TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

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

TestAmerica Job ID: 550-89579-1
Client Project/Site: APS - Four Corners CCR

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

Attn: Doug Lavarnway

Authorized for release by:
10/5/2017 3:34:44 PM

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

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at:
www.testamericainc.com

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

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

Table of Contents

Cover Page 1
Table of Contents 2
Definitions/Glossary 3
Case Narrative 4
Sample Summary 5
Detection Summary 6
Client Sample Results 13
QC Sample Results 25
QC Association Summary 32
Lab Chronicle 37
Certification Summary 46
Method Summary 47
Chain of Custody 48
Receipt Checklists 50

Definitions/Glossary

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

TestAmerica Job ID: 550-89579-1

Qualifiers

HPLC/IC

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

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.
B7	Target analyte detected in method blank at or above method reporting limit. Concentration found in the sample was 10 times above the concentration found in the blank.
D2	Sample required dilution due to high concentration of analyte.
B1	Target analyte detected in method blank at or above the method reporting limit.

General Chemistry

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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
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: 550-89579-1

Laboratory: TestAmerica Phoenix

Narrative

Job Narrative
550-89579-1

Comments
No additional comments.

Receipt
The samples were received on 9/12/2017 2:44 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 1.2º C, 1.8º C, 1.8º C and 2.0º C.

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

Metals
Method(s) 200.7 Rev 4.4: The method blank for preparation batch 550-127178 and analytical batch 550-128372 contained Sodium (Na) above the reporting limit (RL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method(s) 200.7 Rev 4.4: The following sample was diluted to bring the concentration of target analytes within the calibration range: FC-CCR-MW49A-91017 (550-89579-2). Elevated reporting limits (RLs) are provided.

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

General Chemistry
Method(s) SM 2540C: The following samples produced a TDS result greater than the estimated conductivity value: 550-89579-10, -11, -12, -14, -15, -17. This anomaly was suspected to be caused by the sample matrix.

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

Sample Summary

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

TestAmerica Job ID: 550-89579-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-89579-1	FC-CCR-MW7-91017	Water	09/10/17 16:06	09/12/17 14:44
550-89579-2	FC-CCR-MW49A-91017	Water	09/10/17 17:05	09/12/17 14:44
550-89579-3	FC-CCR-MW60-91017	Water	09/10/17 14:58	09/12/17 14:44
550-89579-4	FC-CCR-MW61-91017	Water	09/10/17 13:46	09/12/17 14:44
550-89579-5	FC-CCR-MW62-9917	Water	09/09/17 15:36	09/12/17 14:44
550-89579-6	FC-CCR-MW63-9917	Water	09/09/17 16:14	09/12/17 14:44
550-89579-7	FC-CCR-MW64-9917	Water	09/09/17 16:39	09/12/17 14:44
550-89579-8	FC-CCR-MW65-9917	Water	09/09/17 14:45	09/12/17 14:44
550-89579-9	FC-CCR-FD01-9917	Water	09/09/17 14:45	09/12/17 14:44
550-89579-10	FC-CCR-MW66-9917	Water	09/09/17 17:13	09/12/17 14:44
550-89579-11	FC-CCR-MW67-91017	Water	09/10/17 09:53	09/12/17 14:44
550-89579-12	FC-CCR-MW68-91017	Water	09/10/17 10:27	09/12/17 14:44
550-89579-13	FC-CCR-MW69-91017	Water	09/10/17 09:05	09/12/17 14:44
550-89579-14	FC-CCR-FD02-91017	Water	09/10/17 09:05	09/12/17 14:44
550-89579-15	FC-CCR-MW70-9917	Water	09/09/17 17:46	09/12/17 14:44
550-89579-16	FC-CCR-MW71-91117	Water	09/11/17 08:56	09/12/17 14:44
550-89579-17	FC-CCR-MW72-91017	Water	09/10/17 17:54	09/12/17 14:44
550-89579-18	FC-CCR-MW73-91017	Water	09/10/17 11:37	09/12/17 14:44
550-89579-19	FC-CCR-MW74-91017	Water	09/10/17 12:10	09/12/17 14:44
550-89579-20	FC-CCR-MW75-91017	Water	09/10/17 14:24	09/12/17 14:44

Detection Summary

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

TestAmerica Job ID: 550-89579-1

Client Sample ID: FC-CCR-MW7-91017 — Lab Sample ID: 550-89579-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	350	D1 D2	20	mg/L	10		300.0	Total/NA
Sulfate	6600	D1 D2	400	mg/L	200		300.0	Total/NA
Boron	8.0		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	430	M3	2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	610	M3	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	1600	B7 M3	0.50	mg/L	1		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	9900	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	9.9	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW49A-91017 — Lab Sample ID: 550-89579-2

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	490	D2	20	mg/L	10		300.0	Total/NA
Sulfate	16000	D2	1000	mg/L	500		300.0	Total/NA
Boron	3.4		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	880		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	62		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium - DL	4900	B7 D2	5.0	mg/L	10		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	720		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	720		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	22000	D2	200	mg/L	1		SM 2540C	Total/NA
pH	7.4	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	11.2	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW60-91017 — Lab Sample ID: 550-89579-3

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	450	D2	200	mg/L	100		300.0	Total/NA
Fluoride	7.4	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	5200	D2	200	mg/L	100		300.0	Total/NA
Boron	67		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	520		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	B7	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	7900	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.6	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	11.7	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW61-91017 — Lab Sample ID: 550-89579-4

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	310	D2	100	mg/L	50		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: 550-89579-1

Client Sample ID: FC-CCR-MW61-91017 (Continued) — Lab Sample ID: 550-89579-4

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.2		0.40	mg/L	1		300.0	Total/NA
Sulfate	3600	D2	100	mg/L	50		300.0	Total/NA
Boron	41		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	120		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	B7	0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	90		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	17		6.0	mg/L	1		SM 2320B	Total/NA
Alkalinity, Phenolphthalein	8.3		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	5600	D2	100	mg/L	1		SM 2540C	Total/NA
pH	8.7	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	11.8	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW62-9917 — Lab Sample ID: 550-89579-5

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	120	D2	100	mg/L	50		300.0	Total/NA
Fluoride	1.5		0.40	mg/L	1		300.0	Total/NA
Sulfate	3300	D2	100	mg/L	50		300.0	Total/NA
Boron	2.3		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	340		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	10		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	640	B7	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	6.8	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	11.7	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW63-9917 — Lab Sample ID: 550-89579-6

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	97		2.0	mg/L	1		300.0	Total/NA
Fluoride	2.0		0.40	mg/L	1		300.0	Total/NA
Sulfate	2700	D2	100	mg/L	50		300.0	Total/NA
Boron	2.0		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	540		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	6.9		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	360	B7	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	7.0	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	11.9	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW64-9917 — Lab Sample ID: 550-89579-7

This Detection Summary does not include radiochemical test results.

Client Sample ID: FC-CCR-MW64-9917 (Continued) — Lab Sample ID: 550-89579-7

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	53		2.0	mg/L	1		300.0	Total/NA
Fluoride	1.5		0.40	mg/L	1		300.0	Total/NA
Sulfate	350	D2	100	mg/L	50		300.0	Total/NA
Boron	0.67		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	90		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	35		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	B7	0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	230		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	230		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	810		20	mg/L	1		SM 2540C	Total/NA
pH	7.8	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	12.4	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW65-9917 — Lab Sample ID: 550-89579-8

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	53		2.0	mg/L	1		300.0	Total/NA
Fluoride	2.0		0.40	mg/L	1		300.0	Total/NA
Sulfate	450	D2	40	mg/L	20		300.0	Total/NA
Boron	0.80		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	110		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	59		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	3.4		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	140	B7	0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	320		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	320		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	1000		20	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	11.9	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-FD01-9917 — Lab Sample ID: 550-89579-9

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	54		2.0	mg/L	1		300.0	Total/NA
Fluoride	2.0		0.40	mg/L	1		300.0	Total/NA
Sulfate	450	D2	40	mg/L	20		300.0	Total/NA
Boron	0.81		0.050	mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	110		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	60		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	3.5		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	140	B7	0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	320		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	320		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	1000		20	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	12.4	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW66-9917 — Lab Sample ID: 550-89579-10

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: 550-89579-1

Client Sample ID: FC-CCR-MW66-9917 (Continued) — Lab Sample ID: 550-89579-10

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1800	D2	400	mg/L	200		300.0	Total/NA
Fluoride	26	D1	2.0	mg/L	5		300.0	Total/NA
Sulfate	12000	D2	400	mg/L	200		300.0	Total/NA
Boron	140	D2	0.25	mg/L	5		200.7 Rev 4.4	Total/NA
Calcium	480		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	2600	D2	10	mg/L	5		200.7 Rev 4.4	Total/NA
Potassium	43		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	640	B7	0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	260		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	260		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	19000	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	12.3	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW67-91017 — Lab Sample ID: 550-89579-11

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2100	D2	400	mg/L	200		300.0	Total/NA
Fluoride	24	D1	2.0	mg/L	5		300.0	Total/NA
Sulfate	13000	D2	400	mg/L	200		300.0	Total/NA
Boron	150	D2	0.25	mg/L	5		200.7 Rev 4.4	Total/NA
Calcium	500		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	3000	D2	10	mg/L	5		200.7 Rev 4.4	Total/NA
Potassium	41		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	720	B7	0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	340		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	340		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	21000	D2	200	mg/L	1		SM 2540C	Total/NA
pH	7.3	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	13.3	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW68-91017 — Lab Sample ID: 550-89579-12

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1500	D2	400	mg/L	200		300.0	Total/NA
Fluoride	11	D1	2.0	mg/L	5		300.0	Total/NA
Sulfate	10000	D2	400	mg/L	200		300.0	Total/NA
Boron	130	D2	0.25	mg/L	5		200.7 Rev 4.4	Total/NA
Calcium	480		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	2300	D2	10	mg/L	5		200.7 Rev 4.4	Total/NA
Potassium	18		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	610	B7	0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	530		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	530		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	18000	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.0	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	13.1	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW69-91017 — Lab Sample ID: 550-89579-13

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: 550-89579-1

Client Sample ID: FC-CCR-MW69-91017 (Continued) — Lab Sample ID: 550-89579-13

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1600	D2	400	mg/L	200		300.0	Total/NA
Fluoride	20	D1	2.0	mg/L	5		300.0	Total/NA
Sulfate	13000	D2	400	mg/L	200		300.0	Total/NA
Boron	150	D2	0.25	mg/L	5		200.7 Rev 4.4	Total/NA
Calcium	490		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	2700	D2	10	mg/L	5		200.7 Rev 4.4	Total/NA
Potassium	46		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	720	B7	0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	340		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	340		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	18000	D2	1000	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	13.4	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-FD02-91017 — Lab Sample ID: 550-89579-14

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1600	D2	400	mg/L	200		300.0	Total/NA
Fluoride	20	D1	2.0	mg/L	5		300.0	Total/NA
Sulfate	13000	D2	400	mg/L	200		300.0	Total/NA
Boron	150	D2	0.25	mg/L	5		200.7 Rev 4.4	Total/NA
Calcium	480		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	2800	D2	10	mg/L	5		200.7 Rev 4.4	Total/NA
Potassium	45		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	720	B7	0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	340		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	340		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	20000	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.5	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	13.7	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW70-9917 — Lab Sample ID: 550-89579-15

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	1100	D2	400	mg/L	200		300.0	Total/NA
Fluoride	2.5	D1	0.80	mg/L	2		300.0	Total/NA
Sulfate	6500	D2	400	mg/L	200		300.0	Total/NA
Boron	99	D2	0.10	mg/L	2		200.7 Rev 4.4	Total/NA
Calcium	520		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	1200	D2	4.0	mg/L	2		200.7 Rev 4.4	Total/NA
Potassium	17		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	820	B7	0.50	mg/L	1		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	12000	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.0	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	10.0	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW71-91117 — Lab Sample ID: 550-89579-16

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: 550-89579-1

Client Sample ID: FC-CCR-MW71-91117 (Continued) — Lab Sample ID: 550-89579-16

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	570	D2	400	mg/L	200		300.0	Total/NA
Sulfate	9900	D2	400	mg/L	200		300.0	Total/NA
Boron	0.55		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	1800	D2	4.0	mg/L	2		200.7 Rev 4.4	Total/NA
Potassium	26		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	1100	B7	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	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	11.0	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW72-91017 — Lab Sample ID: 550-89579-17

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	0.21		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	10	mg/L	5		200.7 Rev 4.4	Total/NA
Potassium	28		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	730	B7	0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	610		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	610		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	17000	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.0	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	11.5	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW73-91017 — Lab Sample ID: 550-89579-18

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	470	D2	400	mg/L	200		300.0	Total/NA
Sulfate	6000	D2	400	mg/L	200		300.0	Total/NA
Boron	1.9		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	680		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	30		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	1300		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	730		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	730		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	9900	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.0	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	11.8	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW74-91017 — Lab Sample ID: 550-89579-19

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	470	D2	200	mg/L	100		300.0	Total/NA
Fluoride	2.0	D1	0.80	mg/L	2		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: FC-CCR-MW74-91017 (Continued) — Lab Sample ID: 550-89579-19

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	11000	D2	400	mg/L	200		300.0	Total/NA
Boron	1.9		0.10	mg/L	2		200.7 Rev 4.4	Total/NA
Calcium	420		2.0	mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	1100	D2	10	mg/L	5		200.7 Rev 4.4	Total/NA
Potassium	23		0.50	mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	3200	D2	2.5	mg/L	5		200.7 Rev 4.4	Total/NA
Alkalinity as CaCO3	410		6.0	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	410		6.0	mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	15000	D2	100	mg/L	1		SM 2540C	Total/NA
pH	7.7	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	11.6	H5	0.1	Degrees C	1		SM 4500 H+ B	Total/NA

Client Sample ID: FC-CCR-MW75-91017 — Lab Sample ID: 550-89579-20

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Chloride	300	D2	10	mg/L	5		300.0	Total/NA
Sulfate	4500	D2	400	mg/L	200		300.0	Total/NA
Boron	24		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	230		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	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	6500	D2	100	mg/L	1		SM 2540C	Total/NA
pH	8.4	H5	1.7	SU	1		SM 4500 H+ B	Total/NA
Temperature	11.7	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: 550-89579-1

Client Sample ID: FC-CCR-MW7-91017

Lab Sample ID: 550-89579-1
Date Collected: 09/10/17 16:06
Matrix: Water
Date Received: 09/12/17 14:44

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	350	D1 D2	20	mg/L			09/27/17 19:20	10
Fluoride	ND	D1 D5	0.80	mg/L			09/23/17 15:24	2
Sulfate	6600	D1 D2	400	mg/L			09/23/17 16:19	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	8.0		0.050	mg/L		09/13/17 06:44	09/27/17 23:42	1
Calcium	430	M3	2.0	mg/L		09/13/17 06:44	09/26/17 04:30	1
Magnesium	610	M3	2.0	mg/L		09/13/17 06:44	09/26/17 04:30	1
Potassium	35		0.50	mg/L		09/13/17 06:44	09/26/17 04:30	1
Sodium	1600	B7 M3	0.50	mg/L		09/13/17 06:44	09/26/17 04:30	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	510		6.0	mg/L			09/13/17 15:39	1
Bicarbonate Alkalinity as CaCO3	510		6.0	mg/L			09/13/17 15:39	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 15:39	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			09/13/17 15:39	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 15:39	1
Total Dissolved Solids	9900	D2	100	mg/L			09/13/17 09:08	1
pH	7.5	H5	1.7	SU			09/14/17 16:33	1
Temperature	9.9	H5	0.1	Degrees C			09/14/17 16:33	1

Client Sample ID: FC-CCR-MW49A-91017

Lab Sample ID: 550-89579-2
Date Collected: 09/10/17 17:05
Matrix: Water
Date Received: 09/12/17 14:44

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	490	D2	20	mg/L			09/23/17 17:14	10
Fluoride	ND	D1 D5	4.0	mg/L			09/23/17 17:14	10
Sulfate	16000	D2	1000	mg/L			09/23/17 17:33	500

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	3.4		0.050	mg/L		09/13/17 06:44	09/27/17 23:48	1
Calcium	410		2.0	mg/L		09/13/17 06:44	09/26/17 04:39	1
Magnesium	880		2.0	mg/L		09/13/17 06:44	09/26/17 04:39	1
Potassium	62		0.50	mg/L		09/13/17 06:44	09/26/17 04:39	1

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	4900	B7 D2	5.0	mg/L		09/13/17 06:44	09/26/17 04:36	10

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	720		6.0	mg/L			09/13/17 16:01	1
Bicarbonate Alkalinity as CaCO3	720		6.0	mg/L			09/13/17 16:01	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 16:01	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			09/13/17 16:01	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 16:01	1

Client Sample ID: FC-CCR-MW49A-91017

Lab Sample ID: 550-89579-2
Date Collected: 09/10/17 17:05
Matrix: Water
Date Received: 09/12/17 14:44

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	22000	D2	200	mg/L			09/13/17 09:08	1
pH	7.4	H5	1.7	SU			09/14/17 16:33	1
Temperature	11.2	H5	0.1	Degrees C			09/14/17 16:33	1

Client Sample ID: FC-CCR-MW60-91017

Lab Sample ID: 550-89579-3
Date Collected: 09/10/17 14:58
Matrix: Water
Date Received: 09/12/17 14:44

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	450	D2	200	mg/L			09/23/17 18:10	100
Fluoride	7.4	D1	0.80	mg/L			09/23/17 17:51	2
Sulfate	5200	D2	200	mg/L			09/23/17 18:10	100

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	67		0.050	mg/L		09/13/17 06:44	09/27/17 23:54	1
Calcium	470		2.0	mg/L		09/13/17 06:44	09/26/17 04:44	1
Magnesium	520		2.0	mg/L		09/13/17 06:44	09/26/17 04:44	1
Potassium	26		0.50	mg/L		09/13/17 06:44	09/26/17 04:44	1
Sodium	1100	B7	0.50	mg/L		09/13/17 06:44	09/26/17 04:44	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	130		6.0	mg/L			09/13/17 16:10	1
Bicarbonate Alkalinity as CaCO3	130		6.0	mg/L			09/13/17 16:10	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 16:10	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			09/13/17 16:10	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 16:10	1
Total Dissolved Solids	7900	D2	100	mg/L			09/13/17 09:08	1
pH	7.6	H5	1.7	SU			09/14/17 16:33	1
Temperature	11.7	H5	0.1	Degrees C			09/14/17 16:33	1

Client Sample ID: FC-CCR-MW61-91017

Lab Sample ID: 550-89579-4
Date Collected: 09/10/17 13:46
Matrix: Water
Date Received: 09/12/17 14:44

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	310	D2	100	mg/L			09/23/17 19:23	50
Fluoride	1.2		0.40	mg/L			09/23/17 19:05	1
Sulfate	3600	D2	100	mg/L			09/23/17 19:23	50

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	41		0.050	mg/L		09/13/17 06:44	09/27/17 23:59	1
Calcium	510		2.0	mg/L		09/13/17 06:44	09/26/17 04:50	1
Magnesium	120		2.0	mg/L		09/13/17 06:44	09/26/17 04:50	1
Potassium	20		0.50	mg/L		09/13/17 06:44	09/26/17 04:50	1
Sodium	1000	B7	0.50	mg/L		09/13/17 06:44	09/26/17 04:50	1

Client Sample Results

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

TestAmerica Job ID: 550-89579-1

Client Sample ID: FC-CCR-MW61-91017

Lab Sample ID: 550-89579-4
Date Collected: 09/10/17 13:46
Matrix: Water
Date Received: 09/12/17 14:44

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	90		6.0	mg/L			09/13/17 16:18	1
Bicarbonate Alkalinity as CaCO3	73		6.0	mg/L			09/13/17 16:18	1
Carbonate Alkalinity as CaCO3	17		6.0	mg/L			09/13/17 16:18	1
Alkalinity, Phenolphthalein	8.3		6.0	mg/L			09/13/17 16:18	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 16:18	1
Total Dissolved Solids	5600	D2	100	mg/L			09/13/17 09:08	1
pH	8.7	H5	1.7	SU			09/14/17 16:33	1
Temperature	11.8	H5	0.1	Degrees C			09/14/17 16:33	1

Client Sample ID: FC-CCR-MW62-9917

Lab Sample ID: 550-89579-5
Date Collected: 09/09/17 15:36
Matrix: Water
Date Received: 09/12/17 14:44

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	120	D2	100	mg/L			09/23/17 20:00	50
Fluoride	1.5		0.40	mg/L			09/23/17 19:42	1
Sulfate	3300	D2	100	mg/L			09/23/17 20:00	50

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2.3		0.050	mg/L		09/13/17 06:44	09/28/17 00:05	1
Calcium	570		2.0	mg/L		09/13/17 06:44	09/26/17 04:56	1
Magnesium	340		2.0	mg/L		09/13/17 06:44	09/26/17 04:56	1
Potassium	10		0.50	mg/L		09/13/17 06:44	09/26/17 04:56	1
Sodium	640	B7	0.50	mg/L		09/13/17 06:44	09/26/17 04:56	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	800		6.0	mg/L			09/13/17 16:30	1
Bicarbonate Alkalinity as CaCO3	800		6.0	mg/L			09/13/17 16:30	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 16:30	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			09/13/17 16:30	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 16:30	1
Total Dissolved Solids	5500	D2	100	mg/L			09/13/17 09:08	1
pH	6.8	H5	1.7	SU			09/14/17 16:33	1
Temperature	11.7	H5	0.1	Degrees C			09/14/17 16:33	1

Client Sample ID: FC-CCR-MW63-9917

Lab Sample ID: 550-89579-6
Date Collected: 09/09/17 16:14
Matrix: Water
Date Received: 09/12/17 14:44

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	97		2.0	mg/L			09/23/17 20:18	1
Fluoride	2.0		0.40	mg/L			09/23/17 20:18	1
Sulfate	2700	D2	100	mg/L			09/23/17 20:37	50

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2.0		0.050	mg/L		09/13/17 06:44	09/28/17 00:11	1

Client Sample Results

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

TestAmerica Job ID: 550-89579-1

Client Sample ID: FC-CCR-MW63-9917

Lab Sample ID: 550-89579-6
Date Collected: 09/09/17 16:14
Matrix: Water
Date Received: 09/12/17 14:44

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	540		2.0	mg/L		09/13/17 06:44	09/26/17 05:02	1
Magnesium	270		2.0	mg/L		09/13/17 06:44	09/26/17 05:02	1
Potassium	6.9		0.50	mg/L		09/13/17 06:44	09/26/17 05:02	1
Sodium	360	B7	0.50	mg/L		09/13/17 06:44	09/26/17 05:02	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	490		6.0	mg/L			09/13/17 16:40	1
Bicarbonate Alkalinity as CaCO3	490		6.0	mg/L			09/13/17 16:40	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 16:40	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			09/13/17 16:40	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 16:40	1
Total Dissolved Solids	4300	D2	40	mg/L			09/13/17 09:08	1
pH	7.0	H5	1.7	SU			09/14/17 16:33	1
Temperature	11.9	H5	0.1	Degrees C			09/14/17 16:33	1

Client Sample ID: FC-CCR-MW64-9917

Lab Sample ID: 550-89579-7
Date Collected: 09/09/17 16:39
Matrix: Water
Date Received: 09/12/17 14:44

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	53		2.0	mg/L			09/23/17 20:55	1
Fluoride	1.5		0.40	mg/L			09/23/17 20:55	1
Sulfate	350	D2	100	mg/L			09/23/17 21:14	50

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.67		0.050	mg/L		09/13/17 06:44	09/28/17 00:17	1
Calcium	90		2.0	mg/L		09/13/17 06:44	09/26/17 05:08	1
Magnesium	35		2.0	mg/L		09/13/17 06:44	09/26/17 05:08	1
Potassium	5.8		0.50	mg/L		09/13/17 06:44	09/26/17 05:08	1
Sodium	120	B7	0.50	mg/L		09/13/17 06:44	09/26/17 05:08	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	230		6.0	mg/L			09/13/17 16:49	1
Bicarbonate Alkalinity as CaCO3	230		6.0	mg/L			09/13/17 16:49	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 16:49	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			09/13/17 16:49	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 16:49	1
Total Dissolved Solids	810		20	mg/L			09/13/17 09:08	1
pH	7.8	H5	1.7	SU			09/14/17 16:33	1
Temperature	12.4	H5	0.1	Degrees C			09/14/17 16:33	1

Client Sample Results

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

TestAmerica Job ID: 550-89579-1

Client Sample ID: FC-CCR-MW65-9917

Lab Sample ID: 550-89579-8
Date Collected: 09/09/17 14:45
Matrix: Water
Date Received: 09/12/17 14:44

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	53		2.0	mg/L			09/23/17 21:32	1
Fluoride	2.0		0.40	mg/L			09/23/17 21:32	1
Sulfate	450	D2	40	mg/L			09/23/17 21:50	20

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.80		0.050	mg/L		09/13/17 06:44	09/28/17 00:20	1
Calcium	110		2.0	mg/L		09/13/17 06:44	09/26/17 05:19	1
Magnesium	59		2.0	mg/L		09/13/17 06:44	09/26/17 05:19	1
Potassium	3.4		0.50	mg/L		09/13/17 06:44	09/26/17 05:19	1
Sodium	140	B7	0.50	mg/L		09/13/17 06:44	09/26/17 05:19	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	320		6.0	mg/L			09/13/17 16:58	1
Bicarbonate Alkalinity as CaCO3	320		6.0	mg/L			09/13/17 16:58	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 16:58	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			09/13/17 16:58	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 16:58	1
Total Dissolved Solids	1000		20	mg/L			09/13/17 09:08	1
pH	7.5	H5	1.7	SU			09/14/17 16:33	1
Temperature	11.9	H5	0.1	Degrees C			09/14/17 16:33	1

Client Sample ID: FC-CCR-FD01-9917

Lab Sample ID: 550-89579-9
Date Collected: 09/09/17 14:45
Matrix: Water
Date Received: 09/12/17 14:44

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	54		2.0	mg/L			09/23/17 22:46	1
Fluoride	2.0		0.40	mg/L			09/23/17 22:46	1
Sulfate	450	D2	40	mg/L			09/23/17 23:04	20

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.81		0.050	mg/L		09/13/17 06:44	09/28/17 00:23	1
Calcium	110		2.0	mg/L		09/13/17 06:44	09/26/17 05:22	1
Magnesium	60		2.0	mg/L		09/13/17 06:44	09/26/17 05:22	1
Potassium	3.5		0.50	mg/L		09/13/17 06:44	09/26/17 05:22	1
Sodium	140	B7	0.50	mg/L		09/13/17 06:44	09/26/17 05:22	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	320		6.0	mg/L			09/13/17 17:08	1
Bicarbonate Alkalinity as CaCO3	320		6.0	mg/L			09/13/17 17:08	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 17:08	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			09/13/17 17:08	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 17:08	1
Total Dissolved Solids	1000		20	mg/L			09/13/17 09:08	1
pH	7.5	H5	1.7	SU			09/14/17 16:33	1
Temperature	12.4	H5	0.1	Degrees C			09/14/17 16:33	1

Client Sample Results

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

TestAmerica Job ID: 550-89579-1

Client Sample ID: FC-CCR-MW66-9917

Lab Sample ID: 550-89579-10
Date Collected: 09/09/17 17:13
Matrix: Water
Date Received: 09/12/17 14:44

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1800	D2	400	mg/L			09/23/17 23:41	200
Fluoride	26	D1	2.0	mg/L			09/23/17 23:22	5
Sulfate	12000	D2	400	mg/L			09/23/17 23:41	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	140	D2	0.25	mg/L		09/13/17 06:44	09/28/17 00:26	5
Calcium	480		2.0	mg/L		09/13/17 06:44	09/26/17 05:25	1
Magnesium	2600	D2	10	mg/L		09/13/17 06:44	09/28/17 00:26	5
Potassium	43		0.50	mg/L		09/13/17 06:44	09/26/17 05:25	1
Sodium	640	B7	0.50	mg/L		09/13/17 06:44	09/26/17 05:25	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	260		6.0	mg/L			09/13/17 17:16	1
Bicarbonate Alkalinity as CaCO3	260		6.0	mg/L			09/13/17 17:16	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 17:16	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			09/13/17 17:16	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 17:16	1
Total Dissolved Solids	19000	D2	100	mg/L			09/13/17 09:08	1
pH	7.3	H5	1.7	SU			09/14/17 16:33	1
Temperature	12.3	H5	0.1	Degrees C			09/14/17 16:33	1

Client Sample ID: FC-CCR-MW67-91017

Lab Sample ID: 550-89579-11
Date Collected: 09/10/17 09:53
Matrix: Water
Date Received: 09/12/17 14:44

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2100	D2	400	mg/L			09/24/17 00:18	200
Fluoride	24	D1	2.0	mg/L			09/23/17 23:59	5
Sulfate	13000	D2	400	mg/L			09/24/17 00:18	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	150	D2	0.25	mg/L		09/13/17 06:44	09/28/17 00:40	5
Calcium	500		2.0	mg/L		09/13/17 06:44	09/26/17 05:31	1
Magnesium	3000	D2	10	mg/L		09/13/17 06:44	09/28/17 00:40	5
Potassium	41		0.50	mg/L		09/13/17 06:44	09/26/17 05:31	1
Sodium	720	B7	0.50	mg/L		09/13/17 06:44	09/26/17 05:31	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	340		6.0	mg/L			09/13/17 17:42	1
Bicarbonate Alkalinity as CaCO3	340		6.0	mg/L			09/13/17 17:42	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 17:42	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			09/13/17 17:42	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 17:42	1
Total Dissolved Solids	21000	D2	200	mg/L			09/13/17 09:08	1
pH	7.3	H5	1.7	SU			09/14/17 16:33	1

Client Sample Results

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

TestAmerica Job ID: 550-89579-1

Client Sample ID: FC-CCR-MW67-91017

Lab Sample ID: 550-89579-11
Date Collected: 09/10/17 09:53
Matrix: Water
Date Received: 09/12/17 14:44

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Temperature	13.3	H5	0.1	Degrees C			09/14/17 16:33	1

Client Sample ID: FC-CCR-MW68-91017

Lab Sample ID: 550-89579-12
Date Collected: 09/10/17 10:27
Matrix: Water
Date Received: 09/12/17 14:44

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1500	D2	400	mg/L			09/24/17 00:55	200
Fluoride	11	D1	2.0	mg/L			09/24/17 00:36	5
Sulfate	10000	D2	400	mg/L			09/24/17 00:55	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	130	D2	0.25	mg/L		09/13/17 06:44	09/28/17 00:45	5
Calcium	480		2.0	mg/L		09/13/17 06:44	09/26/17 05:37	1
Magnesium	2300	D2	10	mg/L		09/13/17 06:44	09/28/17 00:45	5
Potassium	18		0.50	mg/L		09/13/17 06:44	09/26/17 05:37	1
Sodium	610	B7	0.50	mg/L		09/13/17 06:44	09/26/17 05:37	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	530		6.0	mg/L			09/13/17 18:01	1
Bicarbonate Alkalinity as CaCO3	530		6.0	mg/L			09/13/17 18:01	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 18:01	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			09/13/17 18:01	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 18:01	1
Total Dissolved Solids	18000	D2	100	mg/L			09/13/17 09:08	1
pH	7.0	H5	1.7	SU			09/14/17 16:33	1
Temperature	13.1	H5	0.1	Degrees C			09/14/17 16:33	1

Client Sample ID: FC-CCR-MW69-91017

Lab Sample ID: 550-89579-13
Date Collected: 09/10/17 09:05
Matrix: Water
Date Received: 09/12/17 14:44

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1600	D2	400	mg/L			09/24/17 01:31	200
Fluoride	20	D1	2.0	mg/L			09/24/17 01:13	5
Sulfate	13000	D2	400	mg/L			09/24/17 01:31	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	150	D2	0.25	mg/L		09/13/17 06:44	09/28/17 00:51	5
Calcium	490		2.0	mg/L		09/13/17 06:44	09/26/17 05:43	1
Magnesium	2700	D2	10	mg/L		09/13/17 06:44	09/28/17 00:51	5
Potassium	46		0.50	mg/L		09/13/17 06:44	09/26/17 05:43	1
Sodium	720	B7	0.50	mg/L		09/13/17 06:44	09/26/17 05:43	1

Client Sample Results

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

TestAmerica Job ID: 550-89579-1

Client Sample ID: FC-CCR-MW69-91017

Lab Sample ID: 550-89579-13
Date Collected: 09/10/17 09:05
Matrix: Water
Date Received: 09/12/17 14:44

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	340		6.0	mg/L			09/13/17 18:10	1
Bicarbonate Alkalinity as CaCO3	340		6.0	mg/L			09/13/17 18:10	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 18:10	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			09/13/17 18:10	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 18:10	1
Total Dissolved Solids	18000	D2	1000	mg/L			09/14/17 11:00	1
pH	7.5	H5	1.7	SU			09/14/17 16:33	1
Temperature	13.4	H5	0.1	Degrees C			09/14/17 16:33	1

Client Sample ID: FC-CCR-FD02-91017

Lab Sample ID: 550-89579-14
Date Collected: 09/10/17 09:05
Matrix: Water
Date Received: 09/12/17 14:44

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1600	D2	400	mg/L			09/24/17 02:45	200
Fluoride	20	D1	2.0	mg/L			09/24/17 02:27	5
Sulfate	13000	D2	400	mg/L			09/24/17 02:45	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	150	D2	0.25	mg/L		09/13/17 06:44	09/28/17 00:57	5
Calcium	480		2.0	mg/L		09/13/17 06:44	09/26/17 05:49	1
Magnesium	2800	D2	10	mg/L		09/13/17 06:44	09/28/17 00:57	5
Potassium	45		0.50	mg/L		09/13/17 06:44	09/26/17 05:49	1
Sodium	720	B7	0.50	mg/L		09/13/17 06:44	09/26/17 05:49	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	340		6.0	mg/L			09/13/17 18:19	1
Bicarbonate Alkalinity as CaCO3	340		6.0	mg/L			09/13/17 18:19	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 18:19	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			09/13/17 18:19	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 18:19	1
Total Dissolved Solids	20000	D2	100	mg/L			09/14/17 08:20	1
pH	7.5	H5	1.7	SU			09/14/17 16:33	1
Temperature	13.7	H5	0.1	Degrees C			09/14/17 16:33	1

Client Sample ID: FC-CCR-MW70-9917

Lab Sample ID: 550-89579-15
Date Collected: 09/09/17 17:46
Matrix: Water
Date Received: 09/12/17 14:44

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1100	D2	400	mg/L			09/24/17 03:22	200
Fluoride	2.5	D1	0.80	mg/L			09/24/17 03:03	2
Sulfate	6500	D2	400	mg/L			09/24/17 03:22	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	99	D2	0.10	mg/L		09/13/17 06:44	09/28/17 01:03	2

Client Sample Results

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

TestAmerica Job ID: 550-89579-1

Client Sample ID: FC-CCR-MW70-9917

Lab Sample ID: 550-89579-15
Matrix: Water

Date Collected: 09/09/17 17:46
Date Received: 09/12/17 14:44

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

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	520		2.0	mg/L		09/13/17 06:44	09/26/17 05:55	1
Magnesium	1200	D2	4.0	mg/L		09/13/17 06:44	09/28/17 01:03	2
Potassium	17		0.50	mg/L		09/13/17 06:44	09/26/17 05:55	1
Sodium	820	B7	0.50	mg/L		09/13/17 06:44	09/26/17 05:55	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	510		6.0	mg/L			09/13/17 18:30	1
Bicarbonate Alkalinity as CaCO3	510		6.0	mg/L			09/13/17 18:30	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 18:30	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			09/13/17 18:30	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 18:30	1
Total Dissolved Solids	12000	D2	100	mg/L			09/13/17 09:08	1
pH	7.0	H5	1.7	SU			09/14/17 16:33	1
Temperature	10.0	H5	0.1	Degrees C			09/14/17 16:33	1

Client Sample ID: FC-CCR-MW71-91117

Lab Sample ID: 550-89579-16
Matrix: Water

Date Collected: 09/11/17 08:56
Date Received: 09/12/17 14:44

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	570	D2	400	mg/L			09/24/17 03:59	200
Fluoride	ND	D1 D5	2.0	mg/L			09/24/17 03:40	5
Sulfate	9900	D2	400	mg/L			09/24/17 03:59	200

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		09/13/17 06:44	09/28/17 01:09	1
Calcium	470		2.0	mg/L		09/13/17 06:44	09/26/17 06:01	1
Magnesium	1800	D2	4.0	mg/L		09/13/17 06:44	09/28/17 01:15	2
Potassium	26		0.50	mg/L		09/13/17 06:44	09/26/17 06:01	1
Sodium	1100	B7	0.50	mg/L		09/13/17 06:44	09/26/17 06:01	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	420		6.0	mg/L			09/13/17 18:39	1
Bicarbonate Alkalinity as CaCO3	420		6.0	mg/L			09/13/17 18:39	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 18:39	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			09/13/17 18:39	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 18:39	1
Total Dissolved Solids	15000	D2	100	mg/L			09/14/17 11:00	1
pH	7.1	H5	1.7	SU			09/14/17 16:33	1
Temperature	11.0	H5	0.1	Degrees C			09/14/17 16:33	1

Client Sample Results

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

TestAmerica Job ID: 550-89579-1

Client Sample ID: FC-CCR-MW72-91017

Lab Sample ID: 550-89579-17
Date Collected: 09/10/17 17:54
Matrix: Water
Date Received: 09/12/17 14:44

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	460	D2	10	mg/L			09/24/17 04:17	5
Fluoride	ND	D1 D5	2.0	mg/L			09/24/17 04:17	5
Sulfate	11000	D2	400	mg/L			09/24/17 04:35	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	0.21		0.050	mg/L		09/13/17 06:44	09/28/17 01:20	1
Calcium	470		2.0	mg/L		09/13/17 06:44	09/26/17 06:06	1
Magnesium	2300	D2	10	mg/L		09/13/17 06:44	09/28/17 15:48	5
Potassium	28		0.50	mg/L		09/13/17 06:44	09/26/17 06:06	1
Sodium	730	B7	0.50	mg/L		09/13/17 06:44	09/26/17 06:06	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	610		6.0	mg/L			09/13/17 18:50	1
Bicarbonate Alkalinity as CaCO3	610		6.0	mg/L			09/13/17 18:50	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 18:50	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			09/13/17 18:50	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 18:50	1
Total Dissolved Solids	17000	D2	100	mg/L			09/14/17 08:20	1
pH	7.0	H5	1.7	SU			09/14/17 16:33	1
Temperature	11.5	H5	0.1	Degrees C			09/14/17 16:33	1

Client Sample ID: FC-CCR-MW73-91017

Lab Sample ID: 550-89579-18
Date Collected: 09/10/17 11:37
Matrix: Water
Date Received: 09/12/17 14:44

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	470	D2	400	mg/L			09/24/17 05:12	200
Fluoride	ND	D1 D5	0.80	mg/L			09/24/17 04:54	2
Sulfate	6000	D2	400	mg/L			09/24/17 05:12	200

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		09/13/17 06:44	09/28/17 01:32	1
Calcium	520		2.0	mg/L		09/13/17 06:44	09/26/17 06:21	1
Magnesium	680		2.0	mg/L		09/13/17 06:44	09/26/17 06:21	1
Potassium	30		0.50	mg/L		09/13/17 06:44	09/26/17 06:21	1
Sodium	1300		0.50	mg/L		09/13/17 06:44	10/02/17 16:16	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	730		6.0	mg/L			09/13/17 19:03	1
Bicarbonate Alkalinity as CaCO3	730		6.0	mg/L			09/13/17 19:03	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 19:03	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			09/13/17 19:03	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 19:03	1
Total Dissolved Solids	9900	D2	100	mg/L			09/14/17 08:20	1
pH	7.0	H5	1.7	SU			09/14/17 16:33	1
Temperature	11.8	H5	0.1	Degrees C			09/14/17 16:33	1

Client Sample Results

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

TestAmerica Job ID: 550-89579-1

Client Sample ID: FC-CCR-MW74-91017

Lab Sample ID: 550-89579-19
Date Collected: 09/10/17 12:10
Matrix: Water
Date Received: 09/12/17 14:44

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	470	D2	200	mg/L			09/24/17 06:26	100
Fluoride	2.0	D1	0.80	mg/L			09/24/17 06:07	2
Sulfate	11000	D2	400	mg/L			09/24/17 06:44	200

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.9		0.10	mg/L		09/13/17 06:44	09/28/17 01:46	2
Calcium	420		2.0	mg/L		09/13/17 06:44	09/26/17 06:27	1
Magnesium	1100	D2	10	mg/L		09/13/17 06:44	10/02/17 16:22	5
Potassium	23		0.50	mg/L		09/13/17 06:44	09/26/17 06:27	1
Sodium	3200	D2	2.5	mg/L		09/13/17 06:44	10/02/17 16:22	5

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	410		6.0	mg/L			09/13/17 19:12	1
Bicarbonate Alkalinity as CaCO3	410		6.0	mg/L			09/13/17 19:12	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 19:12	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			09/13/17 19:12	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 19:12	1
Total Dissolved Solids	15000	D2	100	mg/L			09/14/17 08:20	1
pH	7.7	H5	1.7	SU			09/14/17 16:33	1
Temperature	11.6	H5	0.1	Degrees C			09/14/17 16:33	1

Client Sample ID: FC-CCR-MW75-91017

Lab Sample ID: 550-89579-20
Date Collected: 09/10/17 14:24
Matrix: Water
Date Received: 09/12/17 14:44

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	300	D2	10	mg/L			09/24/17 07:03	5
Fluoride	ND	D1 D5	2.0	mg/L			09/24/17 07:03	5
Sulfate	4500	D2	400	mg/L			09/24/17 07:21	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		09/13/17 06:44	10/02/17 16:28	1
Calcium	470		2.0	mg/L		09/13/17 06:44	09/26/17 06:33	1
Magnesium	230		2.0	mg/L		09/13/17 06:44	09/26/17 06:33	1
Potassium	22		0.50	mg/L		09/13/17 06:44	09/26/17 06:33	1
Sodium	1200		0.50	mg/L		09/13/17 06:44	10/02/17 16:28	1

General Chemistry

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	96		6.0	mg/L			09/13/17 19:20	1
Bicarbonate Alkalinity as CaCO3	96		6.0	mg/L			09/13/17 19:20	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 19:20	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			09/13/17 19:20	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 19:20	1
Total Dissolved Solids	6500	D2	100	mg/L			09/14/17 08:20	1
pH	8.4	H5	1.7	SU			09/14/17 16:33	1

Client Sample Results

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

TestAmerica Job ID: 550-89579-1

Client Sample ID: FC-CCR-MW75-91017

Lab Sample ID: 550-89579-20
Date Collected: 09/10/17 14:24
Matrix: Water
Date Received: 09/12/17 14:44

General Chemistry (Continued)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Temperature	11.7	H5	0.1		Degrees C			09/14/17 16:33	1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-128179/2 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 128179

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0	mg/L			09/23/17 13:52	1
Fluoride	ND		0.40	mg/L			09/23/17 13:52	1
Sulfate	ND		2.0	mg/L			09/23/17 13:52	1

Lab Sample ID: LCS 550-128179/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 128179

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	4.27		mg/L		107	90 - 110
Sulfate	20.0	20.9		mg/L		105	90 - 110

Lab Sample ID: LCSD 550-128179/6 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 128179

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	20.6		mg/L		103	90 - 110	0	20
Fluoride	4.00	4.26		mg/L		107	90 - 110	0	20
Sulfate	20.0	20.9		mg/L		104	90 - 110	0	20

Lab Sample ID: 550-89579-1 MS — **Client Sample ID: FC-CCR-MW7-91017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 128179

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	ND	D1 D5	8.00	8.32	D1	mg/L		100	80 - 120

Lab Sample ID: 550-89579-1 MS — **Client Sample ID: FC-CCR-MW7-91017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 128179

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	ND	D1 D5	4000	4590	D1	mg/L		106	80 - 120
Sulfate	6600	D2 D1	4000	10800	D1 D2	mg/L		106	80 - 120

Lab Sample ID: 550-89579-1 MSD — **Client Sample ID: FC-CCR-MW7-91017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 128179

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	8.24	D1	mg/L		99	80 - 120	1	20

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-89579-1 MSD — **Client Sample ID: FC-CCR-MW7-91017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 128179

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	ND	D1 D5	4000	4570	D1	mg/L		105	80 - 120	0	20
Sulfate	6600	D2 D1	4000	10800	D1 D2	mg/L		105	80 - 120	0	20

Lab Sample ID: MB 550-128590/2 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 128590

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		2.0	mg/L			09/27/17 15:41	1
Fluoride	ND		0.40	mg/L			09/27/17 15:41	1
Sulfate	ND		2.0	mg/L			09/27/17 15:41	1

Lab Sample ID: LCS 550-128590/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 128590

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	20.0	19.4		mg/L		97	90 - 110
Fluoride	4.00	4.22		mg/L		106	90 - 110
Sulfate	20.0	20.8		mg/L		104	90 - 110

Lab Sample ID: LCSD 550-128590/6 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 128590

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	20.0	19.4		mg/L		97	90 - 110	0	20
Fluoride	4.00	4.22		mg/L		106	90 - 110	0	20
Sulfate	20.0	20.8		mg/L		104	90 - 110	0	20

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 550-127178/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 128372 — **Prep Batch: 127178**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		2.0	mg/L		09/13/17 06:44	09/26/17 04:10	1
Magnesium	ND		2.0	mg/L		09/13/17 06:44	09/26/17 04:10	1
Potassium	ND		0.50	mg/L		09/13/17 06:44	09/26/17 04:10	1
Sodium	1.69	B1	0.50	mg/L		09/13/17 06:44	09/26/17 04:10	1

Lab Sample ID: MB 550-127178/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 128599 — **Prep Batch: 127178**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	ND		0.050	mg/L		09/13/17 06:44	09/27/17 23:22	1
Calcium	ND		2.0	mg/L		09/13/17 06:44	09/27/17 23:22	1

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

Lab Sample ID: MB 550-127178/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 128599 — **Prep Batch: 127178**

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	ND		2.0	mg/L		09/13/17 06:44	09/27/17 23:22	1
Potassium	ND		0.50	mg/L		09/13/17 06:44	09/27/17 23:22	1

Lab Sample ID: LCS 550-127178/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 128599 — **Prep Batch: 127178**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	1.00	1.02		mg/L		102	85 - 115
Calcium	21.0	21.4		mg/L		102	85 - 115
Magnesium	21.0	21.4		mg/L		102	85 - 115
Potassium	20.0	20.6		mg/L		103	85 - 115

Lab Sample ID: LCSD 550-127178/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 128599 — **Prep Batch: 127178**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	1.00	1.05		mg/L		105	85 - 115	2	20
Calcium	21.0	21.8		mg/L		104	85 - 115	2	20
Magnesium	21.0	21.6		mg/L		103	85 - 115	1	20
Potassium	20.0	20.8		mg/L		104	85 - 115	1	20

Lab Sample ID: 550-89579-1 MS — **Client Sample ID: FC-CCR-MW7-91017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 128372 — **Prep Batch: 127178**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	430	M3	21.0	441	M3	mg/L		61	70 - 130
Magnesium	610	M3	21.0	633	M3	mg/L		92	70 - 130
Potassium	35		20.0	56.3		mg/L		106	70 - 130
Sodium	1600	M3 B7	20.0	1680	M3	mg/L		164	70 - 130

Lab Sample ID: 550-89579-1 MS — **Client Sample ID: FC-CCR-MW7-91017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 128599 — **Prep Batch: 127178**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Boron	8.0		1.00	9.06	M3	mg/L		111	70 - 130

Lab Sample ID: 550-89579-1 MSD — **Client Sample ID: FC-CCR-MW7-91017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 128372 — **Prep Batch: 127178**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Calcium	430	M3	21.0	439	M3	mg/L		48	70 - 130	1	20
Magnesium	610	M3	21.0	621	M3	mg/L		35	70 - 130	2	20
Potassium	35		20.0	56.1		mg/L		106	70 - 130	0	20
Sodium	1600	M3 B7	20.0	1650	M3	mg/L		39	70 - 130	2	20

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

Lab Sample ID: 550-89579-1 MSD — **Client Sample ID: FC-CCR-MW7-91017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 128599 — **Prep Batch: 127178**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Boron	8.0		1.00	8.79	M3	mg/L		84	70 - 130	3	20

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 550-127305/35 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 127305

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 15:29	1
Bicarbonate Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 15:29	1
Carbonate Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 15:29	1
Alkalinity, Phenolphthalein	ND		6.0	mg/L			09/13/17 15:29	1
Hydroxide Alkalinity as CaCO3	ND		6.0	mg/L			09/13/17 15:29	1

Lab Sample ID: LCS 550-127305/34 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 127305

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

Lab Sample ID: LCSD 550-127305/48 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 127305

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity as CaCO3	250	257		mg/L		103	90 - 110	0	20

Lab Sample ID: 550-89579-1 DU — **Client Sample ID: FC-CCR-MW7-91017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 127305

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity as CaCO3	510		520		mg/L		2	20
Bicarbonate Alkalinity as CaCO3	510		520		mg/L		2	20
Carbonate Alkalinity as CaCO3	ND		ND		mg/L		NC	20
Alkalinity, Phenolphthalein	ND		ND		mg/L		NC	20
Hydroxide Alkalinity as CaCO3	ND		ND		mg/L		NC	20

Lab Sample ID: 550-89579-11 DU — **Client Sample ID: FC-CCR-MW67-91017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 127305

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity as CaCO3	340		339		mg/L		0.2	20
Bicarbonate Alkalinity as CaCO3	340		339		mg/L		0.2	20
Carbonate Alkalinity as CaCO3	ND		ND		mg/L		NC	20
Alkalinity, Phenolphthalein	ND		ND		mg/L		NC	20

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: 550-89579-11 DU — **Client Sample ID: FC-CCR-MW67-91017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 127305

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Hydroxide Alkalinity as CaCO3	ND			ND		mg/L				NC	20

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

Lab Sample ID: MB 550-127187/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 127187

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		20		mg/L			09/13/17 09:08	1

Lab Sample ID: LCS 550-127187/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 127187

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids			1000	978		mg/L		98	90 - 110		

Lab Sample ID: LCSD 550-127187/3 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 127187

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids			1000	984		mg/L		98	90 - 110	1	10

Lab Sample ID: 550-89436-A-4 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 127187

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	4100	D2		3920	D2	mg/L				5	10

Lab Sample ID: 550-89579-1 DU — **Client Sample ID: FC-CCR-MW7-91017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 127187

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	9900	D2		9670	D2	mg/L				2	10

Lab Sample ID: MB 550-127313/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 127313

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		20		mg/L			09/14/17 08:20	1

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

Lab Sample ID: LCS 550-127313/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 127313

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids			1000	970		mg/L		97	90 - 110		

Lab Sample ID: LCSD 550-127313/3 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 127313

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids			1000	970		mg/L		97	90 - 110	0	10

Lab Sample ID: 550-89662-A-1 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 127313

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	1400			1380		mg/L				1	10

Lab Sample ID: MB 550-127344/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 127344

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		20		mg/L			09/14/17 11:00	1

Lab Sample ID: LCS 550-127344/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 127344

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids			1000	964		mg/L		96	90 - 110		

Lab Sample ID: LCSD 550-127344/3 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 127344

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Dissolved Solids			1000	986		mg/L		99	90 - 110	2	10

Lab Sample ID: 550-89494-A-4 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 127344

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	3600	D2		3680	D2	mg/L				1	10

Lab Sample ID: 550-89606-B-3 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 127344

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	32000	D2		31700	D2	mg/L				0	10

Method: SM 4500 H+ B - pH

Lab Sample ID: LCSSRM 550-127404/1 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 127404

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	6.9		SU		99.1	98.5 - 101.5

Lab Sample ID: LCSSRM 550-127404/10 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 127404

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

Lab Sample ID: LCSSRM 550-127404/20 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 127404

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		99.6	98.5 - 101.5

Lab Sample ID: LCSSRM 550-127404/29 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 127404

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		99.7	98.5 - 101.5

Lab Sample ID: 550-89579-1 DU — **Client Sample ID: FC-CCR-MW7-91017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 127404

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.5	H5	7.6	H5	SU		0.1	5
Temperature	9.9	H5	11.0	H5	Degrees C		11	

Lab Sample ID: 550-89579-7 DU — **Client Sample ID: FC-CCR-MW64-9917**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 127404

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.8	H5	7.8	H5	SU		0	5
Temperature	12.4	H5	12.2	H5	Degrees C		2	

Lab Sample ID: 550-89579-15 DU — **Client Sample ID: FC-CCR-MW70-9917**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 127404

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.0	H5	7.0	H5	SU		0.1	5
Temperature	10.0	H5	11.0	H5	Degrees C		10	

QC Association Summary

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

TestAmerica Job ID: 550-89579-1

HPLC/IC

Analysis Batch: 128179

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-89579-1	FC-CCR-MW7-91017	Total/NA	Water	300.0	
550-89579-1	FC-CCR-MW7-91017	Total/NA	Water	300.0	
550-89579-2	FC-CCR-MW49A-91017	Total/NA	Water	300.0	
550-89579-2	FC-CCR-MW49A-91017	Total/NA	Water	300.0	
550-89579-3	FC-CCR-MW60-91017	Total/NA	Water	300.0	
550-89579-3	FC-CCR-MW60-91017	Total/NA	Water	300.0	
550-89579-4	FC-CCR-MW61-91017	Total/NA	Water	300.0	
550-89579-4	FC-CCR-MW61-91017	Total/NA	Water	300.0	
550-89579-5	FC-CCR-MW62-9917	Total/NA	Water	300.0	
550-89579-5	FC-CCR-MW62-9917	Total/NA	Water	300.0	
550-89579-6	FC-CCR-MW63-9917	Total/NA	Water	300.0	
550-89579-6	FC-CCR-MW63-9917	Total/NA	Water	300.0	
550-89579-7	FC-CCR-MW64-9917	Total/NA	Water	300.0	
550-89579-7	FC-CCR-MW64-9917	Total/NA	Water	300.0	
550-89579-8	FC-CCR-MW65-9917	Total/NA	Water	300.0	
550-89579-8	FC-CCR-MW65-9917	Total/NA	Water	300.0	
550-89579-9	FC-CCR-FD01-9917	Total/NA	Water	300.0	
550-89579-9	FC-CCR-FD01-9917	Total/NA	Water	300.0	
550-89579-10	FC-CCR-MW66-9917	Total/NA	Water	300.0	
550-89579-10	FC-CCR-MW66-9917	Total/NA	Water	300.0	
550-89579-11	FC-CCR-MW67-91017	Total/NA	Water	300.0	
550-89579-11	FC-CCR-MW67-91017	Total/NA	Water	300.0	
550-89579-12	FC-CCR-MW68-91017	Total/NA	Water	300.0	
550-89579-12	FC-CCR-MW68-91017	Total/NA	Water	300.0	
550-89579-13	FC-CCR-MW69-91017	Total/NA	Water	300.0	
550-89579-13	FC-CCR-MW69-91017	Total/NA	Water	300.0	
550-89579-14	FC-CCR-FD02-91017	Total/NA	Water	300.0	
550-89579-14	FC-CCR-FD02-91017	Total/NA	Water	300.0	
550-89579-15	FC-CCR-MW70-9917	Total/NA	Water	300.0	
550-89579-15	FC-CCR-MW70-9917	Total/NA	Water	300.0	
550-89579-16	FC-CCR-MW71-91117	Total/NA	Water	300.0	
550-89579-16	FC-CCR-MW71-91117	Total/NA	Water	300.0	
550-89579-17	FC-CCR-MW72-91017	Total/NA	Water	300.0	
550-89579-17	FC-CCR-MW72-91017	Total/NA	Water	300.0	
550-89579-18	FC-CCR-MW73-91017	Total/NA	Water	300.0	
550-89579-18	FC-CCR-MW73-91017	Total/NA	Water	300.0	
550-89579-19	FC-CCR-MW74-91017	Total/NA	Water	300.0	
550-89579-19	FC-CCR-MW74-91017	Total/NA	Water	300.0	
550-89579-19	FC-CCR-MW74-91017	Total/NA	Water	300.0	
550-89579-20	FC-CCR-MW75-91017	Total/NA	Water	300.0	
550-89579-20	FC-CCR-MW75-91017	Total/NA	Water	300.0	
MB 550-128179/2	Method Blank	Total/NA	Water	300.0	
LCS 550-128179/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-128179/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-89579-1 MS	FC-CCR-MW7-91017	Total/NA	Water	300.0	
550-89579-1 MS	FC-CCR-MW7-91017	Total/NA	Water	300.0	
550-89579-1 MSD	FC-CCR-MW7-91017	Total/NA	Water	300.0	
550-89579-1 MSD	FC-CCR-MW7-91017	Total/NA	Water	300.0	

HPLC/IC (Continued)

Analysis Batch: 128590

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-89579-1	FC-CCR-MW7-91017	Total/NA	Water	300.0	
MB 550-128590/2	Method Blank	Total/NA	Water	300.0	
LCS 550-128590/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-128590/6	Lab Control Sample Dup	Total/NA	Water	300.0	

Metals

Prep Batch: 127178

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-89579-1	FC-CCR-MW7-91017	Total/NA	Water	200.7	
550-89579-2	FC-CCR-MW49A-91017	Total/NA	Water	200.7	
550-89579-2 - DL	FC-CCR-MW49A-91017	Total/NA	Water	200.7	
550-89579-3	FC-CCR-MW60-91017	Total/NA	Water	200.7	
550-89579-4	FC-CCR-MW61-91017	Total/NA	Water	200.7	
550-89579-5	FC-CCR-MW62-9917	Total/NA	Water	200.7	
550-89579-6	FC-CCR-MW63-9917	Total/NA	Water	200.7	
550-89579-7	FC-CCR-MW64-9917	Total/NA	Water	200.7	
550-89579-8	FC-CCR-MW65-9917	Total/NA	Water	200.7	
550-89579-9	FC-CCR-FD01-9917	Total/NA	Water	200.7	
550-89579-10	FC-CCR-MW66-9917	Total/NA	Water	200.7	
550-89579-11	FC-CCR-MW67-91017	Total/NA	Water	200.7	
550-89579-12	FC-CCR-MW68-91017	Total/NA	Water	200.7	
550-89579-13	FC-CCR-MW69-91017	Total/NA	Water	200.7	
550-89579-14	FC-CCR-FD02-91017	Total/NA	Water	200.7	
550-89579-15	FC-CCR-MW70-9917	Total/NA	Water	200.7	
550-89579-16	FC-CCR-MW71-91117	Total/NA	Water	200.7	
550-89579-17	FC-CCR-MW72-91017	Total/NA	Water	200.7	
550-89579-18	FC-CCR-MW73-91017	Total/NA	Water	200.7	
550-89579-19	FC-CCR-MW74-91017	Total/NA	Water	200.7	
550-89579-20	FC-CCR-MW75-91017	Total/NA	Water	200.7	
MB 550-127178/1-A	Method Blank	Total/NA	Water	200.7	
LCS 550-127178/2-A	Lab Control Sample	Total/NA	Water	200.7	
LCSD 550-127178/3-A	Lab Control Sample Dup	Total/NA	Water	200.7	
550-89579-1 MS	FC-CCR-MW7-91017	Total/NA	Water	200.7	
550-89579-1 MSD	FC-CCR-MW7-91017	Total/NA	Water	200.7	

Analysis Batch: 128372

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-89579-1	FC-CCR-MW7-91017	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-2 - DL	FC-CCR-MW49A-91017	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-2	FC-CCR-MW49A-91017	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-3	FC-CCR-MW60-91017	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-4	FC-CCR-MW61-91017	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-5	FC-CCR-MW62-9917	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-6	FC-CCR-MW63-9917	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-7	FC-CCR-MW64-9917	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-8	FC-CCR-MW65-9917	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-9	FC-CCR-FD01-9917	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-10	FC-CCR-MW66-9917	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-11	FC-CCR-MW67-91017	Total/NA	Water	200.7 Rev 4.4	127178

Metals (Continued)

Analysis Batch: 128372 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-89579-12	FC-CCR-MW68-91017	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-13	FC-CCR-MW69-91017	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-14	FC-CCR-FD02-91017	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-15	FC-CCR-MW70-9917	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-16	FC-CCR-MW71-91117	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-17	FC-CCR-MW72-91017	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-18	FC-CCR-MW73-91017	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-19	FC-CCR-MW74-91017	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-20	FC-CCR-MW75-91017	Total/NA	Water	200.7 Rev 4.4	127178
MB 550-127178/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-1 MS	FC-CCR-MW7-91017	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-1 MSD	FC-CCR-MW7-91017	Total/NA	Water	200.7 Rev 4.4	127178

Analysis Batch: 128599

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-89579-1	FC-CCR-MW7-91017	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-2	FC-CCR-MW49A-91017	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-3	FC-CCR-MW60-91017	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-4	FC-CCR-MW61-91017	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-5	FC-CCR-MW62-9917	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-6	FC-CCR-MW63-9917	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-7	FC-CCR-MW64-9917	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-8	FC-CCR-MW65-9917	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-9	FC-CCR-FD01-9917	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-10	FC-CCR-MW66-9917	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-11	FC-CCR-MW67-91017	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-12	FC-CCR-MW68-91017	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-13	FC-CCR-MW69-91017	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-14	FC-CCR-FD02-91017	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-15	FC-CCR-MW70-9917	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-16	FC-CCR-MW71-91117	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-16	FC-CCR-MW71-91117	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-17	FC-CCR-MW72-91017	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-18	FC-CCR-MW73-91017	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-19	FC-CCR-MW74-91017	Total/NA	Water	200.7 Rev 4.4	127178
MB 550-127178/1-A	Method Blank	Total/NA	Water	200.7 Rev 4.4	127178
LCS 550-127178/2-A	Lab Control Sample	Total/NA	Water	200.7 Rev 4.4	127178
LCSD 550-127178/3-A	Lab Control Sample Dup	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-1 MS	FC-CCR-MW7-91017	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-1 MSD	FC-CCR-MW7-91017	Total/NA	Water	200.7 Rev 4.4	127178

Analysis Batch: 128662

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-89579-17	FC-CCR-MW72-91017	Total/NA	Water	200.7 Rev 4.4	127178

Analysis Batch: 128930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-89579-18	FC-CCR-MW73-91017	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-19	FC-CCR-MW74-91017	Total/NA	Water	200.7 Rev 4.4	127178
550-89579-20	FC-CCR-MW75-91017	Total/NA	Water	200.7 Rev 4.4	127178

QC Association Summary

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

TestAmerica Job ID: 550-89579-1

General Chemistry

Analysis Batch: 127187

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-89579-1	FC-CCR-MW7-91017	Total/NA	Water	SM 2540C	
550-89579-2	FC-CCR-MW49A-91017	Total/NA	Water	SM 2540C	
550-89579-3	FC-CCR-MW60-91017	Total/NA	Water	SM 2540C	
550-89579-4	FC-CCR-MW61-91017	Total/NA	Water	SM 2540C	
550-89579-5	FC-CCR-MW62-9917	Total/NA	Water	SM 2540C	
550-89579-6	FC-CCR-MW63-9917	Total/NA	Water	SM 2540C	
550-89579-7	FC-CCR-MW64-9917	Total/NA	Water	SM 2540C	
550-89579-8	FC-CCR-MW65-9917	Total/NA	Water	SM 2540C	
550-89579-9	FC-CCR-FD01-9917	Total/NA	Water	SM 2540C	
550-89579-10	FC-CCR-MW66-9917	Total/NA	Water	SM 2540C	
550-89579-11	FC-CCR-MW67-91017	Total/NA	Water	SM 2540C	
550-89579-12	FC-CCR-MW68-91017	Total/NA	Water	SM 2540C	
550-89579-15	FC-CCR-MW70-9917	Total/NA	Water	SM 2540C	
MB 550-127187/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-127187/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-127187/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-89436-A-4 DU	Duplicate	Total/NA	Water	SM 2540C	
550-89579-1 DU	FC-CCR-MW7-91017	Total/NA	Water	SM 2540C	

Analysis Batch: 127305

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-89579-1	FC-CCR-MW7-91017	Total/NA	Water	SM 2320B	
550-89579-2	FC-CCR-MW49A-91017	Total/NA	Water	SM 2320B	
550-89579-3	FC-CCR-MW60-91017	Total/NA	Water	SM 2320B	
550-89579-4	FC-CCR-MW61-91017	Total/NA	Water	SM 2320B	
550-89579-5	FC-CCR-MW62-9917	Total/NA	Water	SM 2320B	
550-89579-6	FC-CCR-MW63-9917	Total/NA	Water	SM 2320B	
550-89579-7	FC-CCR-MW64-9917	Total/NA	Water	SM 2320B	
550-89579-8	FC-CCR-MW65-9917	Total/NA	Water	SM 2320B	
550-89579-9	FC-CCR-FD01-9917	Total/NA	Water	SM 2320B	
550-89579-10	FC-CCR-MW66-9917	Total/NA	Water	SM 2320B	
550-89579-11	FC-CCR-MW67-91017	Total/NA	Water	SM 2320B	
550-89579-12	FC-CCR-MW68-91017	Total/NA	Water	SM 2320B	
550-89579-13	FC-CCR-MW69-91017	Total/NA	Water	SM 2320B	
550-89579-14	FC-CCR-FD02-91017	Total/NA	Water	SM 2320B	
550-89579-15	FC-CCR-MW70-9917	Total/NA	Water	SM 2320B	
550-89579-16	FC-CCR-MW71-91117	Total/NA	Water	SM 2320B	
550-89579-17	FC-CCR-MW72-91017	Total/NA	Water	SM 2320B	
550-89579-18	FC-CCR-MW73-91017	Total/NA	Water	SM 2320B	
550-89579-19	FC-CCR-MW74-91017	Total/NA	Water	SM 2320B	
550-89579-20	FC-CCR-MW75-91017	Total/NA	Water	SM 2320B	
MB 550-127305/35	Method Blank	Total/NA	Water	SM 2320B	
LCS 550-127305/34	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 550-127305/48	Lab Control Sample Dup	Total/NA	Water	SM 2320B	
550-89579-1 DU	FC-CCR-MW7-91017	Total/NA	Water	SM 2320B	
550-89579-11 DU	FC-CCR-MW67-91017	Total/NA	Water	SM 2320B	

Analysis Batch: 127313

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-89579-14	FC-CCR-FD02-91017	Total/NA	Water	SM 2540C	
550-89579-17	FC-CCR-MW72-91017	Total/NA	Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 127313 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-89579-18	FC-CCR-MW73-91017	Total/NA	Water	SM 2540C	
550-89579-19	FC-CCR-MW74-91017	Total/NA	Water	SM 2540C	
550-89579-20	FC-CCR-MW75-91017	Total/NA	Water	SM 2540C	
MB 550-127313/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-127313/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-127313/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-89662-A-1 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 127344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-89579-13	FC-CCR-MW69-91017	Total/NA	Water	SM 2540C	
550-89579-16	FC-CCR-MW71-91117	Total/NA	Water	SM 2540C	
MB 550-127344/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 550-127344/2	Lab Control Sample	Total/NA	Water	SM 2540C	
LCSD 550-127344/3	Lab Control Sample Dup	Total/NA	Water	SM 2540C	
550-89494-A-4 DU	Duplicate	Total/NA	Water	SM 2540C	
550-89606-B-3 DU	Duplicate	Total/NA	Water	SM 2540C	

Analysis Batch: 127404

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-89579-1	FC-CCR-MW7-91017	Total/NA	Water	SM 4500 H+ B	
550-89579-2	FC-CCR-MW49A-91017	Total/NA	Water	SM 4500 H+ B	
550-89579-3	FC-CCR-MW60-91017	Total/NA	Water	SM 4500 H+ B	
550-89579-4	FC-CCR-MW61-91017	Total/NA	Water	SM 4500 H+ B	
550-89579-5	FC-CCR-MW62-9917	Total/NA	Water	SM 4500 H+ B	
550-89579-6	FC-CCR-MW63-9917	Total/NA	Water	SM 4500 H+ B	
550-89579-7	FC-CCR-MW64-9917	Total/NA	Water	SM 4500 H+ B	
550-89579-8	FC-CCR-MW65-9917	Total/NA	Water	SM 4500 H+ B	
550-89579-9	FC-CCR-FD01-9917	Total/NA	Water	SM 4500 H+ B	
550-89579-10	FC-CCR-MW66-9917	Total/NA	Water	SM 4500 H+ B	
550-89579-11	FC-CCR-MW67-91017	Total/NA	Water	SM 4500 H+ B	
550-89579-12	FC-CCR-MW68-91017	Total/NA	Water	SM 4500 H+ B	
550-89579-13	FC-CCR-MW69-91017	Total/NA	Water	SM 4500 H+ B	
550-89579-14	FC-CCR-FD02-91017	Total/NA	Water	SM 4500 H+ B	
550-89579-15	FC-CCR-MW70-9917	Total/NA	Water	SM 4500 H+ B	
550-89579-16	FC-CCR-MW71-91117	Total/NA	Water	SM 4500 H+ B	
550-89579-17	FC-CCR-MW72-91017	Total/NA	Water	SM 4500 H+ B	
550-89579-18	FC-CCR-MW73-91017	Total/NA	Water	SM 4500 H+ B	
550-89579-19	FC-CCR-MW74-91017	Total/NA	Water	SM 4500 H+ B	
550-89579-20	FC-CCR-MW75-91017	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-127404/1	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-127404/10	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-127404/20	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSSRM 550-127404/29	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
550-89579-1 DU	FC-CCR-MW7-91017	Total/NA	Water	SM 4500 H+ B	
550-89579-7 DU	FC-CCR-MW64-9917	Total/NA	Water	SM 4500 H+ B	
550-89579-15 DU	FC-CCR-MW70-9917	Total/NA	Water	SM 4500 H+ B	

Lab Chronicle

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

TestAmerica Job ID: 550-89579-1

Client Sample ID: FC-CCR-MW7-91017 — Lab Sample ID: 550-89579-1

Date Collected: 09/10/17 16:06 — **Matrix: Water**
Date Received: 09/12/17 14:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	128179	09/23/17 15:24	JSS	TAL PHX
Total/NA	Analysis	300.0		200	128179	09/23/17 16:19	JSS	TAL PHX
Total/NA	Analysis	300.0		10	128590	09/27/17 19:20	JSS	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128372	09/26/17 04:30	TC1	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128599	09/27/17 23:42	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	127305	09/13/17 15:39	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	127187		YET	TAL PHX
					(Start)	09/13/17 09:08		
					(End)	09/14/17 10:30		
Total/NA	Analysis	SM 4500 H+ B		1	127404	09/14/17 16:33	NEL	TAL PHX

Client Sample ID: FC-CCR-MW49A-91017 — Lab Sample ID: 550-89579-2

Date Collected: 09/10/17 17:05 — **Matrix: Water**
Date Received: 09/12/17 14:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10	128179	09/23/17 17:14	JSS	TAL PHX
Total/NA	Analysis	300.0		500	128179	09/23/17 17:33	JSS	TAL PHX
Total/NA	Prep	200.7	DL		127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4	DL	10	128372	09/26/17 04:36	TC1	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128372	09/26/17 04:39	TC1	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128599	09/27/17 23:48	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	127305	09/13/17 16:01	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	127187		YET	TAL PHX
					(Start)	09/13/17 09:08		
					(End)	09/14/17 10:30		
Total/NA	Analysis	SM 4500 H+ B		1	127404	09/14/17 16:33	NEL	TAL PHX

Client Sample ID: FC-CCR-MW60-91017 — Lab Sample ID: 550-89579-3

Date Collected: 09/10/17 14:58 — **Matrix: Water**
Date Received: 09/12/17 14:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	128179	09/23/17 17:51	JSS	TAL PHX
Total/NA	Analysis	300.0		100	128179	09/23/17 18:10	JSS	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128372	09/26/17 04:44	TC1	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX

Lab Chronicle

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

TestAmerica Job ID: 550-89579-1

Client Sample ID: FC-CCR-MW60-91017 — Lab Sample ID: 550-89579-3

Date Collected: 09/10/17 14:58
Date Received: 09/12/17 14:44
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	200.7 Rev 4.4		1	128599	09/27/17 23:54	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	127305	09/13/17 16:10	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	127187		YET	TAL PHX
					(Start)	09/13/17 09:08		
					(End)	09/14/17 10:30		
Total/NA	Analysis	SM 4500 H+ B		1	127404	09/14/17 16:33	NEL	TAL PHX

Client Sample ID: FC-CCR-MW61-91017 — Lab Sample ID: 550-89579-4

Date Collected: 09/10/17 13:46
Date Received: 09/12/17 14:44
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	128179	09/23/17 19:05	JSS	TAL PHX
Total/NA	Analysis	300.0		50	128179	09/23/17 19:23	JSS	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128372	09/26/17 04:50	TC1	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128599	09/27/17 23:59	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	127305	09/13/17 16:18	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	127187		YET	TAL PHX
					(Start)	09/13/17 09:08		
					(End)	09/14/17 10:30		
Total/NA	Analysis	SM 4500 H+ B		1	127404	09/14/17 16:33	NEL	TAL PHX

Client Sample ID: FC-CCR-MW62-9917 — Lab Sample ID: 550-89579-5

Date Collected: 09/09/17 15:36
Date Received: 09/12/17 14:44
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	128179	09/23/17 19:42	JSS	TAL PHX
Total/NA	Analysis	300.0		50	128179	09/23/17 20:00	JSS	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128372	09/26/17 04:56	TC1	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128599	09/28/17 00:05	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	127305	09/13/17 16:30	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	127187		YET	TAL PHX
					(Start)	09/13/17 09:08		
					(End)	09/14/17 10:30		
Total/NA	Analysis	SM 4500 H+ B		1	127404	09/14/17 16:33	NEL	TAL PHX

Lab Chronicle

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

TestAmerica Job ID: 550-89579-1

Client Sample ID: FC-CCR-MW63-9917 — Lab Sample ID: 550-89579-6

Date Collected: 09/09/17 16:14 — **Matrix: Water**
Date Received: 09/12/17 14:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	128179	09/23/17 20:18	JSS	TAL PHX
Total/NA	Analysis	300.0		50	128179	09/23/17 20:37	JSS	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128372	09/26/17 05:02	TC1	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128599	09/28/17 00:11	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	127305	09/13/17 16:40	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	127187		YET	TAL PHX
					(Start)	09/13/17 09:08		
					(End)	09/14/17 10:30		
Total/NA	Analysis	SM 4500 H+ B		1	127404	09/14/17 16:33	NEL	TAL PHX

Client Sample ID: FC-CCR-MW64-9917 — Lab Sample ID: 550-89579-7

Date Collected: 09/09/17 16:39 — **Matrix: Water**
Date Received: 09/12/17 14:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	128179	09/23/17 20:55	JSS	TAL PHX
Total/NA	Analysis	300.0		50	128179	09/23/17 21:14	JSS	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128372	09/26/17 05:08	TC1	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128599	09/28/17 00:17	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	127305	09/13/17 16:49	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	127187		YET	TAL PHX
					(Start)	09/13/17 09:08		
					(End)	09/14/17 10:30		
Total/NA	Analysis	SM 4500 H+ B		1	127404	09/14/17 16:33	NEL	TAL PHX

Client Sample ID: FC-CCR-MW65-9917 — Lab Sample ID: 550-89579-8

Date Collected: 09/09/17 14:45 — **Matrix: Water**
Date Received: 09/12/17 14:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	128179	09/23/17 21:32	JSS	TAL PHX
Total/NA	Analysis	300.0		20	128179	09/23/17 21:50	JSS	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128372	09/26/17 05:19	TC1	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128599	09/28/17 00:20	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	127305	09/13/17 16:58	DGS	TAL PHX

Lab Chronicle

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

TestAmerica Job ID: 550-89579-1

Client Sample ID: FC-CCR-MW65-9917 — Lab Sample ID: 550-89579-8

Date Collected: 09/09/17 14:45 — **Matrix: Water**
Date Received: 09/12/17 14:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	127187		YET	TAL PHX
					(Start)	09/13/17 09:08		
					(End)	09/14/17 10:30		
Total/NA	Analysis	SM 4500 H+ B		1	127404	09/14/17 16:33	NEL	TAL PHX

Client Sample ID: FC-CCR-FD01-9917 — Lab Sample ID: 550-89579-9

Date Collected: 09/09/17 14:45 — **Matrix: Water**
Date Received: 09/12/17 14:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	128179	09/23/17 22:46	JSS	TAL PHX
Total/NA	Analysis	300.0		20	128179	09/23/17 23:04	JSS	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128372	09/26/17 05:22	TC1	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128599	09/28/17 00:23	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	127305	09/13/17 17:08	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	127187		YET	TAL PHX
					(Start)	09/13/17 09:08		
					(End)	09/14/17 10:30		
Total/NA	Analysis	SM 4500 H+ B		1	127404	09/14/17 16:33	NEL	TAL PHX

Client Sample ID: FC-CCR-MW66-9917 — Lab Sample ID: 550-89579-10

Date Collected: 09/09/17 17:13 — **Matrix: Water**
Date Received: 09/12/17 14:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	128179	09/23/17 23:22	JSS	TAL PHX
Total/NA	Analysis	300.0		200	128179	09/23/17 23:41	JSS	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128372	09/26/17 05:25	TC1	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	128599	09/28/17 00:26	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	127305	09/13/17 17:16	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	127187		YET	TAL PHX
					(Start)	09/13/17 09:08		
					(End)	09/14/17 10:30		
Total/NA	Analysis	SM 4500 H+ B		1	127404	09/14/17 16:33	NEL	TAL PHX

Lab Chronicle

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

TestAmerica Job ID: 550-89579-1

Client Sample ID: FC-CCR-MW67-91017 — Lab Sample ID: 550-89579-11

Date Collected: 09/10/17 09:53 — **Matrix: Water**
Date Received: 09/12/17 14:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	128179	09/23/17 23:59	JSS	TAL PHX
Total/NA	Analysis	300.0		200	128179	09/24/17 00:18	JSS	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128372	09/26/17 05:31	TC1	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	128599	09/28/17 00:40	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	127305	09/13/17 17:42	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	127187		YET	TAL PHX
					(Start)	09/13/17 09:08		
					(End)	09/14/17 10:30		
Total/NA	Analysis	SM 4500 H+ B		1	127404	09/14/17 16:33	NEL	TAL PHX

Client Sample ID: FC-CCR-MW68-91017 — Lab Sample ID: 550-89579-12

Date Collected: 09/10/17 10:27 — **Matrix: Water**
Date Received: 09/12/17 14:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	128179	09/24/17 00:36	JSS	TAL PHX
Total/NA	Analysis	300.0		200	128179	09/24/17 00:55	JSS	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128372	09/26/17 05:37	TC1	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	128599	09/28/17 00:45	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	127305	09/13/17 18:01	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	127187		YET	TAL PHX
					(Start)	09/13/17 09:08		
					(End)	09/14/17 10:30		
Total/NA	Analysis	SM 4500 H+ B		1	127404	09/14/17 16:33	NEL	TAL PHX

Client Sample ID: FC-CCR-MW69-91017 — Lab Sample ID: 550-89579-13

Date Collected: 09/10/17 09:05 — **Matrix: Water**
Date Received: 09/12/17 14:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	128179	09/24/17 01:13	JSS	TAL PHX
Total/NA	Analysis	300.0		200	128179	09/24/17 01:31	JSS	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128372	09/26/17 05:43	TC1	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	128599	09/28/17 00:51	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	127305	09/13/17 18:10	DGS	TAL PHX

Lab Chronicle

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

TestAmerica Job ID: 550-89579-1

Client Sample ID: FC-CCR-MW69-91017 — Lab Sample ID: 550-89579-13

Date Collected: 09/10/17 09:05 — **Matrix: Water**
Date Received: 09/12/17 14:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	127344		YET	TAL PHX
					(Start)	09/14/17 11:00		
					(End)	09/15/17 11:30		
Total/NA	Analysis	SM 4500 H+ B		1	127404	09/14/17 16:33	NEL	TAL PHX

Client Sample ID: FC-CCR-FD02-91017 — Lab Sample ID: 550-89579-14

Date Collected: 09/10/17 09:05 — **Matrix: Water**
Date Received: 09/12/17 14:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	128179	09/24/17 02:27	JSS	TAL PHX
Total/NA	Analysis	300.0		200	128179	09/24/17 02:45	JSS	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128372	09/26/17 05:49	TC1	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	128599	09/28/17 00:57	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	127305	09/13/17 18:19	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	127313		YET	TAL PHX
					(Start)	09/14/17 08:20		
					(End)	09/15/17 10:25		
Total/NA	Analysis	SM 4500 H+ B		1	127404	09/14/17 16:33	NEL	TAL PHX

Client Sample ID: FC-CCR-MW70-9917 — Lab Sample ID: 550-89579-15

Date Collected: 09/09/17 17:46 — **Matrix: Water**
Date Received: 09/12/17 14:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	128179	09/24/17 03:03	JSS	TAL PHX
Total/NA	Analysis	300.0		200	128179	09/24/17 03:22	JSS	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128372	09/26/17 05:55	TC1	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		2	128599	09/28/17 01:03	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	127305	09/13/17 18:30	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	127187		YET	TAL PHX
					(Start)	09/13/17 09:08		
					(End)	09/14/17 10:30		
Total/NA	Analysis	SM 4500 H+ B		1	127404	09/14/17 16:33	NEL	TAL PHX

Lab Chronicle

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

TestAmerica Job ID: 550-89579-1

Client Sample ID: FC-CCR-MW71-91117

Lab Sample ID: 550-89579-16
Date Collected: 09/11/17 08:56
Matrix: Water
Date Received: 09/12/17 14:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	128179	09/24/17 03:40	JSS	TAL PHX
Total/NA	Analysis	300.0		200	128179	09/24/17 03:59	JSS	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128372	09/26/17 06:01	TC1	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128599	09/28/17 01:09	ARE	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		2	128599	09/28/17 01:15	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	127305	09/13/17 18:39	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	127344		YET	TAL PHX
					(Start)	09/14/17 11:00		
					(End)	09/15/17 11:30		
Total/NA	Analysis	SM 4500 H+ B		1	127404	09/14/17 16:33	NEL	TAL PHX

Client Sample ID: FC-CCR-MW72-91017

Lab Sample ID: 550-89579-17
Date Collected: 09/10/17 17:54
Matrix: Water
Date Received: 09/12/17 14:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	128179	09/24/17 04:17	JSS	TAL PHX
Total/NA	Analysis	300.0		200	128179	09/24/17 04:35	JSS	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128372	09/26/17 06:06	TC1	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128599	09/28/17 01:20	ARE	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	128662	09/28/17 15:48	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	127305	09/13/17 18:50	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	127313		YET	TAL PHX
					(Start)	09/14/17 08:20		
					(End)	09/15/17 10:25		
Total/NA	Analysis	SM 4500 H+ B		1	127404	09/14/17 16:33	NEL	TAL PHX

Client Sample ID: FC-CCR-MW73-91017

Lab Sample ID: 550-89579-18
Date Collected: 09/10/17 11:37
Matrix: Water
Date Received: 09/12/17 14:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	128179	09/24/17 04:54	JSS	TAL PHX
Total/NA	Analysis	300.0		200	128179	09/24/17 05:12	JSS	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128372	09/26/17 06:21	TC1	TAL PHX

Lab Chronicle

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

TestAmerica Job ID: 550-89579-1

Client Sample ID: FC-CCR-MW73-91017 — Lab Sample ID: 550-89579-18

Date Collected: 09/10/17 11:37 — **Matrix: Water**
Date Received: 09/12/17 14:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128599	09/28/17 01:32	ARE	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128930	10/02/17 16:16	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	127305	09/13/17 19:03	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	127313		YET	TAL PHX
					(Start)	09/14/17 08:20		
					(End)	09/15/17 10:25		
Total/NA	Analysis	SM 4500 H+ B		1	127404	09/14/17 16:33	NEL	TAL PHX

Client Sample ID: FC-CCR-MW74-91017 — Lab Sample ID: 550-89579-19

Date Collected: 09/10/17 12:10 — **Matrix: Water**
Date Received: 09/12/17 14:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	128179	09/24/17 06:07	JSS	TAL PHX
Total/NA	Analysis	300.0		100	128179	09/24/17 06:26	JSS	TAL PHX
Total/NA	Analysis	300.0		200	128179	09/24/17 06:44	JSS	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128372	09/26/17 06:27	TC1	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		2	128599	09/28/17 01:46	ARE	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		5	128930	10/02/17 16:22	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	127305	09/13/17 19:12	DGS	TAL PHX
Total/NA	Analysis	SM 2540C		1	127313		YET	TAL PHX
					(Start)	09/14/17 08:20		
					(End)	09/15/17 10:25		
Total/NA	Analysis	SM 4500 H+ B		1	127404	09/14/17 16:33	NEL	TAL PHX

Client Sample ID: FC-CCR-MW75-91017 — Lab Sample ID: 550-89579-20

Date Collected: 09/10/17 14:24 — **Matrix: Water**
Date Received: 09/12/17 14:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	128179	09/24/17 07:03	JSS	TAL PHX
Total/NA	Analysis	300.0		200	128179	09/24/17 07:21	JSS	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128372	09/26/17 06:33	TC1	TAL PHX
Total/NA	Prep	200.7			127178	09/13/17 06:44	SGO	TAL PHX
Total/NA	Analysis	200.7 Rev 4.4		1	128930	10/02/17 16:28	ARE	TAL PHX
Total/NA	Analysis	SM 2320B		1	127305	09/13/17 19:20	DGS	TAL PHX

Lab Chronicle

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

TestAmerica Job ID: 550-89579-1

Client Sample ID: FC-CCR-MW75-91017

Lab Sample ID: 550-89579-20

Date Collected: 09/10/17 14:24

Matrix: Water

Date Received: 09/12/17 14:44

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	127313		YET	TAL PHX
					(Start)	09/14/17 08:20		
					(End)	09/15/17 10:25		
Total/NA	Analysis	SM 4500 H+ B		1	127404	09/14/17 16:33	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: 550-89579-1

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: 550-89579-1

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

TestAmerica Phoenix
4625 E Cotton Center Blvd
Suite 189
Phoenix, AZ 85040
phone 602.437.3340 fax 602.454.9303

Chain of Custody Record

89579

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: CCR

Client Contact	Doug Lavarnway	Doug Lavarnway	9/12/2017
APS Four Corners	928-587-0319	Lab Contact:	Carrier:
End of County Road 6675	Analysis Turnaround Time		
Fruitland, New Mexico 87416			
(928) 587-0319 Phone	TAT if different from Below _____		
(xxx) xxx-xxxx FAX			
Project Name: CCR			
Site: Cholla			
P 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:
FC-CCR-MW7-91017 -01	9/10/2017	1606	G	W	2	N	x	x	x	x	x	x	
FC-CCR-MW49A-91017 -02	9/10/2017	1705	G	W	2	N	x	x	x	x	x	x	
FC-CCR-MW60-91017 -03	9/10/2017	1458	G	W	2	N	x	x	x	x	x	x	
FC-CCR-MW61-91017 -04	9/10/2017	1346	G	W	2	N	x	x	x	x	x	x	
FC-CCR-MW62-9917 -05	9/9/2017	1536	G	W	2	N	x	x	x	x	x	x	
FC-CCR-MW63-9917 -06	9/9/2017	1614	G	W	2	N	x	x	x	x	x	x	
FC-CCR-MW64-9917 -07	9/9/2017	1639	G	W	2	N	x	x	x	x	x	x	
FC-CCR-MW65-9917 -08	9/9/2017	1445	G	W	2	N	x	x	x	x	x	x	
FC-CCR-FD01-9917 -09	9/9/2017	1445	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.

☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

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

☐ Return to Client ☑ Disposal by Lab ☐ Archive for_____ Months

Special Instructions/QC Requirements & Comments:

1.8°C, 2.0°C, 1.8°C, 1.2°C PC

Custody Seals Intact: ☐ Yes ☐ No | 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	9/12 1444			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time: 9-12-17 1444

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

TestAmerica Phoenix
4625 E Cotton Center Blvd
Suite 189
Phoenix, AZ 85040
phone 602.437.3340 fax 602.454.9303

Chain of Custody Record

89579

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

10/5/2017

Regulatory Program: CCR

Client Contact	**Doug Lavarnway**	**Doug Lavarnway**	**9/12/2017**
APS Four Corners	928-587-0319	**Lab Contact:**	**Carrier:**
End of County Road 6675	**Analysis Turnaround Time**		
Fruitland, New Mexico 87416			
(928) 587-0319 Phone	TAT if different from Below _____		
(xxx) xxx-xxxx FAX			
Project Name: CCR			
Site: Cholla			
P O #			

COC No: 2 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:
FC-CCR-MW66-9917 -10	9/9/2017	1713	G	W	2	N	x	x	x	x	x	x	
FC-CCR-MW67-91017 -11	9/10/2017	953	G	W	2	N	x	x	x	x	x	x	
FC-CCR-MW68-91017 -12	9/10/2017	1027	G	W	2	N	x	x	x	x	x	x	
FC-CCR-MW69-91017 -13	9/10/2017	905	G	W	2	N	x	x	x	x	x	x	
FC-CCR-FD02-91017 -14	9/10/2017	905	G	W	2	N	x	x	x	x	x	x	
FC-CCR-MW70-9917 -15	9/9/2017	1746	G	W	2	N	x	x	x	x	x	x	
FC-CCR-MW71-91117 -16	9/11/2017	856	G	W	2	N	x	x	x	x	x	x	
FC-CCR-MW72-91017 -17	9/10/2017	1754	G	W	2	N	x	x	x	x	x	x	
FC-CCR-MW73-91017 -18	9/10/2017	1137	G	W	2	N	x	x	x	x	x	x	
FC-CCR-MW74-91017 -19	9/10/2017	1210	G	W	2	N	x	x	x	x	x	x	
FC-CCR-MW75-91017 -20	9/10/2017	1424	G	W	2	N	x	x	x	x	x	x	

550-89579 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

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

☐ Return to Client ☑ Disposal by Lab ☐ Archive for_____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | 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	9/12 1444			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company: TA	Date/Time: 9-12-17 1444

Login Sample Receipt Checklist

Client: Arizona Public Service Company

Job Number: 550-89579-1

Login Number: 89579
List Number: 1
Creator: Gravlin, Andrea

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.