ID: 550-83572-1

Laboratory: TestAmerica Phoenix

Narrative

Job Narrative
550-83572-1

Comments
No additional comments.

Receipt
The samples were received on 5/31/2017 1:10 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 5 coolers at receipt time were 0.2º C, 0.4º C, 1.1º C, 1.1º C and 1.5º 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: APS - Four Corners CCR

TestAmerica Job ID: 550-83572-1
SDG: Cholla

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-83572-1	FC-CCR-MW7-53017	Water	05/30/17 11:09	05/31/17 13:10
550-83572-2	FC-CCR-MW8-53017	Water	05/30/17 10:14	05/31/17 13:10
550-83572-3	FC-CCR-MW49A-53017	Water	05/30/17 12:01	05/31/17 13:10
550-83572-4	FC-CCR-MW60-53017	Water	05/30/17 09:35	05/31/17 13:10
550-83572-5	FC-CCR-MW61-53017	Water	05/30/17 08:24	05/31/17 13:10
550-83572-6	FC-CCR-MW62-52917	Water	05/29/17 09:08	05/31/17 13:10
550-83572-7	FC-CCR-MW63-52817	Water	05/28/17 14:55	05/31/17 13:10
550-83572-8	FC-CCR-FD01-52817	Water	05/28/17 14:55	05/31/17 13:10
550-83572-9	FC-CCR-MW64-52817	Water	05/28/17 14:09	05/31/17 13:10
550-83572-10	FC-CCR-MW65-52917	Water	05/29/17 08:19	05/31/17 13:10
550-83572-11	FC-CCR-FD02-52917	Water	05/29/17 08:19	05/31/17 13:10
550-83572-12	FC-CCR-MW66-52917	Water	05/29/17 09:38	05/31/17 13:10
550-83572-13	FC-CCR-MW67-52917	Water	05/29/17 12:19	05/31/17 13:10
550-83572-14	FC-CCR-MW68-52917	Water	05/29/17 12:53	05/31/17 13:10
550-83572-15	FC-CCR-MW69-52917	Water	05/29/17 13:23	05/31/17 13:10
550-83572-16	FC-CCR-MW70-52917	Water	05/29/17 10:15	05/31/17 13:10
550-83572-17	FC-CCR-MW71-52917	Water	05/29/17 11:24	05/31/17 13:10
550-83572-18	FC-CCR-MW72-52917	Water	05/29/17 10:56	05/31/17 13:10
550-83572-19	FC-CCR-MW73-52917	Water	05/29/17 14:03	05/31/17 13:10
550-83572-20	FC-CCR-MW74-52917	Water	05/29/17 14:38	05/31/17 13:10
550-83572-21	FC-CCR-MW75-53017	Water	05/30/17 08:52	05/31/17 13:10

Detection Summary

Client: Arizona Public Service Company
Project/Site: APS - Four Corners CCR

TestAmerica Job ID: 550-83572-1
SDG: Cholla

Client Sample ID: FC-CCR-MW7-53017 — Lab Sample ID: 550-83572-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	430	D2	400	mg/L	200		300.0	Total/NA
Sulfate	7100	D2 M3	400	mg/L	200		300.0	Total/NA
Boron	7.3		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	410		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	590		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	34		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	1600		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	500		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	500		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	10000	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	18.3	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW8-53017 — Lab Sample ID: 550-83572-2

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1100	D2	400	mg/L	200		300.0	Total/NA
Sulfate	10000	D2	400	mg/L	200		300.0	Total/NA
Boron	16		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	430		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	750		2.0	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	3100	D2	5.0	mg/L	10		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	510		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	510		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	15000	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.1	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

Client Sample ID: FC-CCR-MW49A-53017 — Lab Sample ID: 550-83572-3

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	510	D2	400	mg/L	200		300.0	Total/NA
Sulfate	18000	D2	1000	mg/L	500		300.0	Total/NA
Boron	2.2		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	420		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	1200	D2	20	mg/L	10		200.7 Rev 4.4	Total/NA
Potassium	73		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	5900	D2	5.0	mg/L	10		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	850		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	850		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	25000	D2	1000	mg/L	1		SM 2540C	Total/NA
pH	7.3	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: FC-CCR-MW60-53017 — Lab Sample ID: 550-83572-4

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	440	D2	200	mg/L	100		300.0	Total/NA
Fluoride	7.0	D1	0.80	mg/L	2		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Arizona Public Service Company
Project/Site: APS - Four Corners CCR

TestAmerica Job ID: 550-83572-1
SDG: Cholla

Client Sample ID: FC-CCR-MW60-53017 (Continued) — Lab Sample ID: 550-83572-4

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	5300	D2	200	mg/L	100		300.0	Total/NA
Boron	62		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
Magnesium	490		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	26		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	1100		0.50	mg/L	1		200.7 Rev 4.4	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	8200	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.6	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	15.2	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW61-53017 — Lab Sample ID: 550-83572-5

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	300	D2	100	mg/L	50		300.0	Total/NA
Fluoride	1.2		0.40	mg/L	1		300.0	Total/NA
Sulfate	3600	D2	100	mg/L	50		300.0	Total/NA
Boron	40		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
Magnesium	130		2.0	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	1000		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	88		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	73		6.0	mg/L	1		SM 2320B	Total/NA
Carbonate Alkalinity as CaCO3	16		6.0	mg/L	1		SM 2320B	Total/NA
Alkalinity, Phenolphthalein	7.8		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	5400	D2	100	mg/L	1		SM 2540C	Total/NA
pH	8.6	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	15.2	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW62-52917 — Lab Sample ID: 550-83572-6

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	120	D2	100	mg/L	50		300.0	Total/NA
Fluoride	1.2		0.40	mg/L	1		300.0	Total/NA
Sulfate	3500	D2	100	mg/L	50		300.0	Total/NA
Boron	1.9		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	570		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	350		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	9.5		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	670		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	800		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	800		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	5500	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.1	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: FC-CCR-MW63-52817 — Lab Sample ID: 550-83572-7

This Detection Summary does not include radiochemical test results.

Client Sample ID: FC-CCR-MW63-52817 (Continued) — Lab Sample ID: 550-83572-7

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	98		2.0	mg/L	1		300.0	Total/NA
Fluoride	1.6		0.40	mg/L	1		300.0	Total/NA
Sulfate	2700	D2	100	mg/L	50		300.0	Total/NA
Boron	1.5		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	550		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	280		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	6.0		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	340		0.50	mg/L	1		200.7 Rev 4.4	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	4300	D2	40	mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	15.9	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-FD01-52817 — Lab Sample ID: 550-83572-8

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	99		2.0	mg/L	1		300.0	Total/NA
Fluoride	1.6		0.40	mg/L	1		300.0	Total/NA
Sulfate	2800	D2	100	mg/L	50		300.0	Total/NA
Boron	1.4		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	530		2.0	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	5.9		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	350		0.50	mg/L	1		200.7 Rev 4.4	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	4200	D2	40	mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	16.2	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW64-52817 — Lab Sample ID: 550-83572-9

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	51		2.0	mg/L	1		300.0	Total/NA
Fluoride	1.5		0.40	mg/L	1		300.0	Total/NA
Sulfate	380	D2	100	mg/L	50		300.0	Total/NA
Boron	0.55		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
Magnesium	36		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	5.8		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	120		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	220		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	220		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	780		20	mg/L	1		SM 2540C	Total/NA
pH	7.9	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	16.6	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW65-52917 — Lab Sample ID: 550-83572-10

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Arizona Public Service Company
Project/Site: APS - Four Corners CCR

TestAmerica Job ID: 550-83572-1
SDG: Cholla

Client Sample ID: FC-CCR-MW65-52917 (Continued) — Lab Sample ID: 550-83572-10

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	77		2.0	mg/L	1		300.0	Total/NA
Fluoride	1.8		0.40	mg/L	1		300.0	Total/NA
Sulfate	790	D2	40	mg/L	20		300.0	Total/NA
Boron	0.98		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	160		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	71		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	4.2		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	200		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	330		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	330		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	1500		20	mg/L	1		SM 2540C	Total/NA
pH	7.7	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	16.5	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-FD02-52917 — Lab Sample ID: 550-83572-11

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	76		2.0	mg/L	1		300.0	Total/NA
Fluoride	1.8		0.40	mg/L	1		300.0	Total/NA
Sulfate	780	D2	40	mg/L	20		300.0	Total/NA
Boron	1.0		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	150		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	71		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	4.1		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	210		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	330		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	330		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	1400		20	mg/L	1		SM 2540C	Total/NA
pH	7.8	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	19.6	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW66-52917 — Lab Sample ID: 550-83572-12

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1700	D2	400	mg/L	200		300.0	Total/NA
Fluoride	25	D1	2.0	mg/L	5		300.0	Total/NA
Sulfate	11000	D2	400	mg/L	200		300.0	Total/NA
Boron	130	D2	0.50	mg/L	10		200.7 Rev 4.4	Total/NA
Calcium	470		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	2600	D2	20	mg/L	10		200.7 Rev 4.4	Total/NA
Potassium	41		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	570		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	270		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	270		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	17000	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	20.2	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW67-52917 — Lab Sample ID: 550-83572-13

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Arizona Public Service Company
Project/Site: APS - Four Corners CCR

TestAmerica Job ID: 550-83572-1
SDG: Cholla

Client Sample ID: FC-CCR-MW67-52917 (Continued) — Lab Sample ID: 550-83572-13

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1900	D2	400	mg/L	200		300.0	Total/NA
Fluoride	21	D1	2.0	mg/L	5		300.0	Total/NA
Sulfate	11000	D2	400	mg/L	200		300.0	Total/NA
Boron	120	D2	0.50	mg/L	10		200.7 Rev 4.4	Total/NA
Calcium	490		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	2500	D2	20	mg/L	10		200.7 Rev 4.4	Total/NA
Potassium	34		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	570		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	350		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	350		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	17000	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.2	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	20.1	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW68-52917 — Lab Sample ID: 550-83572-14

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1400	D2	400	mg/L	200		300.0	Total/NA
Fluoride	8.3	D1	2.0	mg/L	5		300.0	Total/NA
Sulfate	9400	D2	400	mg/L	200		300.0	Total/NA
Boron	120	D2	0.50	mg/L	10		200.7 Rev 4.4	Total/NA
Calcium	480		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	2300	D2	20	mg/L	10		200.7 Rev 4.4	Total/NA
Potassium	15		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	570		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	570		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	16000	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	20.5	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW69-52917 — Lab Sample ID: 550-83572-15

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1500	D2	400	mg/L	200		300.0	Total/NA
Fluoride	16	D1	2.0	mg/L	5		300.0	Total/NA
Sulfate	11000	D2	400	mg/L	200		300.0	Total/NA
Boron	120	D2	0.50	mg/L	10		200.7 Rev 4.4	Total/NA
Calcium	460		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	2500	D2	20	mg/L	10		200.7 Rev 4.4	Total/NA
Potassium	38		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	600		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	300		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	300		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	16000	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	20.5	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW70-52917 — Lab Sample ID: 550-83572-16

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Arizona Public Service Company
Project/Site: APS - Four Corners CCR

TestAmerica Job ID: 550-83572-1
SDG: Cholla

Client Sample ID: FC-CCR-MW70-52917 (Continued) — Lab Sample ID: 550-83572-16

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1100	D2	400	mg/L	200		300.0	Total/NA
Fluoride	2.6	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	6600	D2	400	mg/L	200		300.0	Total/NA
Boron	93	D2	0.50	mg/L	10		200.7 Rev 4.4	Total/NA
Calcium	500		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	1300	D2	20	mg/L	10		200.7 Rev 4.4	Total/NA
Potassium	17		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	820		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	500		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	500		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	20.6	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW71-52917 — Lab Sample ID: 550-83572-17

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	580	D2	400	mg/L	200		300.0	Total/NA
Sulfate	9900	D2	400	mg/L	200		300.0	Total/NA
Boron	0.58		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	460		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	1800	D2	20	mg/L	10		200.7 Rev 4.4	Total/NA
Potassium	26		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	1100		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	420		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	420		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	14000	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	20.4	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW72-52917 — Lab Sample ID: 550-83572-18

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	460	D2	10	mg/L	5		300.0	Total/NA
Sulfate	11000	D2	400	mg/L	200		300.0	Total/NA
Boron	0.25		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	470		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	2300	D2	20	mg/L	10		200.7 Rev 4.4	Total/NA
Potassium	28		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	730		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	600		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	600		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	15000	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.2	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	20.1	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW73-52917 — Lab Sample ID: 550-83572-19

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	290	D2	200	mg/L	100		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: FC-CCR-MW73-52917 (Continued) — Lab Sample ID: 550-83572-19

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	4300	D2	200	mg/L	100		300.0	Total/NA
Boron	1.8		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
Magnesium	460		2.0	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	690		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	480		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	480		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	6100	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	20.2	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW74-52917 — Lab Sample ID: 550-83572-20

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	420	D2	200	mg/L	100		300.0	Total/NA
Fluoride	1.9	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	8100	D2	200	mg/L	100		300.0	Total/NA
Boron	1.6		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	430		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	640		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	22		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	2300	D2	5.0	mg/L	10		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	430		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	430		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	12000	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.8	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	20.1	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW75-53017 — Lab Sample ID: 550-83572-21

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	290	D2	10	mg/L	5		300.0	Total/NA
Sulfate	4400	D2	400	mg/L	200		300.0	Total/NA
Boron	24		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	430		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	220		2.0	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	1200		0.50	mg/L	1		200.7 Rev 4.4	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	6400	D2	100	mg/L	1		SM 2540C	Total/NA
pH	8.3	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	17.2	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Arizona Public Service Company
Project/Site: APS - Four Corners CCR

TestAmerica Job ID: 550-83572-1
SDG: Cholla

Client Sample ID: FC-CCR-MW7-53017

Lab Sample ID: 550-83572-1
Date Collected: 05/30/17 11:09
Matrix: Water
Date Received: 05/31/17 13:10

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	430	D2	400	mg/L			06/12/17 17:34	200
Fluoride	ND	D1 D5	0.80	mg/L			06/12/17 17:15	2
Sulfate	7100	D2 M3	400	mg/L			06/12/17 17:34	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	7.3		0.050	mg/L		06/05/17 11:18	06/06/17 19:11	1
Calcium	410		2.0	mg/L		06/05/17 11:18	06/06/17 19:11	1
Magnesium	590		2.0	mg/L		06/05/17 11:18	06/06/17 19:11	1
Potassium	34		0.50	mg/L		06/05/17 11:18	06/06/17 19:11	1
Sodium	1600		0.50	mg/L		06/05/17 11:18	06/06/17 19:11	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	500		6.0	mg/L			06/05/17 14:11	1
Bicarbonate Alkalinity as CaCO3	500		6.0	mg/L			06/05/17 14:11	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			06/05/17 14:11	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			06/05/17 14:11	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			06/05/17 14:11	1
Total Dissolved Solids	10000	D2	100	mg/L			06/02/17 12:15	1
pH	7.5	H5	1.7	SU			06/01/17 12:47	1
Temperature	18.3	H5	0.1	Degrees C			06/01/17 12:47	1

Client Sample ID: FC-CCR-MW8-53017

Lab Sample ID: 550-83572-2
Date Collected: 05/30/17 10:14
Matrix: Water
Date Received: 05/31/17 13:10

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1100	D2	400	mg/L			06/12/17 19:24	200
Fluoride	ND	D1 D5	2.0	mg/L			06/12/17 19:06	5
Sulfate	10000	D2	400	mg/L			06/12/17 19:24	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	16		0.050	mg/L		06/05/17 11:18	06/06/17 19:17	1
Calcium	430		2.0	mg/L		06/05/17 11:18	06/06/17 19:17	1
Magnesium	750		2.0	mg/L		06/05/17 11:18	06/06/17 19:17	1
Potassium	35		0.50	mg/L		06/05/17 11:18	06/06/17 19:17	1
Sodium	3100	D2	5.0	mg/L		06/05/17 11:18	06/07/17 15:37	10

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	510		6.0	mg/L			06/01/17 12:20	1
Bicarbonate Alkalinity as CaCO3	510		6.0	mg/L			06/01/17 12:20	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 12:20	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			06/01/17 12:20	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 12:20	1
Total Dissolved Solids	15000	D2	100	mg/L			06/05/17 11:56	1
pH	7.1	H5	1.7	SU			06/01/17 12:47	1

Client Sample Results

Client: Arizona Public Service Company
Project/Site: APS - Four Corners CCR

TestAmerica Job ID: 550-83572-1
SDG: Cholla

Client Sample ID: FC-CCR-MW8-53017

Lab Sample ID: 550-83572-2
Date Collected: 05/30/17 10:14
Matrix: Water
Date Received: 05/31/17 13:10

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Temperature	15.7	H5	0.1	Degrees C			06/01/17 12:47	1

Client Sample ID: FC-CCR-MW49A-53017

Lab Sample ID: 550-83572-3
Date Collected: 05/30/17 12:01
Matrix: Water
Date Received: 05/31/17 13:10

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	510	D2	400	mg/L			06/22/17 03:04	200
Fluoride	ND	D1 D5	2.0	mg/L			06/12/17 20:19	5
Sulfate	18000	D2	1000	mg/L			06/12/17 20:38	500

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2.2		0.050	mg/L		06/05/17 11:18	06/06/17 19:23	1
Calcium	420		2.0	mg/L		06/05/17 11:18	06/06/17 19:23	1
Magnesium	1200	D2	20	mg/L		06/05/17 11:18	06/07/17 15:48	10
Potassium	73		0.50	mg/L		06/05/17 11:18	06/06/17 19:23	1
Sodium	5900	D2	5.0	mg/L		06/05/17 11:18	06/07/17 15:48	10

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	850		6.0	mg/L			06/05/17 11:55	1
Bicarbonate Alkalinity as CaCO3	850		6.0	mg/L			06/05/17 11:55	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			06/05/17 11:55	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			06/05/17 11:55	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			06/05/17 11:55	1
Total Dissolved Solids	25000	D2	1000	mg/L			06/06/17 12:46	1
pH	7.3	H5	1.7	SU			06/01/17 12:47	1
Temperature	15.0	H5	0.1	Degrees C			06/01/17 12:47	1

Client Sample ID: FC-CCR-MW60-53017

Lab Sample ID: 550-83572-4
Date Collected: 05/30/17 09:35
Matrix: Water
Date Received: 05/31/17 13:10

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	440	D2	200	mg/L			06/12/17 21:15	100
Fluoride	7.0	D1	0.80	mg/L			06/12/17 20:56	2
Sulfate	5300	D2	200	mg/L			06/12/17 21:15	100

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	62		0.050	mg/L		06/05/17 11:18	06/06/17 19:29	1
Calcium	440		2.0	mg/L		06/05/17 11:18	06/06/17 19:29	1
Magnesium	490		2.0	mg/L		06/05/17 11:18	06/06/17 19:29	1
Potassium	26		0.50	mg/L		06/05/17 11:18	06/06/17 19:29	1
Sodium	1100		0.50	mg/L		06/05/17 11:18	06/06/17 19:29	1

Client Sample Results

Client: Arizona Public Service Company
Project/Site: APS - Four Corners CCR

TestAmerica Job ID: 550-83572-1
SDG: Cholla

Client Sample ID: FC-CCR-MW60-53017

Lab Sample ID: 550-83572-4
Date Collected: 05/30/17 09:35
Matrix: Water
Date Received: 05/31/17 13:10

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	130		6.0	mg/L			06/01/17 12:40	1
Bicarbonate Alkalinity as CaCO3	130		6.0	mg/L			06/01/17 12:40	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 12:40	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			06/01/17 12:40	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 12:40	1
Total Dissolved Solids	8200	D2	100	mg/L			06/05/17 11:56	1
pH	7.6	H5	1.7	SU			06/01/17 12:47	1
Temperature	15.2	H5	0.1	Degrees C			06/01/17 12:47	1

Client Sample ID: FC-CCR-MW61-53017

Lab Sample ID: 550-83572-5
Date Collected: 05/30/17 08:24
Matrix: Water
Date Received: 05/31/17 13:10

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	300	D2	100	mg/L			06/12/17 21:51	50
Fluoride	1.2		0.40	mg/L			06/12/17 21:33	1
Sulfate	3600	D2	100	mg/L			06/12/17 21:51	50

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	40		0.050	mg/L		06/05/17 11:18	06/06/17 19:35	1
Calcium	520		2.0	mg/L		06/05/17 11:18	06/06/17 19:35	1
Magnesium	130		2.0	mg/L		06/05/17 11:18	06/06/17 19:35	1
Potassium	20		0.50	mg/L		06/05/17 11:18	06/06/17 19:35	1
Sodium	1000		0.50	mg/L		06/05/17 11:18	06/06/17 19:35	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	88		6.0	mg/L			06/01/17 13:04	1
Bicarbonate Alkalinity as CaCO3	73		6.0	mg/L			06/01/17 13:04	1
Carbonate Alkalinity as CaCO3	16		6.0	mg/L			06/01/17 13:04	1
Alkalinity, Phenolphthalein	7.8		6.0	mg/L			06/01/17 13:04	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 13:04	1
Total Dissolved Solids	5400	D2	100	mg/L			06/05/17 11:56	1
pH	8.6	H5	1.7	SU			06/01/17 12:47	1
Temperature	15.2	H5	0.1	Degrees C			06/01/17 12:47	1

Client Sample ID: FC-CCR-MW62-52917

Lab Sample ID: 550-83572-6
Date Collected: 05/29/17 09:08
Matrix: Water
Date Received: 05/31/17 13:10

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	120	D2	100	mg/L			06/12/17 22:28	50
Fluoride	1.2		0.40	mg/L			06/12/17 22:10	1
Sulfate	3500	D2	100	mg/L			06/12/17 22:28	50

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.9		0.050	mg/L		06/05/17 11:18	06/06/17 19:41	1

Client Sample Results

Client: Arizona Public Service Company
Project/Site: APS - Four Corners CCR

TestAmerica Job ID: 550-83572-1
SDG: Cholla

Client Sample ID: FC-CCR-MW62-52917

Lab Sample ID: 550-83572-6
Date Collected: 05/29/17 09:08
Matrix: Water
Date Received: 05/31/17 13:10

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	570		2.0	mg/L		06/05/17 11:18	06/06/17 19:41	1
Magnesium	350		2.0	mg/L		06/05/17 11:18	06/06/17 19:41	1
Potassium	9.5		0.50	mg/L		06/05/17 11:18	06/06/17 19:41	1
Sodium	670		0.50	mg/L		06/05/17 11:18	06/06/17 19:41	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	800		6.0	mg/L			06/01/17 13:24	1
Bicarbonate Alkalinity as CaCO3	800		6.0	mg/L			06/01/17 13:24	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 13:24	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			06/01/17 13:24	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 13:24	1
Total Dissolved Solids	5500	D2	100	mg/L			06/01/17 12:28	1
pH	7.1	H5	1.7	SU			06/01/17 12:47	1
Temperature	14.9	H5	0.1	Degrees C			06/01/17 12:47	1

Client Sample ID: FC-CCR-MW63-52817

Lab Sample ID: 550-83572-7
Date Collected: 05/28/17 14:55
Matrix: Water
Date Received: 05/31/17 13:10

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	98		2.0	mg/L			06/12/17 22:47	1
Fluoride	1.6		0.40	mg/L			06/12/17 22:47	1
Sulfate	2700	D2	100	mg/L			06/12/17 23:05	50

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.5		0.050	mg/L		06/05/17 11:18	06/06/17 19:47	1
Calcium	550		2.0	mg/L		06/05/17 11:18	06/06/17 19:47	1
Magnesium	280		2.0	mg/L		06/05/17 11:18	06/06/17 19:47	1
Potassium	6.0		0.50	mg/L		06/05/17 11:18	06/06/17 19:47	1
Sodium	340		0.50	mg/L		06/05/17 11:18	06/06/17 19:47	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	490		6.0	mg/L			06/01/17 13:33	1
Bicarbonate Alkalinity as CaCO3	490		6.0	mg/L			06/01/17 13:33	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 13:33	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			06/01/17 13:33	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 13:33	1
Total Dissolved Solids	4300	D2	40	mg/L			06/01/17 12:28	1
pH	7.3	H5	1.7	SU			06/01/17 12:47	1
Temperature	15.9	H5	0.1	Degrees C			06/01/17 12:47	1

Client Sample Results

Client: Arizona Public Service Company
Project/Site: APS - Four Corners CCR

TestAmerica Job ID: 550-83572-1
SDG: Cholla

Client Sample ID: FC-CCR-FD01-52817

Lab Sample ID: 550-83572-8
Date Collected: 05/28/17 14:55
Matrix: Water
Date Received: 05/31/17 13:10

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	99		2.0	mg/L			06/13/17 00:00	1
Fluoride	1.6		0.40	mg/L			06/13/17 00:00	1
Sulfate	2800	D2	100	mg/L			06/13/17 00:19	50

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.4		0.050	mg/L		06/05/17 11:18	06/06/17 19:53	1
Calcium	530		2.0	mg/L		06/05/17 11:18	06/06/17 19:53	1
Magnesium	270		2.0	mg/L		06/05/17 11:18	06/06/17 19:53	1
Potassium	5.9		0.50	mg/L		06/05/17 11:18	06/06/17 19:53	1
Sodium	350		0.50	mg/L		06/05/17 11:18	06/06/17 19:53	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	490		6.0	mg/L			06/01/17 13:44	1
Bicarbonate Alkalinity as CaCO3	490		6.0	mg/L			06/01/17 13:44	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 13:44	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			06/01/17 13:44	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 13:44	1
Total Dissolved Solids	4200	D2	40	mg/L			06/01/17 12:28	1
pH	7.3	H5	1.7	SU			06/01/17 12:47	1
Temperature	16.2	H5	0.1	Degrees C			06/01/17 12:47	1

Client Sample ID: FC-CCR-MW64-52817

Lab Sample ID: 550-83572-9
Date Collected: 05/28/17 14:09
Matrix: Water
Date Received: 05/31/17 13:10

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	51		2.0	mg/L			06/13/17 00:37	1
Fluoride	1.5		0.40	mg/L			06/13/17 00:37	1
Sulfate	380	D2	100	mg/L			06/13/17 00:55	50

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.55		0.050	mg/L		06/05/17 11:18	06/06/17 19:59	1
Calcium	93		2.0	mg/L		06/05/17 11:18	06/06/17 19:59	1
Magnesium	36		2.0	mg/L		06/05/17 11:18	06/06/17 19:59	1
Potassium	5.8		0.50	mg/L		06/05/17 11:18	06/06/17 19:59	1
Sodium	120		0.50	mg/L		06/05/17 11:18	06/06/17 19:59	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	220		6.0	mg/L			06/01/17 13:53	1
Bicarbonate Alkalinity as CaCO3	220		6.0	mg/L			06/01/17 13:53	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 13:53	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			06/01/17 13:53	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 13:53	1
Total Dissolved Solids	780		20	mg/L			06/01/17 12:28	1
pH	7.9	H5	1.7	SU			06/01/17 12:47	1
Temperature	16.6	H5	0.1	Degrees C			06/01/17 12:47	1

Client Sample Results

Client: Arizona Public Service Company
Project/Site: APS - Four Corners CCR

TestAmerica Job ID: 550-83572-1
SDG: Cholla

Client Sample ID: FC-CCR-MW65-52917

Lab Sample ID: 550-83572-10
Date Collected: 05/29/17 08:19
Matrix: Water
Date Received: 05/31/17 13:10

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	77		2.0	mg/L			06/13/17 01:14	1
Fluoride	1.8		0.40	mg/L			06/13/17 01:14	1
Sulfate	790	D2	40	mg/L			06/13/17 01:32	20

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.98		0.050	mg/L		06/05/17 11:18	06/06/17 20:02	1
Calcium	160		2.0	mg/L		06/05/17 11:18	06/06/17 20:02	1
Magnesium	71		2.0	mg/L		06/05/17 11:18	06/06/17 20:02	1
Potassium	4.2		0.50	mg/L		06/05/17 11:18	06/06/17 20:02	1
Sodium	200		0.50	mg/L		06/05/17 11:18	06/06/17 20:02	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	330		6.0	mg/L			06/01/17 14:02	1
Bicarbonate Alkalinity as CaCO3	330		6.0	mg/L			06/01/17 14:02	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 14:02	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			06/01/17 14:02	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 14:02	1
Total Dissolved Solids	1500		20	mg/L			06/01/17 12:28	1
pH	7.7	H5	1.7	SU			06/01/17 12:47	1
Temperature	16.5	H5	0.1	Degrees C			06/01/17 12:47	1

Client Sample ID: FC-CCR-FD02-52917

Lab Sample ID: 550-83572-11
Date Collected: 05/29/17 08:19
Matrix: Water
Date Received: 05/31/17 13:10

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	76		2.0	mg/L			06/13/17 01:51	1
Fluoride	1.8		0.40	mg/L			06/13/17 01:51	1
Sulfate	780	D2	40	mg/L			06/13/17 02:09	20

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.0		0.050	mg/L		06/05/17 11:18	06/06/17 20:10	1
Calcium	150		2.0	mg/L		06/05/17 11:18	06/06/17 20:10	1
Magnesium	71		2.0	mg/L		06/05/17 11:18	06/06/17 20:10	1
Potassium	4.1		0.50	mg/L		06/05/17 11:18	06/06/17 20:10	1
Sodium	210		0.50	mg/L		06/05/17 11:18	06/06/17 20:10	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	330		6.0	mg/L			06/01/17 14:12	1
Bicarbonate Alkalinity as CaCO3	330		6.0	mg/L			06/01/17 14:12	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 14:12	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			06/01/17 14:12	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 14:12	1
Total Dissolved Solids	1400		20	mg/L			06/02/17 12:15	1
pH	7.8	H5	1.7	SU			06/01/17 12:47	1

Client Sample Results

Client: Arizona Public Service Company
Project/Site: APS - Four Corners CCR

TestAmerica Job ID: 550-83572-1
SDG: Cholla

Client Sample ID: FC-CCR-FD02-52917

Lab Sample ID: 550-83572-11
Date Collected: 05/29/17 08:19
Matrix: Water
Date Received: 05/31/17 13:10

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Temperature	19.6	H5	0.1	Degrees C			06/01/17 12:47	1

Client Sample ID: FC-CCR-MW66-52917

Lab Sample ID: 550-83572-12
Date Collected: 05/29/17 09:38
Matrix: Water
Date Received: 05/31/17 13:10

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1700	D2	400	mg/L			06/13/17 02:46	200
Fluoride	25	D1	2.0	mg/L			06/13/17 02:27	5
Sulfate	11000	D2	400	mg/L			06/13/17 02:46	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	130	D2	0.50	mg/L		06/05/17 11:18	06/07/17 15:51	10
Calcium	470		2.0	mg/L		06/05/17 11:18	06/06/17 20:13	1
Magnesium	2600	D2	20	mg/L		06/05/17 11:18	06/07/17 15:51	10
Potassium	41		0.50	mg/L		06/05/17 11:18	06/06/17 20:13	1
Sodium	570		0.50	mg/L		06/05/17 11:18	06/06/17 20:13	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	270		6.0	mg/L			06/01/17 14:20	1
Bicarbonate Alkalinity as CaCO3	270		6.0	mg/L			06/01/17 14:20	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 14:20	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			06/01/17 14:20	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 14:20	1
Total Dissolved Solids	17000	D2	100	mg/L			06/02/17 12:15	1
pH	7.4	H5	1.7	SU			06/01/17 12:47	1
Temperature	20.2	H5	0.1	Degrees C			06/01/17 12:47	1

Client Sample ID: FC-CCR-MW67-52917

Lab Sample ID: 550-83572-13
Date Collected: 05/29/17 12:19
Matrix: Water
Date Received: 05/31/17 13:10

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1900	D2	400	mg/L			06/13/17 03:59	200
Fluoride	21	D1	2.0	mg/L			06/13/17 03:41	5
Sulfate	11000	D2	400	mg/L			06/13/17 03:59	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	120	D2	0.50	mg/L		06/05/17 11:18	06/07/17 15:56	10
Calcium	490		2.0	mg/L		06/05/17 11:18	06/06/17 20:19	1
Magnesium	2500	D2	20	mg/L		06/05/17 11:18	06/07/17 15:56	10
Potassium	34		0.50	mg/L		06/05/17 11:18	06/06/17 20:19	1
Sodium	570		0.50	mg/L		06/05/17 11:18	06/06/17 20:19	1

Client Sample Results

Client: Arizona Public Service Company
Project/Site: APS - Four Corners CCR

TestAmerica Job ID: 550-83572-1
SDG: Cholla

Client Sample ID: FC-CCR-MW67-52917

Lab Sample ID: 550-83572-13
Date Collected: 05/29/17 12:19
Matrix: Water
Date Received: 05/31/17 13:10

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	350		6.0	mg/L			06/01/17 14:29	1
Bicarbonate Alkalinity as CaCO3	350		6.0	mg/L			06/01/17 14:29	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 14:29	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			06/01/17 14:29	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 14:29	1
Total Dissolved Solids	17000	D2	100	mg/L			06/02/17 12:15	1
pH	7.2	H5	1.7	SU			06/01/17 12:47	1
Temperature	20.1	H5	0.1	Degrees C			06/01/17 12:47	1

Client Sample ID: FC-CCR-MW68-52917

Lab Sample ID: 550-83572-14
Date Collected: 05/29/17 12:53
Matrix: Water
Date Received: 05/31/17 13:10

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1400	D2	400	mg/L			06/13/17 04:36	200
Fluoride	8.3	D1	2.0	mg/L			06/13/17 04:18	5
Sulfate	9400	D2	400	mg/L			06/13/17 04:36	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	120	D2	0.50	mg/L		06/05/17 11:18	06/07/17 16:02	10
Calcium	480		2.0	mg/L		06/05/17 11:18	06/06/17 20:25	1
Magnesium	2300	D2	20	mg/L		06/05/17 11:18	06/07/17 16:02	10
Potassium	15		0.50	mg/L		06/05/17 11:18	06/06/17 20:25	1
Sodium	630		0.50	mg/L		06/05/17 11:18	06/06/17 20:25	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	570		6.0	mg/L			06/01/17 14:41	1
Bicarbonate Alkalinity as CaCO3	570		6.0	mg/L			06/01/17 14:41	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 14:41	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			06/01/17 14:41	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 14:41	1
Total Dissolved Solids	16000	D2	100	mg/L			06/02/17 12:15	1
pH	7.5	H5	1.7	SU			06/01/17 12:47	1
Temperature	20.5	H5	0.1	Degrees C			06/01/17 12:47	1

Client Sample ID: FC-CCR-MW69-52917

Lab Sample ID: 550-83572-15
Date Collected: 05/29/17 13:23
Matrix: Water
Date Received: 05/31/17 13:10

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1500	D2	400	mg/L			06/13/17 05:13	200
Fluoride	16	D1	2.0	mg/L			06/13/17 04:55	5
Sulfate	11000	D2	400	mg/L			06/13/17 05:13	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	120	D2	0.50	mg/L		06/05/17 11:18	06/07/17 16:08	10

Client Sample Results

Client: Arizona Public Service Company
Project/Site: APS - Four Corners CCR

TestAmerica Job ID: 550-83572-1
SDG: Cholla

Client Sample ID: FC-CCR-MW69-52917

Lab Sample ID: 550-83572-15
Date Collected: 05/29/17 13:23
Matrix: Water
Date Received: 05/31/17 13:10

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	460		2.0	mg/L		06/05/17 11:18	06/06/17 20:31	1
Magnesium	2500	D2	20	mg/L		06/05/17 11:18	06/07/17 16:08	10
Potassium	38		0.50	mg/L		06/05/17 11:18	06/06/17 20:31	1
Sodium	600		0.50	mg/L		06/05/17 11:18	06/06/17 20:31	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	300		6.0	mg/L			06/01/17 15:05	1
Bicarbonate Alkalinity as CaCO3	300		6.0	mg/L			06/01/17 15:05	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 15:05	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			06/01/17 15:05	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 15:05	1
Total Dissolved Solids	16000	D2	100	mg/L			06/02/17 12:15	1
pH	7.3	H5	1.7	SU			06/01/17 12:47	1
Temperature	20.5	H5	0.1	Degrees C			06/01/17 12:47	1

Client Sample ID: FC-CCR-MW70-52917

Lab Sample ID: 550-83572-16
Date Collected: 05/29/17 10:15
Matrix: Water
Date Received: 05/31/17 13:10

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1100	D2	400	mg/L			06/13/17 05:50	200
Fluoride	2.6	D1	0.80	mg/L			06/13/17 05:31	2
Sulfate	6600	D2	400	mg/L			06/13/17 05:50	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	93	D2	0.50	mg/L		06/05/17 11:18	06/07/17 16:14	10
Calcium	500		2.0	mg/L		06/05/17 11:18	06/06/17 20:37	1
Magnesium	1300	D2	20	mg/L		06/05/17 11:18	06/07/17 16:14	10
Potassium	17		0.50	mg/L		06/05/17 11:18	06/06/17 20:37	1
Sodium	820		0.50	mg/L		06/05/17 11:18	06/06/17 20:37	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	500		6.0	mg/L			06/01/17 15:24	1
Bicarbonate Alkalinity as CaCO3	500		6.0	mg/L			06/01/17 15:24	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 15:24	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			06/01/17 15:24	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 15:24	1
Total Dissolved Solids	11000	D2	100	mg/L			06/02/17 12:15	1
pH	7.2	H5	1.7	SU			06/01/17 12:47	1
Temperature	20.6	H5	0.1	Degrees C			06/01/17 12:47	1

Client Sample Results

Client: Arizona Public Service Company
Project/Site: APS - Four Corners CCR

TestAmerica Job ID: 550-83572-1
SDG: Cholla

Client Sample ID: FC-CCR-MW71-52917

Lab Sample ID: 550-83572-17
Date Collected: 05/29/17 11:24
Matrix: Water
Date Received: 05/31/17 13:10

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	580	D2	400	mg/L			06/13/17 08:17	200
Fluoride	ND	D1 D5	2.0	mg/L			06/13/17 07:59	5
Sulfate	9900	D2	400	mg/L			06/13/17 08:17	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.58		0.050	mg/L		06/05/17 11:18	06/06/17 20:43	1
Calcium	460		2.0	mg/L		06/05/17 11:18	06/06/17 20:43	1
Magnesium	1800	D2	20	mg/L		06/05/17 11:18	06/07/17 16:17	10
Potassium	26		0.50	mg/L		06/05/17 11:18	06/06/17 20:43	1
Sodium	1100		0.50	mg/L		06/05/17 11:18	06/06/17 20:43	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	420		6.0	mg/L			06/01/17 15:35	1
Bicarbonate Alkalinity as CaCO3	420		6.0	mg/L			06/01/17 15:35	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 15:35	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			06/01/17 15:35	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 15:35	1
Total Dissolved Solids	14000	D2	100	mg/L			06/02/17 12:15	1
pH	7.3	H5	1.7	SU			06/01/17 12:47	1
Temperature	20.4	H5	0.1	Degrees C			06/01/17 12:47	1

Client Sample ID: FC-CCR-MW72-52917

Lab Sample ID: 550-83572-18
Date Collected: 05/29/17 10:56
Matrix: Water
Date Received: 05/31/17 13:10

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	460	D2	10	mg/L			06/13/17 09:49	5
Fluoride	ND	D1 D5	2.0	mg/L			06/13/17 09:49	5
Sulfate	11000	D2	400	mg/L			06/13/17 10:08	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.25		0.050	mg/L		06/05/17 11:18	06/06/17 20:49	1
Calcium	470		2.0	mg/L		06/05/17 11:18	06/06/17 20:49	1
Magnesium	2300	D2	20	mg/L		06/05/17 11:18	06/07/17 16:19	10
Potassium	28		0.50	mg/L		06/05/17 11:18	06/06/17 20:49	1
Sodium	730		0.50	mg/L		06/05/17 11:18	06/06/17 20:49	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	600		6.0	mg/L			06/01/17 15:45	1
Bicarbonate Alkalinity as CaCO3	600		6.0	mg/L			06/01/17 15:45	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 15:45	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			06/01/17 15:45	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 15:45	1
Total Dissolved Solids	15000	D2	100	mg/L			06/02/17 12:15	1
pH	7.2	H5	1.7	SU			06/01/17 12:47	1
Temperature	20.1	H5	0.1	Degrees C			06/01/17 12:47	1

Client Sample Results

Client: Arizona Public Service Company
Project/Site: APS - Four Corners CCR

TestAmerica Job ID: 550-83572-1
SDG: Cholla

Client Sample ID: FC-CCR-MW73-52917

Lab Sample ID: 550-83572-19
Date Collected: 05/29/17 14:03
Matrix: Water
Date Received: 05/31/17 13:10

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	290	D2	200	mg/L			06/13/17 10:44	100
Fluoride	ND	D1 D5	0.80	mg/L			06/13/17 10:26	2
Sulfate	4300	D2	200	mg/L			06/13/17 10:44	100

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.8		0.050	mg/L		06/05/17 11:18	06/06/17 20:55	1
Calcium	510		2.0	mg/L		06/05/17 11:18	06/06/17 20:55	1
Magnesium	460		2.0	mg/L		06/05/17 11:18	06/06/17 20:55	1
Potassium	21		0.50	mg/L		06/05/17 11:18	06/06/17 20:55	1
Sodium	690		0.50	mg/L		06/05/17 11:18	06/06/17 20:55	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	480		6.0	mg/L			06/01/17 15:56	1
Bicarbonate Alkalinity as CaCO3	480		6.0	mg/L			06/01/17 15:56	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 15:56	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			06/01/17 15:56	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 15:56	1
Total Dissolved Solids	6100	D2	100	mg/L			06/02/17 12:15	1
pH	7.3	H5	1.7	SU			06/01/17 12:47	1
Temperature	20.2	H5	0.1	Degrees C			06/01/17 12:47	1

Client Sample ID: FC-CCR-MW74-52917

Lab Sample ID: 550-83572-20
Date Collected: 05/29/17 14:38
Matrix: Water
Date Received: 05/31/17 13:10

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	420	D2	200	mg/L			06/13/17 11:58	100
Fluoride	1.9	D1	0.80	mg/L			06/13/17 11:40	2
Sulfate	8100	D2	200	mg/L			06/13/17 11:58	100

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.6		0.050	mg/L		06/05/17 11:18	06/06/17 21:01	1
Calcium	430		2.0	mg/L		06/05/17 11:18	06/06/17 21:01	1
Magnesium	640		2.0	mg/L		06/05/17 11:18	06/06/17 21:01	1
Potassium	22		0.50	mg/L		06/05/17 11:18	06/06/17 21:01	1
Sodium	2300	D2	5.0	mg/L		06/05/17 11:18	06/07/17 16:25	10

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	430		6.0	mg/L			06/01/17 16:06	1
Bicarbonate Alkalinity as CaCO3	430		6.0	mg/L			06/01/17 16:06	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 16:06	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			06/01/17 16:06	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 16:06	1
Total Dissolved Solids	12000	D2	100	mg/L			06/02/17 12:15	1
pH	7.8	H5	1.7	SU			06/01/17 12:47	1

Client Sample ID: FC-CCR-MW74-52917

Lab Sample ID: 550-83572-20
Date Collected: 05/29/17 14:38
Matrix: Water
Date Received: 05/31/17 13:10

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Temperature	20.1	H5	0.1	Degrees C			06/01/17 12:47	1

Client Sample ID: FC-CCR-MW75-53017

Lab Sample ID: 550-83572-21
Date Collected: 05/30/17 08:52
Matrix: Water
Date Received: 05/31/17 13:10

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	290	D2	10	mg/L			06/13/17 12:16	5
Fluoride	ND	D1 D5	2.0	mg/L			06/13/17 12:16	5
Sulfate	4400	D2	400	mg/L			06/13/17 12:35	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	24		0.050	mg/L		06/05/17 11:26	06/06/17 17:35	1
Calcium	430		2.0	mg/L		06/05/17 11:26	06/06/17 17:35	1
Magnesium	220		2.0	mg/L		06/05/17 11:26	06/06/17 17:35	1
Potassium	21		0.50	mg/L		06/05/17 11:26	06/06/17 17:35	1
Sodium	1200		0.50	mg/L		06/05/17 11:26	06/06/17 17:35	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	96		6.0	mg/L			06/01/17 16:14	1
Bicarbonate Alkalinity as CaCO3	96		6.0	mg/L			06/01/17 16:14	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 16:14	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			06/01/17 16:14	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			06/01/17 16:14	1
Total Dissolved Solids	6400	D2	100	mg/L			06/05/17 11:56	1
pH	8.3	H5	1.7	SU			06/01/17 12:47	1
Temperature	17.2	H5	0.1	Degrees C			06/01/17 12:47	1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-119812/2 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119812

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0	mg/L			06/12/17 15:06	1
Fluoride	ND		0.40	mg/L			06/12/17 15:06	1
Sulfate	ND		2.0	mg/L			06/12/17 15:06	1

Lab Sample ID: LCS 550-119812/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119812

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	20.3		mg/L		101	90 - 110
Fluoride	4.00	4.23		mg/L		106	90 - 110
Sulfate	20.0	20.6		mg/L		103	90 - 110

Lab Sample ID: LCSD 550-119812/6 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119812

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	20.3		mg/L		101	90 - 110	0	20
Fluoride	4.00	4.22		mg/L		106	90 - 110	0	20
Sulfate	20.0	20.6		mg/L		103	90 - 110	0	20

Lab Sample ID: 550-83572-1MS — **Client Sample ID: FC-CCR-MW7-53017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119812

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	ND	D1 D5	8.00	8.12	D1	mg/L		97	80 - 120
Fluoride	ND	D1 D5	8.00	8.12	D1	mg/L		97	80 - 120

Lab Sample ID: 550-83572-1MS — **Client Sample ID: FC-CCR-MW7-53017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119812

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	430	D2	4000	4550	D2	mg/L		103	80 - 120
Sulfate	7100	D2 M3	4000	11500	D2	mg/L		109	80 - 120

Lab Sample ID: 550-83572-1MSD — **Client Sample ID: FC-CCR-MW7-53017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119812

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	8.18	D1	mg/L		98	80 - 120	1	20
Fluoride	ND	D1 D5	8.00	8.18	D1	mg/L		98	80 - 120	1	20

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-83572-1MSD — **Client Sample ID: FC-CCR-MW7-53017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119812

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	430	D2	4000	4510	D2	mg/L		102	80 - 120	1	20
Sulfate	7100	D2 M3	4000	11200	D2	mg/L		101	80 - 120	3	20

Lab Sample ID: MB 550-119813/52 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119813

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0	mg/L			06/13/17 06:27	1
Fluoride	ND		0.40	mg/L			06/13/17 06:27	1
Sulfate	ND		2.0	mg/L			06/13/17 06:27	1

Lab Sample ID: LCS 550-119813/55 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119813

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	20.3		mg/L		102	90 - 110
Fluoride	4.00	4.18		mg/L		104	90 - 110
Sulfate	20.0	20.8		mg/L		104	90 - 110

Lab Sample ID: LCSD 550-119813/56 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119813

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	20.3		mg/L		102	90 - 110	0	20
Fluoride	4.00	4.24		mg/L		106	90 - 110	1	20
Sulfate	20.0	20.7		mg/L		104	90 - 110	0	20

Lab Sample ID: 550-83572-17 MS — **Client Sample ID: FC-CCR-MW71-52917**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119813

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	ND	D1 D5	20.0	20.5	D1	mg/L		100	80 - 120

Lab Sample ID: 550-83572-17 MS — **Client Sample ID: FC-CCR-MW71-52917**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119813

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	580	D2	4000	4860	D2	mg/L		107	80 - 120
Sulfate	9900	D2	4000	13700	D2	mg/L		95	80 - 120

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-83572-17 MSD — **Client Sample ID: FC-CCR-MW71-52917**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119813

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	ND	D1 D5	20.0	20.7	D1	mg/L		101	80 - 120	1	20

Lab Sample ID: 550-83572-17 MSD — **Client Sample ID: FC-CCR-MW71-52917**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119813

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	580	D2	4000	4820	D2	mg/L		106	80 - 120	1	20
Sulfate	9900	D2	4000	13700	D2	mg/L		94	80 - 120	0	20

Lab Sample ID: MB 550-120621/2 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 120621

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0	mg/L			06/22/17 00:47	1
Fluoride	ND		0.40	mg/L			06/22/17 00:47	1
Sulfate	ND		2.0	mg/L			06/22/17 00:47	1

Lab Sample ID: LCS 550-120621/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 120621

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	20.6		mg/L		103	90 - 110
Fluoride	4.00	4.13		mg/L		103	90 - 110
Sulfate	20.0	20.4		mg/L		102	90 - 110

Lab Sample ID: LCSD 550-120621/6 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 120621

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	20.5		mg/L		103	90 - 110	0	20
Fluoride	4.00	4.12		mg/L		103	90 - 110	0	20
Sulfate	20.0	20.4		mg/L		102	90 - 110	0	20

Lab Sample ID: 550-83896-A-5 MS ^50 — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 120621

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	3000	D2	1000	4060	D2	mg/L		108	80 - 120
Fluoride	ND	D1	200	206	D1	mg/L		103	80 - 120
Sulfate	2400	D2	1000	3480	D2	mg/L		104	80 - 120

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-83896-A-5 MSD ^50
Matrix: Water
Analysis Batch: 120621

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	3000	D2	1000	4090	D2	mg/L		111	80 - 120	1	20
Fluoride	ND	D1	200	207	D1	mg/L		103	80 - 120	1	20
Sulfate	2400	D2	1000	3500	D2	mg/L		106	80 - 120	1	20

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 550-119101/1-A
Matrix: Water
Analysis Batch: 119317

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 119101

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Beryllium	ND		0.0010	mg/L		06/05/17 11:18	06/06/17 18:51	1
Boron	ND		0.050	mg/L		06/05/17 11:18	06/06/17 18:51	1
Lithium	ND		0.20	mg/L		06/05/17 11:18	06/06/17 18:51	1
Calcium	ND		2.0	mg/L		06/05/17 11:18	06/06/17 18:51	1
Magnesium	ND		2.0	mg/L		06/05/17 11:18	06/06/17 18:51	1
Potassium	ND		0.50	mg/L		06/05/17 11:18	06/06/17 18:51	1
Sodium	ND		0.50	mg/L		06/05/17 11:18	06/06/17 18:51	1

Lab Sample ID: LCS 550-119101/2-A
Matrix: Water
Analysis Batch: 119317

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 119101

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	1.00	1.03		mg/L		103	85 - 115
Boron	1.00	0.990		mg/L		99	85 - 115
Lithium	1.00	1.02		mg/L		102	85 - 115
Calcium	21.0	20.9		mg/L		100	85 - 115
Magnesium	21.0	21.2		mg/L		101	85 - 115
Potassium	20.0	19.9		mg/L		99	85 - 115
Sodium	20.0	19.4		mg/L		97	85 - 115

Lab Sample ID: LCSD 550-119101/3-A
Matrix: Water
Analysis Batch: 119317

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 119101

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Beryllium	1.00	0.998		mg/L		100	85 - 115	3	20
Boron	1.00	0.961		mg/L		96	85 - 115	3	20
Lithium	1.00	1.01		mg/L		101	85 - 115	1	20
Calcium	21.0	20.6		mg/L		98	85 - 115	2	20
Magnesium	21.0	20.9		mg/L		99	85 - 115	1	20
Potassium	20.0	19.7		mg/L		98	85 - 115	1	20
Sodium	20.0	19.2		mg/L		96	85 - 115	1	20

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

Lab Sample ID: 550-83572-1MS — **Client Sample ID: FC-CCR-MW7-53017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119317 — **Prep Batch: 119101**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	ND		1.00	0.995		mg/L		100	70 - 130
Boron	7.3		1.00	8.13	M3	mg/L		79	70 - 130
Calcium	410	M3	21.0	411	M3	mg/L		13	70 - 130
Lithium	0.79		1.00	1.79		mg/L		100	70 - 130
Magnesium	590	M3	21.0	601	M3	mg/L		67	70 - 130
Potassium	34		20.0	54.7		mg/L		105	70 - 130
Sodium	1600	M3	20.0	1650	M3	mg/L		38	70 - 130

Lab Sample ID: 550-83572-1MSD — **Client Sample ID: FC-CCR-MW7-53017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119317 — **Prep Batch: 119101**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Beryllium	ND		1.00	0.992		mg/L		99	70 - 130	0	20
Boron	7.3		1.00	8.05	M3	mg/L		71	70 - 130	1	20
Calcium	410	M3	21.0	413	M3	mg/L		23	70 - 130	1	20
Lithium	0.79		1.00	1.74		mg/L		94	70 - 130	3	20
Magnesium	590	M3	21.0	591	M3	mg/L		18	70 - 130	2	20
Potassium	34		20.0	53.8		mg/L		100	70 - 130	2	20
Sodium	1600	M3	20.0	1620	M3	mg/L		-152	70 - 130	2	20

Lab Sample ID: MB 550-119103/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119316 — **Prep Batch: 119103**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.050	mg/L		06/05/17 11:26	06/06/17 17:16	1
Calcium	ND		2.0	mg/L		06/05/17 11:26	06/06/17 17:16	1
Magnesium	ND		2.0	mg/L		06/05/17 11:26	06/06/17 17:16	1
Potassium	ND		0.50	mg/L		06/05/17 11:26	06/06/17 17:16	1
Sodium	ND		0.50	mg/L		06/05/17 11:26	06/06/17 17:16	1

Lab Sample ID: LCS 550-119103/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119316 — **Prep Batch: 119103**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	0.954		mg/L		95	85 - 115
Calcium	21.0	20.7		mg/L		99	85 - 115
Magnesium	21.0	20.3		mg/L		97	85 - 115
Potassium	20.0	18.9		mg/L		95	85 - 115
Sodium	20.0	18.5		mg/L		93	85 - 115

Lab Sample ID: LCSD 550-119103/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119316 — **Prep Batch: 119103**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	1.00	0.956		mg/L		96	85 - 115	0	20

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

Lab Sample ID: LCSD 550-119103/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119316 — **Prep Batch: 119103**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Calcium	21.0	20.8		mg/L		99	85 - 115	0	20
Magnesium	21.0	20.4		mg/L		97	85 - 115	1	20
Potassium	20.0	19.0		mg/L		95	85 - 115	0	20
Sodium	20.0	18.8		mg/L		94	85 - 115	2	20

Lab Sample ID: 550-83522-A-1-B MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119316 — **Prep Batch: 119103**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	0.13		1.00	1.09		mg/L		96	70 - 130
Calcium	ND		21.0	20.8		mg/L		99	70 - 130
Magnesium	ND		21.0	20.5		mg/L		97	70 - 130
Potassium	ND		20.0	19.1		mg/L		95	70 - 130
Sodium	21		20.0	37.9		mg/L		85	70 - 130

Lab Sample ID: 550-83522-A-1-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119316 — **Prep Batch: 119103**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	0.13		1.00	1.10		mg/L		97	70 - 130	1	20
Calcium	ND		21.0	20.7		mg/L		98	70 - 130	0	20
Magnesium	ND		21.0	20.4		mg/L		97	70 - 130	0	20
Potassium	ND		20.0	19.0		mg/L		95	70 - 130	0	20
Sodium	21		20.0	38.1		mg/L		85	70 - 130	1	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 550-119329/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119484 — **Prep Batch: 119329**

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Hg	ND		0.00020		mg/L		06/07/17 10:15	06/08/17 12:40	1

Lab Sample ID: LCS 550-119329/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119484 — **Prep Batch: 119329**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Hg	0.0100	0.00965		mg/L		96	85 - 115

Lab Sample ID: LCSD 550-119329/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119484 — **Prep Batch: 119329**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hg	0.0100	0.00968		mg/L		97	85 - 115	0	20

Method: 245.1 - Mercury (CVAA) (Continued)

Lab Sample ID: 550-83572-1MS — **Client Sample ID: FC-CCR-MW7-53017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119484 — **Prep Batch: 119329**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Hg	ND		0.0100	0.00911		mg/L		91	70 - 130		

Lab Sample ID: 550-83572-1MSD — **Client Sample ID: FC-CCR-MW7-53017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119484 — **Prep Batch: 119329**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hg	ND		0.0100	0.00922		mg/L		92	70 - 130	1	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 550-119042/35 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119042

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	ND		6.0		mg/L			06/01/17 14:56	1
Bicarbonate Alkalinity as CaCO3	ND		6.0		mg/L			06/01/17 14:56	1
Carbonate Alkalinity as CaCO3	ND		6.0		mg/L			06/01/17 14:56	1
Alkalinity, Phenolphthalein	ND		6.0		mg/L			06/01/17 14:56	1
Hydroxide Alkalinity as CaCO3	ND		6.0		mg/L			06/01/17 14:56	1

Lab Sample ID: MB 550-119042/7 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119042

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	ND		6.0		mg/L			06/01/17 11:07	1
Bicarbonate Alkalinity as CaCO3	ND		6.0		mg/L			06/01/17 11:07	1
Carbonate Alkalinity as CaCO3	ND		6.0		mg/L			06/01/17 11:07	1
Alkalinity, Phenolphthalein	ND		6.0		mg/L			06/01/17 11:07	1
Hydroxide Alkalinity as CaCO3	ND		6.0		mg/L			06/01/17 11:07	1

Lab Sample ID: LCS 550-119042/34 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119042

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Alkalinity as CaCO3			250	261		mg/L		105	90 - 110		

Lab Sample ID: LCS 550-119042/6 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119042

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Alkalinity as CaCO3			250	256		mg/L		102	90 - 110		

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCSD 550-119042/20 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119042

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity as CaCO3			250	259		mg/L		104	90 - 110	1	20

Lab Sample ID: LCSD 550-119042/46 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119042

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity as CaCO3			250	260		mg/L		104	90 - 110	0	20

Lab Sample ID: 550-83527-I-1 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119042

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Alkalinity as CaCO3	83			84.0		mg/L				0.8	20
Bicarbonate Alkalinity as CaCO3	83			84.0		mg/L				0.8	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: 550-83572-5 DU — **Client Sample ID: FC-CCR-MW61-53017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119042

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Alkalinity as CaCO3	88			89.6		mg/L				1	20
Bicarbonate Alkalinity as CaCO3	73			71.5		mg/L				2	20
Carbonate Alkalinity as CaCO3	16			18.1		mg/L				15	20
Alkalinity, Phenolphthalein	7.8			9.06		mg/L				15	20
Hydroxide Alkalinity as CaCO3	ND			ND		mg/L				NC	20

Lab Sample ID: 550-83572-15 DU — **Client Sample ID: FC-CCR-MW69-52917**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119042

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Alkalinity as CaCO3	300			304		mg/L				0.8	20
Bicarbonate Alkalinity as CaCO3	300			304		mg/L				0.8	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 550-119120/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119120

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	ND		6.0		mg/L			06/05/17 11:55	1
Bicarbonate Alkalinity as CaCO3	ND		6.0		mg/L			06/05/17 11:55	1

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: MB 550-119120/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119120

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Carbonate Alkalinity as CaCO3	ND		6.0		mg/L			06/05/17 11:55	1
Alkalinity, Phenolphthalein	ND		6.0		mg/L			06/05/17 11:55	1
Hydroxide Alkalinity as CaCO3	ND		6.0		mg/L			06/05/17 11:55	1

Lab Sample ID: LCS 550-119120/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119120

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Alkalinity as CaCO3			250	246		mg/L		98	90 - 110		

Lab Sample ID: LCSD 550-119120/3 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119120

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	1	20

Lab Sample ID: 550-83572-3 DU — **Client Sample ID: FC-CCR-MW49A-53017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119121

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Alkalinity as CaCO3	850			900		mg/L				6	20
Bicarbonate Alkalinity as CaCO3	850			900		mg/L				6	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 550-119167/7 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119167

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	ND		6.0		mg/L			06/05/17 12:17	1
Bicarbonate Alkalinity as CaCO3	ND		6.0		mg/L			06/05/17 12:17	1
Carbonate Alkalinity as CaCO3	ND		6.0		mg/L			06/05/17 12:17	1
Alkalinity, Phenolphthalein	ND		6.0		mg/L			06/05/17 12:17	1
Hydroxide Alkalinity as CaCO3	ND		6.0		mg/L			06/05/17 12:17	1

Lab Sample ID: LCS 550-119167/6 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119167

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Alkalinity as CaCO3			250	256		mg/L		103	90 - 110		

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCSD 550-119167/20 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119167

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity as CaCO3			250	259		mg/L		104	90 - 110	1	20

Lab Sample ID: 550-83572-1 DU — **Client Sample ID: FC-CCR-MW7-53017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119167

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Alkalinity as CaCO3	500			502		mg/L				0.3	20
Bicarbonate Alkalinity as CaCO3	500			502		mg/L				0.3	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

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

Lab Sample ID: MB 550-118863/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 118863

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		20		mg/L			06/01/17 12:28	1

Lab Sample ID: LCS 550-118863/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 118863

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 550-118863/3 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 118863

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids			1000	982		mg/L		98	90 - 110	0	10

Lab Sample ID: 550-83369-A-2 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 118863

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	300			296		mg/L				1	10

Lab Sample ID: 550-83572-8 DU — **Client Sample ID: FC-CCR-FD01-52817**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 118863

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	4200	D2		4280	D2	mg/L				2	10

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

Lab Sample ID: MB 550-118988/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 118988

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		20		mg/L			06/02/17 12:15	1

Lab Sample ID: LCS 550-118988/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 118988

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids			1000	934		mg/L		93	90 - 110		

Lab Sample ID: LCSD 550-118988/3 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 118988

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids			1000	930		mg/L		93	90 - 110	0	10

Lab Sample ID: 550-83510-D-2 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 118988

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	1400			1330		mg/L				3	10

Lab Sample ID: 550-83572-11 DU — **Client Sample ID: FC-CCR-FD02-52917**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 118988

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	1400			1420		mg/L				1	10

Lab Sample ID: MB 550-119113/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119113

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		20		mg/L			06/05/17 11:56	1

Lab Sample ID: LCS 550-119113/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119113

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids			1000	962		mg/L		96	90 - 110		

Lab Sample ID: LCSD 550-119113/3 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119113

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids			1000	948		mg/L		95	90 - 110	1	10

QC Sample Results

Client: Arizona Public Service Company
Project/Site: APS - Four Corners CCR

TestAmerica Job ID: 550-83572-1
SDG: Cholla

Lab Sample ID: 550-83445-D-1 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119113

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	560			560		mg/L				0	10

Lab Sample ID: 550-83572-1 DU — **Client Sample ID: FC-CCR-MW7-53017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119113

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	10000	D2		10300	D2	mg/L				3	10

Lab Sample ID: MB 550-119228/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119228

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		20		mg/L			06/06/17 12:46	1

Lab Sample ID: LCS 550-119228/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119228

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids			1000	942		mg/L		94	90 - 110		

Lab Sample ID: LCSD 550-119228/3 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119228

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids			1000	936		mg/L		94	90 - 110	1	10

Lab Sample ID: 550-83783-A-2 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 119228

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	1000			962		mg/L				5	10

Method: SM 4500 H+ B - pH

Lab Sample ID: LCSSRM 550-118868/49 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 118868

Analyte			Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits		
pH			7.00	7.0		SU		100.0	98.5 - 101.5		

Method: SM 4500 H+ B - pH (Continued)

Lab Sample ID: LCSSRM 550-118868/61 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 118868

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 550-118868/73 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 118868

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.1		SU		101.4	98.5 - 101.5

Lab Sample ID: LCSSRM 550-118868/83 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 118868

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: 550-83572-1 DU — **Client Sample ID: FC-CCR-MW7-53017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 118868

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	18.3	H5	18.3	H5	Degrees C		0	

Lab Sample ID: 550-83572-4 DU — **Client Sample ID: FC-CCR-MW60-53017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 118868

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.6	H5	7.7	H5	SU		0.9	5
Temperature	15.2	H5	15.2	H5	Degrees C		0	

Lab Sample ID: 550-83572-14 DU — **Client Sample ID: FC-CCR-MW68-52917**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 118868

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.5	H5	7.1	H5	SU		5	5
Temperature	20.5	H5	20.4	H5	Degrees C		0.5	

QC Association Summary

Client: Arizona Public Service Company
Project/Site: APS - Four Corners CCR

TestAmerica Job ID: 550-83572-1
SDG: Cholla

HPLC/IC

Analysis Batch: 119812

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-83572-1	FC-CCR-MW7-53017	Total/NA	Water	300.0	
550-83572-1	FC-CCR-MW7-53017	Total/NA	Water	300.0	
550-83572-2	FC-CCR-MW8-53017	Total/NA	Water	300.0	
550-83572-2	FC-CCR-MW8-53017	Total/NA	Water	300.0	
550-83572-3	FC-CCR-MW49A-53017	Total/NA	Water	300.0	
550-83572-3	FC-CCR-MW49A-53017	Total/NA	Water	300.0	
550-83572-4	FC-CCR-MW60-53017	Total/NA	Water	300.0	
550-83572-4	FC-CCR-MW60-53017	Total/NA	Water	300.0	
550-83572-5	FC-CCR-MW61-53017	Total/NA	Water	300.0	
550-83572-5	FC-CCR-MW61-53017	Total/NA	Water	300.0	
550-83572-6	FC-CCR-MW62-52917	Total/NA	Water	300.0	
550-83572-6	FC-CCR-MW62-52917	Total/NA	Water	300.0	
550-83572-7	FC-CCR-MW63-52817	Total/NA	Water	300.0	
550-83572-7	FC-CCR-MW63-52817	Total/NA	Water	300.0	
550-83572-8	FC-CCR-FD01-52817	Total/NA	Water	300.0	
550-83572-8	FC-CCR-FD01-52817	Total/NA	Water	300.0	
550-83572-9	FC-CCR-MW64-52817	Total/NA	Water	300.0	
550-83572-9	FC-CCR-MW64-52817	Total/NA	Water	300.0	
550-83572-10	FC-CCR-MW65-52917	Total/NA	Water	300.0	
550-83572-10	FC-CCR-MW65-52917	Total/NA	Water	300.0	
550-83572-11	FC-CCR-FD02-52917	Total/NA	Water	300.0	
550-83572-11	FC-CCR-FD02-52917	Total/NA	Water	300.0	
550-83572-12	FC-CCR-MW66-52917	Total/NA	Water	300.0	
550-83572-12	FC-CCR-MW66-52917	Total/NA	Water	300.0	
550-83572-13	FC-CCR-MW67-52917	Total/NA	Water	300.0	
550-83572-13	FC-CCR-MW67-52917	Total/NA	Water	300.0	
550-83572-14	FC-CCR-MW68-52917	Total/NA	Water	300.0	
550-83572-14	FC-CCR-MW68-52917	Total/NA	Water	300.0	
550-83572-15	FC-CCR-MW69-52917	Total/NA	Water	300.0	
550-83572-15	FC-CCR-MW69-52917	Total/NA	Water	300.0	
550-83572-16	FC-CCR-MW70-52917	Total/NA	Water	300.0	
550-83572-16	FC-CCR-MW70-52917	Total/NA	Water	300.0	
MB 550-119812/2	Method Blank	Total/NA	Water	300.0	
LCS 550-119812/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-119812/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-83572-1MS	FC-CCR-MW7-53017	Total/NA	Water	300.0	
550-83572-1MS	FC-CCR-MW7-53017	Total/NA	Water	300.0	
550-83572-1MSD	FC-CCR-MW7-53017	Total/NA	Water	300.0	
550-83572-1MSD	FC-CCR-MW7-53017	Total/NA	Water	300.0	

Analysis Batch: 119813

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-83572-17	FC-CCR-MW71-52917	Total/NA	Water	300.0	
550-83572-17	FC-CCR-MW71-52917	Total/NA	Water	300.0	
550-83572-18	FC-CCR-MW72-52917	Total/NA	Water	300.0	
550-83572-18	FC-CCR-MW72-52917	Total/NA	Water	300.0	
550-83572-19	FC-CCR-MW73-52917	Total/NA	Water	300.0	
550-83572-19	FC-CCR-MW73-52917	Total/NA	Water	300.0	
550-83572-20	FC-CCR-MW74-52917	Total/NA	Water	300.0	
550-83572-20	FC-CCR-MW74-52917	Total/NA	Water	300.0	
550-83572-21	FC-CCR-MW75-53017	Total/NA	Water	300.0	

HPLC/IC (Continued)

Analysis Batch: 119813 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-83572-21	FC-CCR-MW75-53017	Total/NA	Water	300.0	
MB 550-119813/52	Method Blank	Total/NA	Water	300.0	
LCS 550-119813/55	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-119813/56	Lab Control Sample Dup	Total/NA	Water	300.0	
550-83572-17 MS	FC-CCR-MW71-52917	Total/NA	Water	300.0	
550-83572-17 MS	FC-CCR-MW71-52917	Total/NA	Water	300.0	
550-83572-17 MSD	FC-CCR-MW71-52917	Total/NA	Water	300.0	
550-83572-17 MSD	FC-CCR-MW71-52917	Total/NA	Water	300.0	

Analysis Batch: 120621

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-83572-3	FC-CCR-MW49A-53017	Total/NA	Water	300.0	
MB 550-120621/2	Method Blank	Total/NA	Water	300.0	
LCS 550-120621/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-120621/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-83896-A-5 MS ^50	Matrix Spike	Total/NA	Water	300.0	
550-83896-A-5 MSD ^50	Matrix Spike Duplicate	Total/NA	Water	300.0	

Metals

Prep Batch: 119101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-83572-1	FC-CCR-MW7-53017	Total/NA	Water	200.7	
550-83572-2	FC-CCR-MW8-53017	Total/NA	Water	200.7	
550-83572-3	FC-CCR-MW49A-53017	Total/NA	Water	200.7	
550-83572-4	FC-CCR-MW60-53017	Total/NA	Water	200.7	
550-83572-5	FC-CCR-MW61-53017	Total/NA	Water	200.7	
550-83572-6	FC-CCR-MW62-52917	Total/NA	Water	200.7	
550-83572-7	FC-CCR-MW63-52817	Total/NA	Water	200.7	
550-83572-8	FC-CCR-FD01-52817	Total/NA	Water	200.7	
550-83572-9	FC-CCR-MW64-52817	Total/NA	Water	200.7	
550-83572-10	FC-CCR-MW65-52917	Total/NA	Water	200.7	
550-83572-11	FC-CCR-FD02-52917	Total/NA	Water	200.7	
550-83572-12	FC-CCR-MW66-52917	Total/NA	Water	200.7	
550-83572-13	FC-CCR-MW67-52917	Total/NA	Water	200.7	
550-83572-14	FC-CCR-MW68-52917	Total/NA	Water	200.7	
550-83572-15	FC-CCR-MW69-52917	Total/NA	Water	200.7	
550-83572-16	FC-CCR-MW70-52917	Total/NA	Water	200.7	
550-83572-17	FC-CCR-MW71-52917	Total/NA	Water	200.7	
550-83572-18	FC-CCR-MW72-52917	Total/NA	Water	200.7	
550-83572-19	FC-CCR-MW73-52917	Total/NA	Water	200.7	
550-83572-20	FC-CCR-MW74-52917	Total/NA	Water	200.7	
MB 550-119101/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-119101/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-119101/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-83572-1MS	FC-CCR-MW7-53017	Total/NA	Water	200.7	
550-83572-1MSD	FC-CCR-MW7-53017	Total/NA	Water	200.7	

Metals (Continued)

Prep Batch: 119103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-83572-21	FC-CCR-MW75-53017	Total/NA	Water	200.7	
MB 550-119103/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-119103/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-119103/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-83522-A-1-B MS	Matrix Spike	Total/NA	Water	200.7	
550-83522-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	200.7	

Analysis Batch: 119316

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-83572-21	FC-CCR-MW75-53017	Total/NA	Water	200.7 Rev 4.4	119103
MB 550-119103/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	119103
LCS 550-119103/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	119103
LCSD 550-119103/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	119103
550-83522-A-1-B MS	Matrix Spike	Total/NA	Water	200.7 Rev 4.4	119103
550-83522-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	200.7 Rev 4.4	119103

Analysis Batch: 119317

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-83572-1	FC-CCR-MW7-53017	Total/NA	Water	200.7 Rev 4.4	119101
550-83572-2	FC-CCR-MW8-53017	Total/NA	Water	200.7 Rev 4.4	119101
550-83572-3	FC-CCR-MW49A-53017	Total/NA	Water	200.7 Rev 4.4	119101
550-83572-4	FC-CCR-MW60-53017	Total/NA	Water	200.7 Rev 4.4	119101
550-83572-5	FC-CCR-MW61-53017	Total/NA	Water	200.7 Rev 4.4	119101
550-83572-6	FC-CCR-MW62-52917	Total/NA	Water	200.7 Rev 4.4	119101
550-83572-7	FC-CCR-MW63-52817	Total/NA	Water	200.7 Rev 4.4	119101
550-83572-8	FC-CCR-FD01-52817	Total/NA	Water	200.7 Rev 4.4	119101
550-83572-9	FC-CCR-MW64-52817	Total/NA	Water	200.7 Rev 4.4	119101
550-83572-10	FC-CCR-MW65-52917	Total/NA	Water	200.7 Rev 4.4	119101
550-83572-11	FC-CCR-FD02-52917	Total/NA	Water	200.7 Rev 4.4	119101
550-83572-12	FC-CCR-MW66-52917	Total/NA	Water	200.7 Rev 4.4	119101
550-83572-13	FC-CCR-MW67-52917	Total/NA	Water	200.7 Rev 4.4	119101
550-83572-14	FC-CCR-MW68-52917	Total/NA	Water	200.7 Rev 4.4	119101
550-83572-15	FC-CCR-MW69-52917	Total/NA	Water	200.7 Rev 4.4	119101
550-83572-16	FC-CCR-MW70-52917	Total/NA	Water	200.7 Rev 4.4	119101
550-83572-17	FC-CCR-MW71-52917	Total/NA	Water	200.7 Rev 4.4	119101
550-83572-18	FC-CCR-MW72-52917	Total/NA	Water	200.7 Rev 4.4	119101
550-83572-19	FC-CCR-MW73-52917	Total/NA	Water	200.7 Rev 4.4	119101
550-83572-20	FC-CCR-MW74-52917	Total/NA	Water	200.7 Rev 4.4	119101
MB 550-119101/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	119101
LCS 550-119101/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	119101
LCSD 550-119101/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	119101
550-83572-1MS	FC-CCR-MW7-53017	Total/NA	Water	200.7 Rev 4.4	119101
550-83572-1MSD	FC-CCR-MW7-53017	Total/NA	Water	200.7 Rev 4.4	119101

Prep Batch: 119329

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 550-119329/1-A	Method Blank	Total/NA	Water	245.1	
LCS 550-119329/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 550-119329/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	
550-83572-1MS	FC-CCR-MW7-53017	Total/NA	Water	245.1	
550-83572-1MSD	FC-CCR-MW7-53017	Total/NA	Water	245.1	

QC Association Summary

Client: Arizona Public Service Company
Project/Site: APS - Four Corners CCR

TestAmerica Job ID: 550-83572-1
SDG: Cholla

Analysis Batch: 119437

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-83572-2	FC-CCR-MW8-53017	Total/NA	Water	200.7 Rev 4.4	119101
550-83572-3	FC-CCR-MW49A-53017	Total/NA	Water	200.7 Rev 4.4	119101
550-83572-12	FC-CCR-MW66-52917	Total/NA	Water	200.7 Rev 4.4	119101
550-83572-13	FC-CCR-MW67-52917	Total/NA	Water	200.7 Rev 4.4	119101
550-83572-14	FC-CCR-MW68-52917	Total/NA	Water	200.7 Rev 4.4	119101
550-83572-15	FC-CCR-MW69-52917	Total/NA	Water	200.7 Rev 4.4	119101
550-83572-16	FC-CCR-MW70-52917	Total/NA	Water	200.7 Rev 4.4	119101
550-83572-17	FC-CCR-MW71-52917	Total/NA	Water	200.7 Rev 4.4	119101
550-83572-18	FC-CCR-MW72-52917	Total/NA	Water	200.7 Rev 4.4	119101
550-83572-20	FC-CCR-MW74-52917	Total/NA	Water	200.7 Rev 4.4	119101

Analysis Batch: 119484

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 550-119329/1-A	Method Blank	Total/NA	Water	245.1	119329
LCS 550-119329/2-A	Lab Control Sample	Total/NA	Water	245.1	119329
LCSD 550-119329/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	119329
550-83572-1MS	FC-CCR-MW7-53017	Total/NA	Water	245.1	119329
550-83572-1MSD	FC-CCR-MW7-53017	Total/NA	Water	245.1	119329

General Chemistry

Analysis Batch: 118863

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-83572-6	FC-CCR-MW62-52917	Total/NA	Water	SM 2540C	
550-83572-7	FC-CCR-MW63-52817	Total/NA	Water	SM 2540C	
550-83572-8	FC-CCR-FD01-52817	Total/NA	Water	SM 2540C	
550-83572-9	FC-CCR-MW64-52817	Total/NA	Water	SM 2540C	
550-83572-10	FC-CCR-MW65-52917	Total/NA	Water	SM 2540C	
MB 550-118863/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-118863/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-118863/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-83369-A-2 DU	Duplicate	Total/NA	Water	SM 2540C	
550-83572-8 DU	FC-CCR-FD01-52817	Total/NA	Water	SM 2540C	

Analysis Batch: 118868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-83572-1	FC-CCR-MW7-53017	Total/NA	Water	SM 4500 H+ B	
550-83572-2	FC-CCR-MW8-53017	Total/NA	Water	SM 4500 H+ B	
550-83572-3	FC-CCR-MW49A-53017	Total/NA	Water	SM 4500 H+ B	
550-83572-4	FC-CCR-MW60-53017	Total/NA	Water	SM 4500 H+ B	
550-83572-5	FC-CCR-MW61-53017	Total/NA	Water	SM 4500 H+ B	
550-83572-6	FC-CCR-MW62-52917	Total/NA	Water	SM 4500 H+ B	
550-83572-7	FC-CCR-MW63-52817	Total/NA	Water	SM 4500 H+ B	
550-83572-8	FC-CCR-FD01-52817	Total/NA	Water	SM 4500 H+ B	
550-83572-9	FC-CCR-MW64-52817	Total/NA	Water	SM 4500 H+ B	
550-83572-10	FC-CCR-MW65-52917	Total/NA	Water	SM 4500 H+ B	
550-83572-11	FC-CCR-FD02-52917	Total/NA	Water	SM 4500 H+ B	
550-83572-12	FC-CCR-MW66-52917	Total/NA	Water	SM 4500 H+ B	
550-83572-13	FC-CCR-MW67-52917	Total/NA	Water	SM 4500 H+ B	
550-83572-14	FC-CCR-MW68-52917	Total/NA	Water	SM 4500 H+ B	
550-83572-15	FC-CCR-MW69-52917	Total/NA	Water	SM 4500 H+ B	
550-83572-16	FC-CCR-MW70-52917	Total/NA	Water	SM 4500 H+ B	
550-83572-17	FC-CCR-MW71-52917	Total/NA	Water	SM 4500 H+ B	

General Chemistry (Continued)

Analysis Batch: 118868 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-83572-18	FC-CCR-MW72-52917	Total/NA	Water	SM 4500 H+ B	
550-83572-19	FC-CCR-MW73-52917	Total/NA	Water	SM 4500 H+ B	
550-83572-20	FC-CCR-MW74-52917	Total/NA	Water	SM 4500 H+ B	
550-83572-21	FC-CCR-MW75-53017	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-118868/49	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-118868/61	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-118868/73	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-118868/83	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
550-83572-1 DU	FC-CCR-MW7-53017	Total/NA	Water	SM 4500 H+ B	
550-83572-4 DU	FC-CCR-MW60-53017	Total/NA	Water	SM 4500 H+ B	
550-83572-14 DU	FC-CCR-MW68-52917	Total/NA	Water	SM 4500 H+ B	

Analysis Batch: 118988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-83572-1	FC-CCR-MW7-53017	Total/NA	Water	SM 2540C	
550-83572-11	FC-CCR-FD02-52917	Total/NA	Water	SM 2540C	
550-83572-12	FC-CCR-MW66-52917	Total/NA	Water	SM 2540C	
550-83572-13	FC-CCR-MW67-52917	Total/NA	Water	SM 2540C	
550-83572-14	FC-CCR-MW68-52917	Total/NA	Water	SM 2540C	
550-83572-15	FC-CCR-MW69-52917	Total/NA	Water	SM 2540C	
550-83572-16	FC-CCR-MW70-52917	Total/NA	Water	SM 2540C	
550-83572-17	FC-CCR-MW71-52917	Total/NA	Water	SM 2540C	
550-83572-18	FC-CCR-MW72-52917	Total/NA	Water	SM 2540C	
550-83572-19	FC-CCR-MW73-52917	Total/NA	Water	SM 2540C	
550-83572-20	FC-CCR-MW74-52917	Total/NA	Water	SM 2540C	
MB 550-118988/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-118988/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-118988/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-83510-D-2 DU	Duplicate	Total/NA	Water	SM 2540C	
550-83572-11 DU	FC-CCR-FD02-52917	Total/NA	Water	SM 2540C	

Analysis Batch: 119042

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-83572-2	FC-CCR-MW8-53017	Total/NA	Water	SM 2320B	
550-83572-4	FC-CCR-MW60-53017	Total/NA	Water	SM 2320B	
550-83572-5	FC-CCR-MW61-53017	Total/NA	Water	SM 2320B	
550-83572-6	FC-CCR-MW62-52917	Total/NA	Water	SM 2320B	
550-83572-7	FC-CCR-MW63-52817	Total/NA	Water	SM 2320B	
550-83572-8	FC-CCR-FD01-52817	Total/NA	Water	SM 2320B	
550-83572-9	FC-CCR-MW64-52817	Total/NA	Water	SM 2320B	
550-83572-10	FC-CCR-MW65-52917	Total/NA	Water	SM 2320B	
550-83572-11	FC-CCR-FD02-52917	Total/NA	Water	SM 2320B	
550-83572-12	FC-CCR-MW66-52917	Total/NA	Water	SM 2320B	
550-83572-13	FC-CCR-MW67-52917	Total/NA	Water	SM 2320B	
550-83572-14	FC-CCR-MW68-52917	Total/NA	Water	SM 2320B	
550-83572-15	FC-CCR-MW69-52917	Total/NA	Water	SM 2320B	
550-83572-16	FC-CCR-MW70-52917	Total/NA	Water	SM 2320B	
550-83572-17	FC-CCR-MW71-52917	Total/NA	Water	SM 2320B	
550-83572-18	FC-CCR-MW72-52917	Total/NA	Water	SM 2320B	
550-83572-19	FC-CCR-MW73-52917	Total/NA	Water	SM 2320B	
550-83572-20	FC-CCR-MW74-52917	Total/NA	Water	SM 2320B	

General Chemistry (Continued)

Analysis Batch: 119042 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-83572-21	FC-CCR-MW75-53017	Total/NA	Water	SM 2320B	
MB 550-119042/35	Method Blank	Total/NA	Water	SM 2320B	
MB 550-119042/7	Method Blank	Total/NA	Water	SM 2320B	
LCS 550-119042/34	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 550-119042/6	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 550-119042/20	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
LCSD 550-119042/46	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
550-83527-I-1 DU	Duplicate	Total/NA	Water	SM 2320B	
550-83572-5 DU	FC-CCR-MW61-53017	Total/NA	Water	SM 2320B	
550-83572-15 DU	FC-CCR-MW69-52917	Total/NA	Water	SM 2320B	

Analysis Batch: 119113

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-83572-2	FC-CCR-MW8-53017	Total/NA	Water	SM 2540C	
550-83572-4	FC-CCR-MW60-53017	Total/NA	Water	SM 2540C	
550-83572-5	FC-CCR-MW61-53017	Total/NA	Water	SM 2540C	
550-83572-21	FC-CCR-MW75-53017	Total/NA	Water	SM 2540C	
MB 550-119113/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-119113/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-119113/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-83445-D-1 DU	Duplicate	Total/NA	Water	SM 2540C	
550-83572-1 DU	FC-CCR-MW7-53017	Total/NA	Water	SM 2540C	

Analysis Batch: 119120

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 550-119120/1	Method Blank	Total/NA	Water	SM 2320B	
LCS 550-119120/2	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 550-119120/3	Lab Control Sample Dup	Total/NA	Water	SM 2320B	

Analysis Batch: 119121

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-83572-3	FC-CCR-MW49A-53017	Total/NA	Water	SM 2320B	
550-83572-3 DU	FC-CCR-MW49A-53017	Total/NA	Water	SM 2320B	

Analysis Batch: 119167

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-83572-1	FC-CCR-MW7-53017	Total/NA	Water	SM 2320B	
MB 550-119167/7	Method Blank	Total/NA	Water	SM 2320B	
LCS 550-119167/6	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 550-119167/20	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
550-83572-1 DU	FC-CCR-MW7-53017	Total/NA	Water	SM 2320B	

Analysis Batch: 119228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-83572-3	FC-CCR-MW49A-53017	Total/NA	Water	SM 2540C	
MB 550-119228/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-119228/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-119228/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-83783-A-2 DU	Duplicate	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: APS - Four Corners CCR

TestAmerica Job ID: 550-83572-1
SDG: Cholla

Client Sample ID: FC-CCR-MW7-53017 — Lab Sample ID: 550-83572-1

Date Collected: 05/30/17 11:09 — **Matrix: Water**
Date Received: 05/31/17 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	119812	06/12/17 17:15	JAE	TAL PHX
Total/NA	Analysis	300.0		200	119812	06/12/17 17:34	JAE	TAL PHX
Total/NA	Prep	200.7			119101	06/05/17 11:18	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	119317	06/06/17 19:11	CJM	TAL PHX
Total/NA	Analysis	SM 2320B		1	119167	06/05/17 14:11	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	118988		YET	TAL PHX
					(Start)	06/02/17 12:15		
					(End)	06/05/17 09:40		
Total/NA	Analysis	SM 4500 H+ B		1	118868	06/01/17 12:47	NEL	TAL PHX

Client Sample ID: FC-CCR-MW8-53017 — Lab Sample ID: 550-83572-2

Date Collected: 05/30/17 10:14 — **Matrix: Water**
Date Received: 05/31/17 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	119812	06/12/17 19:06	JAE	TAL PHX
Total/NA	Analysis	300.0		200	119812	06/12/17 19:24	JAE	TAL PHX
Total/NA	Prep	200.7			119101	06/05/17 11:18	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	119317	06/06/17 19:17	CJM	TAL PHX
Total/NA	Prep	200.7			119101	06/05/17 11:18	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	119437	06/07/17 15:37	CJM	TAL PHX
Total/NA	Analysis	SM 2320B		1	119042	06/01/17 12:20	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	119113	06/05/17 11:56	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	118868	06/01/17 12:47	NEL	TAL PHX

Client Sample ID: FC-CCR-MW49A-53017 — Lab Sample ID: 550-83572-3

Date Collected: 05/30/17 12:01 — **Matrix: Water**
Date Received: 05/31/17 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	119812	06/12/17 20:19	JAE	TAL PHX
Total/NA	Analysis	300.0		500	119812	06/12/17 20:38	JAE	TAL PHX
Total/NA	Analysis	300.0		200	120621	06/22/17 03:04	JAE	TAL PHX
Total/NA	Prep	200.7			119101	06/05/17 11:18	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	119317	06/06/17 19:23	CJM	TAL PHX
Total/NA	Prep	200.7			119101	06/05/17 11:18	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	119437	06/07/17 15:48	CJM	TAL PHX
Total/NA	Analysis	SM 2320B		1	119121	06/05/17 11:55	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	119228		YET	TAL PHX
					(Start)	06/06/17 12:46		
					(End)	06/07/17 09:10		
Total/NA	Analysis	SM 4500 H+ B		1	118868	06/01/17 12:47	NEL	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: APS - Four Corners CCR

TestAmerica Job ID: 550-83572-1
SDG: Cholla

Client Sample ID: FC-CCR-MW60-53017 — Lab Sample ID: 550-83572-4

Date Collected: 05/30/17 09:35 — **Matrix: Water**
Date Received: 05/31/17 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	119812	06/12/17 20:56	JAE	TAL PHX
Total/NA	Analysis	300.0		100	119812	06/12/17 21:15	JAE	TAL PHX
Total/NA	Prep	200.7			119101	06/05/17 11:18	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	119317	06/06/17 19:29	CJM	TAL PHX
Total/NA	Analysis	SM 2320B		1	119042	06/01/17 12:40	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	119113	06/05/17 11:56	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	118868	06/01/17 12:47	NEL	TAL PHX

Client Sample ID: FC-CCR-MW61-53017 — Lab Sample ID: 550-83572-5

Date Collected: 05/30/17 08:24 — **Matrix: Water**
Date Received: 05/31/17 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	119812	06/12/17 21:33	JAE	TAL PHX
Total/NA	Analysis	300.0		50	119812	06/12/17 21:51	JAE	TAL PHX
Total/NA	Prep	200.7			119101	06/05/17 11:18	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	119317	06/06/17 19:35	CJM	TAL PHX
Total/NA	Analysis	SM 2320B		1	119042	06/01/17 13:04	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	119113	06/05/17 11:56	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	118868	06/01/17 12:47	NEL	TAL PHX

Client Sample ID: FC-CCR-MW62-52917 — Lab Sample ID: 550-83572-6

Date Collected: 05/29/17 09:08 — **Matrix: Water**
Date Received: 05/31/17 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	119812	06/12/17 22:10	JAE	TAL PHX
Total/NA	Analysis	300.0		50	119812	06/12/17 22:28	JAE	TAL PHX
Total/NA	Prep	200.7			119101	06/05/17 11:18	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	119317	06/06/17 19:41	CJM	TAL PHX
Total/NA	Analysis	SM 2320B		1	119042	06/01/17 13:24	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	118863		YET	TAL PHX
					(Start)	06/01/17 12:28		
					(End)	06/02/17 10:25		
Total/NA	Analysis	SM 4500 H+ B		1	118868	06/01/17 12:47	NEL	TAL PHX

Client Sample ID: FC-CCR-MW63-52817 — Lab Sample ID: 550-83572-7

Date Collected: 05/28/17 14:55 — **Matrix: Water**
Date Received: 05/31/17 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	119812	06/12/17 22:47	JAE	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: APS - Four Corners CCR

TestAmerica Job ID: 550-83572-1
SDG: Cholla

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		50	119812	06/12/17 23:05	JAE	TAL PHX
Total/NA	Prep	200.7			119101	06/05/17 11:18	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	119317	06/06/17 19:47	CJM	TAL PHX
Total/NA	Analysis	SM 2320B		1	119042	06/01/17 13:33	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	118863		YET	TAL PHX
					(Start)	06/01/17 12:28		
					(End)	06/02/17 10:25		
Total/NA	Analysis	SM 4500 H+ B		1	118868	06/01/17 12:47	NEL	TAL PHX

Client Sample ID: FC-CCR-FD01-52817 — Lab Sample ID: 550-83572-8

Date Collected: 05/28/17 14:55 — **Matrix: Water**
Date Received: 05/31/17 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	119812	06/13/17 00:00	JAE	TAL PHX
Total/NA	Analysis	300.0		50	119812	06/13/17 00:19	JAE	TAL PHX
Total/NA	Prep	200.7			119101	06/05/17 11:18	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	119317	06/06/17 19:53	CJM	TAL PHX
Total/NA	Analysis	SM 2320B		1	119042	06/01/17 13:44	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	118863		YET	TAL PHX
					(Start)	06/01/17 12:28		
					(End)	06/02/17 10:25		
Total/NA	Analysis	SM 4500 H+ B		1	118868	06/01/17 12:47	NEL	TAL PHX

Client Sample ID: FC-CCR-MW64-52817 — Lab Sample ID: 550-83572-9

Date Collected: 05/28/17 14:09 — **Matrix: Water**
Date Received: 05/31/17 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	119812	06/13/17 00:37	JAE	TAL PHX
Total/NA	Analysis	300.0		50	119812	06/13/17 00:55	JAE	TAL PHX
Total/NA	Prep	200.7			119101	06/05/17 11:18	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	119317	06/06/17 19:59	CJM	TAL PHX
Total/NA	Analysis	SM 2320B		1	119042	06/01/17 13:53	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	118863		YET	TAL PHX
					(Start)	06/01/17 12:28		
					(End)	06/02/17 10:25		
Total/NA	Analysis	SM 4500 H+ B		1	118868	06/01/17 12:47	NEL	TAL PHX

Client Sample ID: FC-CCR-MW65-52917 — Lab Sample ID: 550-83572-10

Date Collected: 05/29/17 08:19 — **Matrix: Water**
Date Received: 05/31/17 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	119812	06/13/17 01:14	JAE	TAL PHX
Total/NA	Analysis	300.0		20	119812	06/13/17 01:32	JAE	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: APS - Four Corners CCR

TestAmerica Job ID: 550-83572-1
SDG: Cholla

Client Sample ID: FC-CCR-MW65-52917 — Lab Sample ID: 550-83572-10

Date Collected: 05/29/17 08:19 — **Matrix: Water**
Date Received: 05/31/17 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			119101	06/05/17 11:18	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	119317	06/06/17 20:02	CJM	TAL PHX
Total/NA	Analysis	SM 2320B		1	119042	06/01/17 14:02	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	118863		YET	TAL PHX
					(Start)	06/01/17 12:28		
					(End)	06/02/17 10:25		
Total/NA	Analysis	SM 4500 H+ B		1	118868	06/01/17 12:47	NEL	TAL PHX

Client Sample ID: FC-CCR-FD02-52917 — Lab Sample ID: 550-83572-11

Date Collected: 05/29/17 08:19 — **Matrix: Water**
Date Received: 05/31/17 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	119812	06/13/17 01:51	JAE	TAL PHX
Total/NA	Analysis	300.0		20	119812	06/13/17 02:09	JAE	TAL PHX
Total/NA	Prep	200.7			119101	06/05/17 11:18	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	119317	06/06/17 20:10	CJM	TAL PHX
Total/NA	Analysis	SM 2320B		1	119042	06/01/17 14:12	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	118988		YET	TAL PHX
					(Start)	06/02/17 12:15		
					(End)	06/05/17 09:40		
Total/NA	Analysis	SM 4500 H+ B		1	118868	06/01/17 12:47	NEL	TAL PHX

Client Sample ID: FC-CCR-MW66-52917 — Lab Sample ID: 550-83572-12

Date Collected: 05/29/17 09:38 — **Matrix: Water**
Date Received: 05/31/17 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	119812	06/13/17 02:27	JAE	TAL PHX
Total/NA	Analysis	300.0		200	119812	06/13/17 02:46	JAE	TAL PHX
Total/NA	Prep	200.7			119101	06/05/17 11:18	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	119317	06/06/17 20:13	CJM	TAL PHX
Total/NA	Prep	200.7			119101	06/05/17 11:18	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	119437	06/07/17 15:51	CJM	TAL PHX
Total/NA	Analysis	SM 2320B		1	119042	06/01/17 14:20	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	118988		YET	TAL PHX
					(Start)	06/02/17 12:15		
					(End)	06/05/17 09:40		
Total/NA	Analysis	SM 4500 H+ B		1	118868	06/01/17 12:47	NEL	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: APS - Four Corners CCR

TestAmerica Job ID: 550-83572-1
SDG: Cholla

Client Sample ID: FC-CCR-MW67-52917 — Lab Sample ID: 550-83572-13

Date Collected: 05/29/17 12:19 — **Matrix: Water**
Date Received: 05/31/17 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	119812	06/13/17 03:41	JAE	TAL PHX
Total/NA	Analysis	300.0		200	119812	06/13/17 03:59	JAE	TAL PHX
Total/NA	Prep	200.7			119101	06/05/17 11:18	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	119317	06/06/17 20:19	CJM	TAL PHX
Total/NA	Prep	200.7			119101	06/05/17 11:18	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	119437	06/07/17 15:56	CJM	TAL PHX
Total/NA	Analysis	SM 2320B		1	119042	06/01/17 14:29	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	118988		YET	TAL PHX
					(Start)	06/02/17 12:15		
					(End)	06/05/17 09:40		
Total/NA	Analysis	SM 4500 H+ B		1	118868	06/01/17 12:47	NEL	TAL PHX

Client Sample ID: FC-CCR-MW68-52917 — Lab Sample ID: 550-83572-14

Date Collected: 05/29/17 12:53 — **Matrix: Water**
Date Received: 05/31/17 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	119812	06/13/17 04:18	JAE	TAL PHX
Total/NA	Analysis	300.0		200	119812	06/13/17 04:36	JAE	TAL PHX
Total/NA	Prep	200.7			119101	06/05/17 11:18	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	119317	06/06/17 20:25	CJM	TAL PHX
Total/NA	Prep	200.7			119101	06/05/17 11:18	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	119437	06/07/17 16:02	CJM	TAL PHX
Total/NA	Analysis	SM 2320B		1	119042	06/01/17 14:41	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	118988		YET	TAL PHX
					(Start)	06/02/17 12:15		
					(End)	06/05/17 09:40		
Total/NA	Analysis	SM 4500 H+ B		1	118868	06/01/17 12:47	NEL	TAL PHX

Client Sample ID: FC-CCR-MW69-52917 — Lab Sample ID: 550-83572-15

Date Collected: 05/29/17 13:23 — **Matrix: Water**
Date Received: 05/31/17 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	119812	06/13/17 04:55	JAE	TAL PHX
Total/NA	Analysis	300.0		200	119812	06/13/17 05:13	JAE	TAL PHX
Total/NA	Prep	200.7			119101	06/05/17 11:18	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	119317	06/06/17 20:31	CJM	TAL PHX
Total/NA	Prep	200.7			119101	06/05/17 11:18	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	119437	06/07/17 16:08	CJM	TAL PHX
Total/NA	Analysis	SM 2320B		1	119042	06/01/17 15:05	DGS	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: APS - Four Corners CCR

TestAmerica Job ID: 550-83572-1
SDG: Cholla

Client Sample ID: FC-CCR-MW69-52917 — Lab Sample ID: 550-83572-15

Date Collected: 05/29/17 13:23 — **Matrix: Water**
Date Received: 05/31/17 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	118988		YET	TAL PHX
					(Start)	06/02/17 12:15		
					(End)	06/05/17 09:40		
Total/NA	Analysis	SM 4500 H+ B		1	118868	06/01/17 12:47	NEL	TAL PHX

Client Sample ID: FC-CCR-MW70-52917 — Lab Sample ID: 550-83572-16

Date Collected: 05/29/17 10:15 — **Matrix: Water**
Date Received: 05/31/17 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	119812	06/13/17 05:31	JAE	TAL PHX
Total/NA	Analysis	300.0		200	119812	06/13/17 05:50	JAE	TAL PHX
Total/NA	Prep	200.7			119101	06/05/17 11:18	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	119317	06/06/17 20:37	CJM	TAL PHX
Total/NA	Prep	200.7			119101	06/05/17 11:18	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	119437	06/07/17 16:14	CJM	TAL PHX
Total/NA	Analysis	SM 2320B		1	119042	06/01/17 15:24	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	118988		YET	TAL PHX
					(Start)	06/02/17 12:15		
					(End)	06/05/17 09:40		
Total/NA	Analysis	SM 4500 H+ B		1	118868	06/01/17 12:47	NEL	TAL PHX

Client Sample ID: FC-CCR-MW71-52917 — Lab Sample ID: 550-83572-17

Date Collected: 05/29/17 11:24 — **Matrix: Water**
Date Received: 05/31/17 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	119813	06/13/17 07:59	JAE	TAL PHX
Total/NA	Analysis	300.0		200	119813	06/13/17 08:17	JAE	TAL PHX
Total/NA	Prep	200.7			119101	06/05/17 11:18	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	119317	06/06/17 20:43	CJM	TAL PHX
Total/NA	Prep	200.7			119101	06/05/17 11:18	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	119437	06/07/17 16:17	CJM	TAL PHX
Total/NA	Analysis	SM 2320B		1	119042	06/01/17 15:35	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	118988		YET	TAL PHX
					(Start)	06/02/17 12:15		
					(End)	06/05/17 09:40		
Total/NA	Analysis	SM 4500 H+ B		1	118868	06/01/17 12:47	NEL	TAL PHX

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: APS - Four Corners CCR

TestAmerica Job ID: 550-83572-1
SDG: Cholla

Client Sample ID: FC-CCR-MW72-52917 — Lab Sample ID: 550-83572-18

Date Collected: 05/29/17 10:56 — **Matrix: Water**
Date Received: 05/31/17 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	119813	06/13/17 09:49	JAE	TAL PHX
Total/NA	Analysis	300.0		200	119813	06/13/17 10:08	JAE	TAL PHX
Total/NA	Prep	200.7			119101	06/05/17 11:18	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	119317	06/06/17 20:49	CJM	TAL PHX
Total/NA	Prep	200.7			119101	06/05/17 11:18	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	119437	06/07/17 16:19	CJM	TAL PHX
Total/NA	Analysis	SM 2320B		1	119042	06/01/17 15:45	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	118988		YET	TAL PHX
					(Start)	06/02/17 12:15		
					(End)	06/05/17 09:40		
Total/NA	Analysis	SM 4500 H+ B		1	118868	06/01/17 12:47	NEL	TAL PHX

Client Sample ID: FC-CCR-MW73-52917 — Lab Sample ID: 550-83572-19

Date Collected: 05/29/17 14:03 — **Matrix: Water**
Date Received: 05/31/17 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	119813	06/13/17 10:26	JAE	TAL PHX
Total/NA	Analysis	300.0		100	119813	06/13/17 10:44	JAE	TAL PHX
Total/NA	Prep	200.7			119101	06/05/17 11:18	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	119317	06/06/17 20:55	CJM	TAL PHX
Total/NA	Analysis	SM 2320B		1	119042	06/01/17 15:56	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	118988		YET	TAL PHX
					(Start)	06/02/17 12:15		
					(End)	06/05/17 09:40		
Total/NA	Analysis	SM 4500 H+ B		1	118868	06/01/17 12:47	NEL	TAL PHX

Client Sample ID: FC-CCR-MW74-52917 — Lab Sample ID: 550-83572-20

Date Collected: 05/29/17 14:38 — **Matrix: Water**
Date Received: 05/31/17 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	119813	06/13/17 11:40	JAE	TAL PHX
Total/NA	Analysis	300.0		100	119813	06/13/17 11:58	JAE	TAL PHX
Total/NA	Prep	200.7			119101	06/05/17 11:18	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	119317	06/06/17 21:01	CJM	TAL PHX
Total/NA	Prep	200.7			119101	06/05/17 11:18	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		10	119437	06/07/17 16:25	CJM	TAL PHX
Total/NA	Analysis	SM 2320B		1	119042	06/01/17 16:06	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	118988		YET	TAL PHX
					(Start)	06/02/17 12:15		
					(End)	06/05/17 09:40		

Lab Chronicle

Client: Arizona Public Service Company
Project/Site: APS - Four Corners CCR

TestAmerica Job ID: 550-83572-1
SDG: Cholla

Client Sample ID: FC-CCR-MW74-52917 — Lab Sample ID: 550-83572-20

Date Collected: 05/29/17 14:38 — **Matrix: Water**
Date Received: 05/31/17 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 H+ B		1	118868	06/01/17 12:47	NEL	TAL PHX

Client Sample ID: FC-CCR-MW75-53017 — Lab Sample ID: 550-83572-21

Date Collected: 05/30/17 08:52 — **Matrix: Water**
Date Received: 05/31/17 13:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	119813	06/13/17 12:16	JAE	TAL PHX
Total/NA	Analysis	300.0		200	119813	06/13/17 12:35	JAE	TAL PHX
Total/NA	Prep	200.7			119103	06/05/17 11:26	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	119316	06/06/17 17:35	CJM	TAL PHX
Total/NA	Analysis	SM 2320B		1	119042	06/01/17 16:14	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	119113	06/05/17 11:56	YET	TAL PHX
Total/NA	Analysis	SM 4500 H+ B		1	118868	06/01/17 12:47	NEL	TAL PHX

Laboratory References:

TAL PHX = 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: APS - Four Corners CCR

TestAmerica Job ID: 550-83572-1
SDG: Cholla

Laboratory: TestAmerica Phoenix

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Arizona	State Program	9	AZ0728	06-09-18

Method Summary

Client: Arizona Public Service Company
Project/Site: APS - Four Corners CCR

TestAmerica Job ID: 550-83572-1
SDG: Cholla

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PHX
200.7 Rev 4.4	Metals (ICP)	40CFR136A	TAL PHX
245.1	Mercury (CVAA)	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

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

estAmerica Phoenix
325 E Cotton Center Blvd
uite 189
hoenix, AZ 85040
hone 602.437.3340 fax 602.454.9303

Chain of Custody Record

83572

6/30/2017

Regulatory Program: CCR

TestAmerica Laboratories, Inc.

Client Contact	Doug Lavarnway	Doug Lavarnway	5/31/2017
PS Four Corners	928-587-0319	Lab Contact:	Carrier:
nd of County Road 6675	**Analysis Turnaround Time**		
uitland, New Mexico 87416			
28) 587-0319 Phone	TAT if different from Below _____		
xx) xxx-xxxx FAX			
roject Name: CCR			
te: Cholla			
O #			

COC No: 1 of 6 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 200.7 Rev 4.4 (B, Ca, Na, K, Mg)	EPA 300.0 (Cl, F, SO4)	SM 2540C (TDS)	SM 4500-HB (pH)	SM 2320B (HCO3)	Sample Specific Notes:
1	FC-CCR-MW7-53017	5/30/2017	1109	G	W	2	N	x	x	x	x	x	x	
2	FC-CCR-MW8-53017	5/30/2017	1014	G	W	2	N	x	x	x	x	x	x	
3	FC-CCR-MW49A-53017	5/30/2017	1201	G	W	2	N	x	x	x	x	x	x	
4	FC-CCR-MW60-53017	5/30/2017	935	G	W	2	N	x	x	x	x	x	x	
5	FC-CCR-MW61-53017	5/30/2017	824	G	W	2	N	x	x	x	x	x	x	
6	FC-CCR-MW62-52917	5/29/2017	908	G	W	2	N	x	x	x	x	x	x	
7	FC-CCR-MW63-52817	5/28/2017	1455	G	W	2	N	x	x	x	x	x	x	
8	FC-CCR-FD01-52817	5/28/2017	1455	G	W	2	N	x	x	x	x	x	x	
9	FC-CCR-MW64-52817	5/28/2017	1409	G	W	2	N	x	x	x	x	x	x	
10	FC-CCR-MW65-52917	5/29/2017	819	G	W	2	N	x	x	x	x	x	x	
11	FC-CCR-FD02-52917	5/29/2017	819	G	W	2	N	x	x	x	x	x	x	

550-83572 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)

Special Instructions/QC Requirements & Comments:

1.1°C, 1.1°C, 1.5°C, 0.2°C, 0.4°C PC

Custody Seals Intact: Custody Seal No.: Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ Therm ID No.:_____

Relinquished by: Doug Lavarnway	Company: APS	Date/Time: 5/31/2017	Received by: D Rogers	Company: Red J	Date/Time: 5/31/17 9:00a
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company: TA	Date/Time: 5-31-17 1310

Form No. CA-C-WI-002, Rev. 4.2, dated 04/02/2013

TestAmerica Phoenix
625 E Cotton Center Blvd
Suite 189
Phoenix, AZ 85040
Phone 602.437.3340 fax 602.454.9303

Chain of Custody Record

83572

6/30/2017

Regulatory Program: CCR

TestAmerica Laboratories, Inc.

Client Contact	Doug Lavarnway	Doug Lavarnway	5/31/2017
APS Four Corners	928-587-0319	Lab Contact:	Carrier:
End of County Road 6675	Analysis Turnaround Time		
Truitland, New Mexico 87416			
(928) 587-0319 Phone	TAT if different from Below _____		
(xxx) xxx-xxxx FAX			
Project Name: CCR			
Site: Cholla			
PO #			

COC No: 7 of 6 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 200.7 Rev 4.4 (B, Ca, Na, K, Mg)	EPA 300.0 (Cl, F, SO4)	SM 2540C (TDS)	SM 4500-HB (pH)	SM 2320B (HCO3)	Sample Specific Notes:
12	FC-CCR-MW66-52917	5/29/2017	938	G	W	2	N	x	x	x	x	x	x	
13	FC-CCR-MW67-52917	5/29/2017	1219	G	W	2	N	x	x	x	x	x	x	
14	FC-CCR-MW68-52917	5/29/2017	1253	G	W	2	N	x	x	x	x	x	x	
15	FC-CCR-MW69-52917	5/29/2017	1323	G	W	2	N	x	x	x	x	x	x	
16	FC-CCR-MW70-52917	5/29/2017	1015	G	W	2	N	x	x	x	x	x	x	
17	FC-CCR-MW71-52917	5/29/2017	1124	G	W	2	N	x	x	x	x	x	x	
18	FC-CCR-MW72-52917	5/29/2017	1056	G	W	2	N	x	x	x	x	x	x	
19	FC-CCR-MW73-52917	5/29/2017	1403	G	W	2	N	x	x	x	x	x	x	
20	FC-CCR-MW74-52917	5/29/2017	1438	G	W	2	N	x	x	x	x	x	x	
21	FC-CCR-MW75-53017	5/30/2017	852	G	W	2	N	x	x	x	x	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.

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: | Custody Seal No.: | Cooler Temp. (°C): Obs'd:_____ Corr'd:_____ Therm ID No.:_____

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Doug Lavarnway	APS	5/31	D Rogers	Red J	5/31/17 9:00a
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company: TA	Date/Time: 5-31-17 1310

Login Sample Receipt Checklist

Client: Arizona Public Service Company

Job Number: 550-83572-1
SDG Number: Cholla

Login Number: 83572
List Number: 1
Creator: Vilaboy, Monica

List Source: TestAmerica Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= 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 <6mm (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.