TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

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TestAmerica Job ID: 280-86987-1
Client Project/Site: Adams County Shooting Range

For:
Quantum Water Consulting
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Attn: Mr. John Dellaport

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Authorized for release by:
9/1/2016 4:04:58 PM

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Definitions/Glossary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

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Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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: 280-86987-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: Quantum Water Consulting

Project: Adams County Shooting Range

Report Number: 280-86987-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 8/17/2016 at 1:10 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 27.8º C.

TCLP METALS

Samples ACA-1(0-3) (280-86987-1), ACA-2(0-3) (280-86987-3) and ACA-3(0-3) (280-86987-4) were analyzed for TCLP Metals in accordance with EPA SW-846 Method 1311/6010C. The samples were leached on 08/19/2016, prepared on 08/22/2016 and analyzed on 08/27/2016.

Copper and Zinc were detected in method blank LB 280-338679/1-B at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

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

TOTAL METALS (ICP)

Samples ACA-1(0-3) (280-86987-1), ACA-1(6-3) (280-86987-2), ACA-2(0-3) (280-86987-3), ACA-3(0-3) (280-86987-4) and DUPE-1-ACA (280-86987-5) were analyzed for Total Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 08/25/2016 and analyzed on 08/28/2016 and 08/31/2016.

Tin was detected in method blank MB 280-339470/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Arsenic and Tin failed the recovery criteria low for the MS of sample ACA-1(0-3) (280-86987-1) in batch 280-339861. Lead failed the recovery criteria high. Several analytes failed the recovery criteria low for the MSD of sample ACA-1(0-3) (280-86987-1) in batch 280-339861. Antimony and Lead exceeded the RPD limit. The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount. Refer to the QC report for details.

The instrument blank for analytical batch 280-339861 contained Pb greater than one-half the reporting limit (RL) and was not re-analyzed because samples were greater than 10x the concentration of the blank. The data have been qualified and reported.

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

Job ID: 280-86987-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

TOTAL MERCURY (CVAA)

Samples ACA-1(0-3) (280-86987-1), ACA-1(6-3) (280-86987-2), ACA-2(0-3) (280-86987-3), ACA-3(0-3) (280-86987-4) and DUPE-1-ACA (280-86987-5) were analyzed for total mercury (CVAA) in accordance with EPA SW-846 Method 7471B. The samples were prepared and analyzed on 08/31/2016.

Mercury was detected in method blank MB 280-339394/1-A at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

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

PERCENT SOLIDS

Samples ACA-1(0-3) (280-86987-1), ACA-1(6-3) (280-86987-2), ACA-2(0-3) (280-86987-3), ACA-3(0-3) (280-86987-4) and DUPE-1-ACA (280-86987-5) were analyzed for percent solids in accordance with ASTM D2216-90. The samples were analyzed on 08/18/2016.

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

Detection Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86987-1

Client Sample ID: ACA-1(0-3) — Lab Sample ID: 280-86987-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	9.7	F1	2.1	0.68	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.43	J	0.51	0.042	mg/Kg	1	☼	6010C	Total/NA
Lead	3100	F2	0.93	0.28	mg/Kg	1	☼	6010C	Total/NA
Antimony	25	F1 F2	1.5	0.39	mg/Kg	1	☼	6010C	Total/NA
Copper	150		2.1	0.22	mg/Kg	1	☼	6010C	Total/NA
Zinc	58	F1	3.1	0.41	mg/Kg	1	☼	6010C	Total/NA
Tin	3.4	J B F1	10	0.94	mg/Kg	1	☼	6010C	Total/NA
Antimony	0.19	J	0.20	0.016	mg/L	1		6010C	TCLP
Arsenic	0.066	J	0.50	0.022	mg/L	1		6010C	TCLP
Copper	0.31	J B	2.0	0.021	mg/L	1		6010C	TCLP
Lead	0.21	J	0.50	0.013	mg/L	1		6010C	TCLP
Zinc	0.083	J B	2.0	0.022	mg/L	1		6010C	TCLP
Mercury	40	B	20	6.4	ug/L	1	☼	7471B	Total/NA

Client Sample ID: ACA-1(6-3) — Lab Sample ID: 280-86987-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	3.6		1.8	0.60	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.47		0.45	0.037	mg/Kg	1	☼	6010C	Total/NA
Lead	370		0.81	0.24	mg/Kg	1	☼	6010C	Total/NA
Antimony	3.5		1.4	0.34	mg/Kg	1	☼	6010C	Total/NA
Copper	52		1.8	0.20	mg/Kg	1	☼	6010C	Total/NA
Zinc	52		2.7	0.36	mg/Kg	1	☼	6010C	Total/NA
Tin	2.3	J B	9.0	0.82	mg/Kg	1	☼	6010C	Total/NA
Mercury	27	B	21	6.8	ug/L	1	☼	7471B	Total/NA

Client Sample ID: ACA-2(0-3) — Lab Sample ID: 280-86987-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	3.9		1.9	0.62	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.15	J	0.47	0.039	mg/Kg	1	☼	6010C	Total/NA
Lead	200		0.85	0.26	mg/Kg	1	☼	6010C	Total/NA
Antimony	1.8		1.4	0.36	mg/Kg	1	☼	6010C	Total/NA
Copper	18		1.9	0.21	mg/Kg	1	☼	6010C	Total/NA
Zinc	40		2.8	0.38	mg/Kg	1	☼	6010C	Total/NA
Tin	3.0	J B	9.5	0.86	mg/Kg	1	☼	6010C	Total/NA
Antimony	0.51		0.20	0.016	mg/L	1		6010C	TCLP
Arsenic	0.059	J	0.50	0.022	mg/L	1		6010C	TCLP
Copper	0.028	J B	2.0	0.021	mg/L	1		6010C	TCLP
Lead	60		0.50	0.013	mg/L	1		6010C	TCLP
Zinc	0.026	J B	2.0	0.022	mg/L	1		6010C	TCLP
Mercury	24	B	18	6.0	ug/L	1	☼	7471B	Total/NA

Client Sample ID: ACA-3(0-3) — Lab Sample ID: 280-86987-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	2.8		1.4	0.47	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.16	J	0.36	0.029	mg/Kg	1	☼	6010C	Total/NA
Lead	100		0.64	0.19	mg/Kg	1	☼	6010C	Total/NA
Antimony	0.40	J	1.1	0.27	mg/Kg	1	☼	6010C	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Denver

Client Sample ID: ACA-3(0-3) (Continued) — Lab Sample ID: 280-86987-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	19		1.4	0.16	mg/Kg	1	☼	6010C	Total/NA
Zinc	39		2.1	0.28	mg/Kg	1	☼	6010C	Total/NA
Tin	1.3	J B	7.2	0.65	mg/Kg	1	☼	6010C	Total/NA
Antimony	0.044	J	0.20	0.016	mg/L	1		6010C	TCLP
Arsenic	0.025	J	0.50	0.022	mg/L	1		6010C	TCLP
Copper	0.027	J B	2.0	0.021	mg/L	1		6010C	TCLP
Lead	7.0		0.50	0.013	mg/L	1		6010C	TCLP
Zinc	0.031	J B	2.0	0.022	mg/L	1		6010C	TCLP
Mercury	44	B	20	6.6	ug/L	1	☼	7471B	Total/NA

Client Sample ID: DUPE-1-ACA — Lab Sample ID: 280-86987-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	3.5		1.5	0.48	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.39		0.36	0.030	mg/Kg	1	☼	6010C	Total/NA
Lead	2300		0.66	0.20	mg/Kg	1	☼	6010C	Total/NA
Antimony	16		1.1	0.28	mg/Kg	1	☼	6010C	Total/NA
Copper	130		1.5	0.16	mg/Kg	1	☼	6010C	Total/NA
Zinc	59		2.2	0.29	mg/Kg	1	☼	6010C	Total/NA
Tin	4.9	J B	7.3	0.66	mg/Kg	1	☼	6010C	Total/NA
Mercury	37	B	18	6.0	ug/L	1	☼	7471B	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86987-1

Method	Method Description	Protocol	Laboratory
6010C	Metals (ICP)	SW846	TAL DEN
7471B	Mercury (CVAA)	SW846	TAL DEN
Moisture	Percent Moisture	EPA	TAL DEN

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86987-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-86987-1	ACA-1(0-3)	Solid	08/17/16 09:20	08/17/16 13:10
280-86987-2	ACA-1(6-3)	Solid	08/17/16 09:35	08/17/16 13:10
280-86987-3	ACA-2(0-3)	Solid	08/17/16 09:55	08/17/16 13:10
280-86987-4	ACA-3(0-3)	Solid	08/17/16 10:35	08/17/16 13:10
280-86987-5	DUPE-1-ACA	Solid	08/17/16 00:00	08/17/16 13:10

Method: 6010C - Metals (ICP)

Client Sample ID: ACA-1(0-3)
Date Collected: 08/17/16 09:20
Date Received: 08/17/16 13:10

Lab Sample ID: 280-86987-1
Matrix: Solid
Percent Solids: 95.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	9.7	F1	2.1	0.68	mg/Kg	☼	08/25/16 14:40	08/28/16 18:21	1
Cadmium	0.43	J	0.51	0.042	mg/Kg	☼	08/25/16 14:40	08/28/16 18:21	1
Lead	3100	F2	0.93	0.28	mg/Kg	☼	08/25/16 14:40	08/28/16 18:21	1
Antimony	25	F1 F2	1.5	0.39	mg/Kg	☼	08/25/16 14:40	08/28/16 18:21	1
Copper	150		2.1	0.22	mg/Kg	☼	08/25/16 14:40	08/28/16 18:21	1
Zinc	58	F1	3.1	0.41	mg/Kg	☼	08/25/16 14:40	08/28/16 18:21	1
Tin	3.4	J B F1	10	0.94	mg/Kg	☼	08/25/16 14:40	08/28/16 18:21	1

Client Sample ID: ACA-1(6-3)
Date Collected: 08/17/16 09:35
Date Received: 08/17/16 13:10

Lab Sample ID: 280-86987-2
Matrix: Solid
Percent Solids: 90.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	3.6		1.8	0.60	mg/Kg	☼	08/25/16 14:40	08/28/16 18:34	1
Cadmium	0.47		0.45	0.037	mg/Kg	☼	08/25/16 14:40	08/28/16 18:34	1
Lead	370		0.81	0.24	mg/Kg	☼	08/25/16 14:40	08/28/16 18:34	1
Antimony	3.5		1.4	0.34	mg/Kg	☼	08/25/16 14:40	08/28/16 18:34	1
Copper	52		1.8	0.20	mg/Kg	☼	08/25/16 14:40	08/28/16 18:34	1
Zinc	52		2.7	0.36	mg/Kg	☼	08/25/16 14:40	08/28/16 18:34	1
Tin	2.3	J B	9.0	0.82	mg/Kg	☼	08/25/16 14:40	08/28/16 18:34	1

Client Sample ID: ACA-2(0-3)
Date Collected: 08/17/16 09:55
Date Received: 08/17/16 13:10

Lab Sample ID: 280-86987-3
Matrix: Solid
Percent Solids: 97.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	3.9		1.9	0.62	mg/Kg	☼	08/25/16 14:40	08/28/16 18:47	1
Cadmium	0.15	J	0.47	0.039	mg/Kg	☼	08/25/16 14:40	08/28/16 18:47	1
Lead	200		0.85	0.26	mg/Kg	☼	08/25/16 14:40	08/28/16 18:47	1
Antimony	1.8		1.4	0.36	mg/Kg	☼	08/25/16 14:40	08/28/16 18:47	1
Copper	18		1.9	0.21	mg/Kg	☼	08/25/16 14:40	08/28/16 18:47	1
Zinc	40		2.8	0.38	mg/Kg	☼	08/25/16 14:40	08/31/16 02:40	1
Tin	3.0	J B	9.5	0.86	mg/Kg	☼	08/25/16 14:40	08/28/16 18:47	1

Client Sample ID: ACA-3(0-3)
Date Collected: 08/17/16 10:35
Date Received: 08/17/16 13:10

Lab Sample ID: 280-86987-4
Matrix: Solid
Percent Solids: 96.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.8		1.4	0.47	mg/Kg	☼	08/25/16 14:40	08/28/16 18:50	1
Cadmium	0.16	J	0.36	0.029	mg/Kg	☼	08/25/16 14:40	08/28/16 18:50	1
Lead	100		0.64	0.19	mg/Kg	☼	08/25/16 14:40	08/28/16 18:50	1
Antimony	0.40	J	1.1	0.27	mg/Kg	☼	08/25/16 14:40	08/28/16 18:50	1
Copper	19		1.4	0.16	mg/Kg	☼	08/25/16 14:40	08/28/16 18:50	1
Zinc	39		2.1	0.28	mg/Kg	☼	08/25/16 14:40	08/31/16 02:42	1
Tin	1.3	J B	7.2	0.65	mg/Kg	☼	08/25/16 14:40	08/28/16 18:50	1

Client Sample ID: DUPE-1-ACA
Date Collected: 08/17/16 00:00
Date Received: 08/17/16 13:10

Lab Sample ID: 280-86987-5
Matrix: Solid
Percent Solids: 96.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	3.5		1.5	0.48	mg/Kg	☼	08/25/16 14:40	08/28/16 18:53	1
Cadmium	0.39		0.36	0.030	mg/Kg	☼	08/25/16 14:40	08/28/16 18:53	1

Method: 6010C - Metals (ICP) (Continued)

Client Sample ID: DUPE-1-ACA
Date Collected: 08/17/16 00:00
Date Received: 08/17/16 13:10

Lab Sample ID: 280-86987-5
Matrix: Solid
Percent Solids: 96.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	2300		0.66	0.20	mg/Kg	☼	08/25/16 14:40	08/28/16 18:53	1
Antimony	16		1.1	0.28	mg/Kg	☼	08/25/16 14:40	08/28/16 18:53	1
Copper	130		1.5	0.16	mg/Kg	☼	08/25/16 14:40	08/28/16 18:53	1
Zinc	59		2.2	0.29	mg/Kg	☼	08/25/16 14:40	08/31/16 02:45	1
Tin	4.9	J B	7.3	0.66	mg/Kg	☼	08/25/16 14:40	08/28/16 18:53	1

Method: 6010C - Metals (ICP) - TCLP

Client Sample ID: ACA-1(0-3)
Date Collected: 08/17/16 09:20
Date Received: 08/17/16 13:10

Lab Sample ID: 280-86987-1
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.19	J	0.20	0.016	mg/L		08/22/16 14:45	08/27/16 05:18	1
Arsenic	0.066	J	0.50	0.022	mg/L		08/22/16 14:45	08/27/16 05:18	1
Cadmium	ND		0.10	0.0020	mg/L		08/22/16 14:45	08/27/16 05:18	1
Copper	0.31	J B	2.0	0.021	mg/L		08/22/16 14:45	08/27/16 05:18	1
Lead	0.21	J	0.50	0.013	mg/L		08/22/16 14:45	08/27/16 05:18	1
Tin	ND		0.20	0.029	mg/L		08/22/16 14:45	08/27/16 05:18	1
Zinc	0.083	J B	2.0	0.022	mg/L		08/22/16 14:45	08/27/16 05:18	1

Client Sample ID: ACA-2(0-3)
Date Collected: 08/17/16 09:55
Date Received: 08/17/16 13:10

Lab Sample ID: 280-86987-3
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.51		0.20	0.016	mg/L		08/22/16 14:45	08/27/16 05:20	1
Arsenic	0.059	J	0.50	0.022	mg/L		08/22/16 14:45	08/27/16 05:20	1
Cadmium	ND		0.10	0.0020	mg/L		08/22/16 14:45	08/27/16 05:20	1
Copper	0.028	J B	2.0	0.021	mg/L		08/22/16 14:45	08/27/16 05:20	1
Lead	60		0.50	0.013	mg/L		08/22/16 14:45	08/27/16 05:20	1
Tin	ND		0.20	0.029	mg/L		08/22/16 14:45	08/27/16 05:20	1
Zinc	0.026	J B	2.0	0.022	mg/L		08/22/16 14:45	08/27/16 05:20	1

Client Sample ID: ACA-3(0-3)
Date Collected: 08/17/16 10:35
Date Received: 08/17/16 13:10

Lab Sample ID: 280-86987-4
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.044	J	0.20	0.016	mg/L		08/22/16 14:45	08/27/16 05:23	1
Arsenic	0.025	J	0.50	0.022	mg/L		08/22/16 14:45	08/27/16 05:23	1
Cadmium	ND		0.10	0.0020	mg/L		08/22/16 14:45	08/27/16 05:23	1
Copper	0.027	J B	2.0	0.021	mg/L		08/22/16 14:45	08/27/16 05:23	1
Lead	7.0		0.50	0.013	mg/L		08/22/16 14:45	08/27/16 05:23	1
Tin	ND		0.20	0.029	mg/L		08/22/16 14:45	08/27/16 05:23	1
Zinc	0.031	J B	2.0	0.022	mg/L		08/22/16 14:45	08/27/16 05:23	1

Method: 7471B - Mercury (CVAA)

Client Sample ID: ACA-1(0-3)
Date Collected: 08/17/16 09:20
Date Received: 08/17/16 13:10

Lab Sample ID: 280-86987-1
Matrix: Solid
Percent Solids: 95.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	40	B	20	6.4	ug/L	☼	08/31/16 13:15	08/31/16 16:57	1

Client Sample ID: ACA-1(6-3)
Date Collected: 08/17/16 09:35
Date Received: 08/17/16 13:10

Lab Sample ID: 280-86987-2
Matrix: Solid
Percent Solids: 90.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	27	B	21	6.8	ug/L	☼	08/31/16 13:15	08/31/16 17:03	1

Client Sample ID: ACA-2(0-3)
Date Collected: 08/17/16 09:55
Date Received: 08/17/16 13:10

Lab Sample ID: 280-86987-3
Matrix: Solid
Percent Solids: 97.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	24	B	18	6.0	ug/L	☼	08/31/16 13:15	08/31/16 17:05	1

Client Sample ID: ACA-3(0-3)
Date Collected: 08/17/16 10:35
Date Received: 08/17/16 13:10

Lab Sample ID: 280-86987-4
Matrix: Solid
Percent Solids: 96.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	44	B	20	6.6	ug/L	☼	08/31/16 13:15	08/31/16 17:07	1

Client Sample ID: DUPE-1-ACA
Date Collected: 08/17/16 00:00
Date Received: 08/17/16 13:10

Lab Sample ID: 280-86987-5
Matrix: Solid
Percent Solids: 96.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	37	B	18	6.0	ug/L	☼	08/31/16 13:15	08/31/16 17:09	1

General Chemistry

Client Sample ID: ACA-1(0-3)
Date Collected: 08/17/16 09:20
Date Received: 08/17/16 13:10

Lab Sample ID: 280-86987-1
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	4.2		0.1	0.1	%			08/18/16 11:22	1

Client Sample ID: ACA-1(6-3)
Date Collected: 08/17/16 09:35
Date Received: 08/17/16 13:10

Lab Sample ID: 280-86987-2
Matrix: Solid
Percent Solids: 90.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	9.7		0.1	0.1	%			08/18/16 11:22	1

Client Sample ID: ACA-2(0-3)
Date Collected: 08/17/16 09:55
Date Received: 08/17/16 13:10

Lab Sample ID: 280-86987-3
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	2.4		0.1	0.1	%			08/18/16 11:22	1

Client Sample ID: ACA-3(0-3)
Date Collected: 08/17/16 10:35
Date Received: 08/17/16 13:10

Lab Sample ID: 280-86987-4
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	4.0		0.1	0.1	%			08/18/16 11:22	1

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86987-1

General Chemistry

Client Sample ID: DUPE-1-ACA
Date Collected: 08/17/16 00:00
Date Received: 08/17/16 13:10

Lab Sample ID: 280-86987-5
Matrix: Solid
Percent Solids: 96.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	4.0		0.1	0.1	%			08/18/16 11:22	1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 280-339470/1-A
Matrix: Solid
Analysis Batch: 339861

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 339470

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		2.0	0.66	mg/Kg		08/25/16 14:40	08/28/16 18:15	1
Cadmium	ND		0.50	0.041	mg/Kg		08/25/16 14:40	08/28/16 18:15	1
Lead	ND		0.90	0.27	mg/Kg		08/25/16 14:40	08/28/16 18:15	1
Antimony	ND		1.5	0.38	mg/Kg		08/25/16 14:40	08/28/16 18:15	1
Copper	ND		2.0	0.22	mg/Kg		08/25/16 14:40	08/28/16 18:15	1
Zinc	ND		3.0	0.40	mg/Kg		08/25/16 14:40	08/28/16 18:15	1
Tin	1.88	J	10	0.91	mg/Kg		08/25/16 14:40	08/28/16 18:15	1

Lab Sample ID: LCS 280-339470/2-A
Matrix: Solid
Analysis Batch: 339861

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 339470

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	103		mg/Kg		103	85 - 110
Cadmium	10.0	9.81		mg/Kg		98	87 - 110
Lead	50.0	50.0		mg/Kg		100	86 - 110
Antimony	50.0	52.1		mg/Kg		104	82 - 110
Copper	25.0	26.5		mg/Kg		106	88 - 110
Zinc	50.0	48.4		mg/Kg		97	76 - 114
Tin	200	197		mg/Kg		99	84 - 110

Lab Sample ID: 280-86987-1 MS
Matrix: Solid
Analysis Batch: 339861

Client Sample ID: ACA-1(0-3)
Prep Type: Total/NA
Prep Batch: 339470

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	9.7	F1	86.1	73.8	F1	mg/Kg	☼	74	76 - 111
Cadmium	0.43	J	8.61	7.00		mg/Kg	☼	76	40 - 130
Lead	3100	F2	43.1	3450	4	mg/Kg	☼	839	70 - 200
Antimony	25	F1 F2	43.1	45.5		mg/Kg	☼	48	20 - 200
Copper	150		21.5	162	4	mg/Kg	☼	70	37 - 187
Zinc	58	F1	43.1	90.5		mg/Kg	☼	77	70 - 200
Tin	3.4	J B F1	172	128	F1	mg/Kg	☼	72	77 - 126

Lab Sample ID: 280-86987-1 MSD
Matrix: Solid
Analysis Batch: 339861

Client Sample ID: ACA-1(0-3)
Prep Type: Total/NA
Prep Batch: 339470

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	9.7	F1	84.3	69.0	F1	mg/Kg	☼	70	76 - 111	7	20
Cadmium	0.43	J	8.43	6.72		mg/Kg	☼	75	40 - 130	4	20
Lead	3100	F2	42.1	1410	4 F2	mg/Kg	☼	-3969	70 - 200	84	20
Antimony	25	F1 F2	42.1	29.2	F1 F2	mg/Kg	☼	10	20 - 200	44	20
Copper	150		21.1	157	4	mg/Kg	☼	46	37 - 187	3	20
Zinc	58	F1	42.1	84.2	F1	mg/Kg	☼	63	70 - 200	7	20
Tin	3.4	J B F1	169	123	F1	mg/Kg	☼	71	77 - 126	4	20

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LB 280-338679/1-B
Matrix: Solid
Analysis Batch: 339798

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 338786

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.50	0.022	mg/L		08/22/16 14:45	08/27/16 04:52	1
Cadmium	ND		0.10	0.0020	mg/L		08/22/16 14:45	08/27/16 04:52	1
Lead	ND		0.50	0.013	mg/L		08/22/16 14:45	08/27/16 04:52	1
Antimony	ND		0.20	0.016	mg/L		08/22/16 14:45	08/27/16 04:52	1
Copper	0.0216	J	2.0	0.021	mg/L		08/22/16 14:45	08/27/16 04:52	1
Zinc	0.0230	J	2.0	0.022	mg/L		08/22/16 14:45	08/27/16 04:52	1
Tin	ND		0.20	0.029	mg/L		08/22/16 14:45	08/27/16 04:52	1

Lab Sample ID: LCS 280-338679/2-B
Matrix: Solid
Analysis Batch: 339798

Client Sample ID: Lab Control Sample
Prep Type: TCLP
Prep Batch: 338786

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	4.00	3.74		mg/L		94	80 - 120
Cadmium	1.10	1.03		mg/L		94	80 - 120
Lead	5.50	5.09		mg/L		93	80 - 120
Antimony	0.500	0.451		mg/L		90	80 - 120
Copper	2.25	2.16		mg/L		96	80 - 120
Zinc	2.50	2.59		mg/L		104	80 - 120
Tin	2.00	1.80		mg/L		90	80 - 120

Method: 7471B - Mercury (CVAA)

Lab Sample ID: MB 280-339394/1-A
Matrix: Solid
Analysis Batch: 340414

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 339394

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	6.33	J	17	5.5	ug/L		08/31/16 13:15	08/31/16 16:48	1

Lab Sample ID: LCS 280-339394/2-A
Matrix: Solid
Analysis Batch: 340414

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 339394

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	417	393		ug/L		94	87 - 111

Lab Sample ID: 280-86987-1 MS
Matrix: Solid
Analysis Batch: 340414

Client Sample ID: ACA-1(0-3)
Prep Type: Total/NA
Prep Batch: 339394

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	40	B	474	482		ug/L	☼	93	87 - 111

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86987-1

Method: 7471B - Mercury (CVAA) (Continued)

Lab Sample ID: 280-86987-1 MSD
Matrix: Solid
Analysis Batch: 340414

Client Sample ID: ACA-1(0-3)
Prep Type: Total/NA
Prep Batch: 339394

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	40	B	512	521		ug/L	☼	94	87 - 111	8	20

QC Association Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86987-1

Metals

Leach Batch: 338679

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86987-1	ACA-1(0-3)	TCLP	Solid	1311	
280-86987-3	ACA-2(0-3)	TCLP	Solid	1311	
280-86987-4	ACA-3(0-3)	TCLP	Solid	1311	
LB 280-338679/1-B	Method Blank	TCLP	Solid	1311	
LCS 280-338679/2-B	Lab Control Sample	TCLP	Solid	1311	

Prep Batch: 338786

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86987-1	ACA-1(0-3)	TCLP	Solid	3010A	338679
280-86987-3	ACA-2(0-3)	TCLP	Solid	3010A	338679
280-86987-4	ACA-3(0-3)	TCLP	Solid	3010A	338679
LB 280-338679/1-B	Method Blank	TCLP	Solid	3010A	338679
LCS 280-338679/2-B	Lab Control Sample	TCLP	Solid	3010A	338679

Prep Batch: 339394

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86987-1	ACA-1(0-3)	Total/NA	Solid	7471B	
280-86987-2	ACA-1(6-3)	Total/NA	Solid	7471B	
280-86987-3	ACA-2(0-3)	Total/NA	Solid	7471B	
280-86987-4	ACA-3(0-3)	Total/NA	Solid	7471B	
280-86987-5	DUPE-1-ACA	Total/NA	Solid	7471B	
MB 280-339394/1-A	Method Blank	Total/NA	Solid	7471B	
LCS 280-339394/2-A	Lab Control Sample	Total/NA	Solid	7471B	
280-86987-1 MS	ACA-1(0-3)	Total/NA	Solid	7471B	
280-86987-1 MSD	ACA-1(0-3)	Total/NA	Solid	7471B	

Prep Batch: 339470

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86987-1	ACA-1(0-3)	Total/NA	Solid	3050B	
280-86987-2	ACA-1(6-3)	Total/NA	Solid	3050B	
280-86987-3	ACA-2(0-3)	Total/NA	Solid	3050B	
280-86987-4	ACA-3(0-3)	Total/NA	Solid	3050B	
280-86987-5	DUPE-1-ACA	Total/NA	Solid	3050B	
MB 280-339470/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 280-339470/2-A	Lab Control Sample	Total/NA	Solid	3050B	
280-86987-1 MS	ACA-1(0-3)	Total/NA	Solid	3050B	
280-86987-1 MSD	ACA-1(0-3)	Total/NA	Solid	3050B	

Analysis Batch: 339798

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86987-1	ACA-1(0-3)	TCLP	Solid	6010C	338786
280-86987-3	ACA-2(0-3)	TCLP	Solid	6010C	338786
280-86987-4	ACA-3(0-3)	TCLP	Solid	6010C	338786
LB 280-338679/1-B	Method Blank	TCLP	Solid	6010C	338786
LCS 280-338679/2-B	Lab Control Sample	TCLP	Solid	6010C	338786

Analysis Batch: 339861

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86987-1	ACA-1(0-3)	Total/NA	Solid	6010C	339470
280-86987-2	ACA-1(6-3)	Total/NA	Solid	6010C	339470
280-86987-3	ACA-2(0-3)	Total/NA	Solid	6010C	339470

Metals (Continued)

Analysis Batch: 339861 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86987-4	ACA-3(0-3)	Total/NA	Solid	6010C	339470
280-86987-5	DUPE-1-ACA	Total/NA	Solid	6010C	339470
MB 280-339470/1-A	Method Blank	Total/NA	Solid	6010C	339470
LCS 280-339470/2-A	Lab Control Sample	Total/NA	Solid	6010C	339470
280-86987-1 MS	ACA-1(0-3)	Total/NA	Solid	6010C	339470
280-86987-1 MSD	ACA-1(0-3)	Total/NA	Solid	6010C	339470

Analysis Batch: 340244

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86987-3	ACA-2(0-3)	Total/NA	Solid	6010C	339470
280-86987-4	ACA-3(0-3)	Total/NA	Solid	6010C	339470
280-86987-5	DUPE-1-ACA	Total/NA	Solid	6010C	339470

Analysis Batch: 340414

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86987-1	ACA-1(0-3)	Total/NA	Solid	7471B	339394
280-86987-2	ACA-1(6-3)	Total/NA	Solid	7471B	339394
280-86987-3	ACA-2(0-3)	Total/NA	Solid	7471B	339394
280-86987-4	ACA-3(0-3)	Total/NA	Solid	7471B	339394
280-86987-5	DUPE-1-ACA	Total/NA	Solid	7471B	339394
MB 280-339394/1-A	Method Blank	Total/NA	Solid	7471B	339394
LCS 280-339394/2-A	Lab Control Sample	Total/NA	Solid	7471B	339394
280-86987-1 MS	ACA-1(0-3)	Total/NA	Solid	7471B	339394
280-86987-1 MSD	ACA-1(0-3)	Total/NA	Solid	7471B	339394

General Chemistry

Analysis Batch: 338453

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86987-1	ACA-1(0-3)	Total/NA	Solid	Moisture	
280-86987-2	ACA-1(6-3)	Total/NA	Solid	Moisture	
280-86987-3	ACA-2(0-3)	Total/NA	Solid	Moisture	
280-86987-4	ACA-3(0-3)	Total/NA	Solid	Moisture	
280-86987-5	DUPE-1-ACA	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86987-1

Client Sample ID: ACA-1(0-3)
Date Collected: 08/17/16 09:20
Date Received: 08/17/16 13:10

Lab Sample ID: 280-86987-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			1.0 g	1.0 mL	338679	08/19/16 11:55	MAV	TAL DEN
TCLP	Prep	3010A			10 mL	50 mL	338786	08/22/16 14:45	SUR	TAL DEN
TCLP	Analysis	6010C		1			339798	08/27/16 05:18	CRR	TAL DEN
Total/NA	Analysis	Moisture		1			338453	08/18/16 11:22	IEU	TAL DEN

Client Sample ID: ACA-1(0-3)
Date Collected: 08/17/16 09:20
Date Received: 08/17/16 13:10

Lab Sample ID: 280-86987-1
Matrix: Solid
Percent Solids: 95.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.014 g	100 mL	339470	08/25/16 14:40	MLS	TAL DEN
Total/NA	Analysis	6010C		1			339861	08/28/16 18:21	CMK	TAL DEN
Total/NA	Prep	7471B			0.54 g	50 mL	339394	08/31/16 13:15	CDH	TAL DEN
Total/NA	Analysis	7471B		1			340414	08/31/16 16:57	CDH	TAL DEN

Client Sample ID: ACA-1(6-3)
Date Collected: 08/17/16 09:35
Date Received: 08/17/16 13:10

Lab Sample ID: 280-86987-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			338453	08/18/16 11:22	IEU	TAL DEN

Client Sample ID: ACA-1(6-3)
Date Collected: 08/17/16 09:35
Date Received: 08/17/16 13:10

Lab Sample ID: 280-86987-2
Matrix: Solid
Percent Solids: 90.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.228 g	100 mL	339470	08/25/16 14:40	MLS	TAL DEN
Total/NA	Analysis	6010C		1			339861	08/28/16 18:34	CMK	TAL DEN
Total/NA	Prep	7471B			0.54 g	50 mL	339394	08/31/16 13:15	CDH	TAL DEN
Total/NA	Analysis	7471B		1			340414	08/31/16 17:03	CDH	TAL DEN

Client Sample ID: ACA-2(0-3)
Date Collected: 08/17/16 09:55
Date Received: 08/17/16 13:10

Lab Sample ID: 280-86987-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			1.0 g	1.0 mL	338679	08/19/16 11:55	MAV	TAL DEN
TCLP	Prep	3010A			10 mL	50 mL	338786	08/22/16 14:45	SUR	TAL DEN
TCLP	Analysis	6010C		1			339798	08/27/16 05:20	CRR	TAL DEN
Total/NA	Analysis	Moisture		1			338453	08/18/16 11:22	IEU	TAL DEN

Lab Chronicle

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86987-1

Client Sample ID: ACA-2(0-3)
Date Collected: 08/17/16 09:55
Date Received: 08/17/16 13:10

Lab Sample ID: 280-86987-3
Matrix: Solid
Percent Solids: 97.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.083 g	100 mL	339470	08/25/16 14:40	MLS	TAL DEN
Total/NA	Analysis	6010C		1			339861	08/28/16 18:47	CMK	TAL DEN
Total/NA	Prep	3050B			1.083 g	100 mL	339470	08/25/16 14:40	MLS	TAL DEN
Total/NA	Analysis	6010C		1			340244	08/31/16 02:40	CMK	TAL DEN
Total/NA	Prep	7471B			0.57 g	50 mL	339394	08/31/16 13:15	CDH	TAL DEN
Total/NA	Analysis	7471B		1			340414	08/31/16 17:05	CDH	TAL DEN

Client Sample ID: ACA-3(0-3)
Date Collected: 08/17/16 10:35
Date Received: 08/17/16 13:10

Lab Sample ID: 280-86987-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			1.0 g	1.0 mL	338679	08/19/16 11:55	MAV	TAL DEN
TCLP	Prep	3010A			10 mL	50 mL	338786	08/22/16 14:45	SUR	TAL DEN
TCLP	Analysis	6010C		1			339798	08/27/16 05:23	CRR	TAL DEN
Total/NA	Analysis	Moisture		1			338453	08/18/16 11:22	IEU	TAL DEN

Client Sample ID: ACA-3(0-3)
Date Collected: 08/17/16 10:35
Date Received: 08/17/16 13:10

Lab Sample ID: 280-86987-4
Matrix: Solid
Percent Solids: 96.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.455 g	100 mL	339470	08/25/16 14:40	MLS	TAL DEN
Total/NA	Analysis	6010C		1			339861	08/28/16 18:50	CMK	TAL DEN
Total/NA	Prep	3050B			1.455 g	100 mL	339470	08/25/16 14:40	MLS	TAL DEN
Total/NA	Analysis	6010C		1			340244	08/31/16 02:42	CMK	TAL DEN
Total/NA	Prep	7471B			0.52 g	50 mL	339394	08/31/16 13:15	CDH	TAL DEN
Total/NA	Analysis	7471B		1			340414	08/31/16 17:07	CDH	TAL DEN

Client Sample ID: DUPE-1-ACA
Date Collected: 08/17/16 00:00
Date Received: 08/17/16 13:10

Lab Sample ID: 280-86987-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			338453	08/18/16 11:22	IEU	TAL DEN

Client Sample ID: DUPE-1-ACA
Date Collected: 08/17/16 00:00
Date Received: 08/17/16 13:10

Lab Sample ID: 280-86987-5
Matrix: Solid
Percent Solids: 96.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.430 g	100 mL	339470	08/25/16 14:40	MLS	TAL DEN
Total/NA	Analysis	6010C		1			339861	08/28/16 18:53	CMK	TAL DEN

Lab Chronicle

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86987-1

Client Sample ID: DUPE-1-ACA

Date Collected: 08/17/16 00:00
Date Received: 08/17/16 13:10

Lab Sample ID: 280-86987-5

Matrix: Solid
Percent Solids: 96.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.430 g	100 mL	339470	08/25/16 14:40	MLS	TAL DEN
Total/NA	Analysis	6010C		1			340244	08/31/16 02:45	CMK	TAL DEN
Total/NA	Prep	7471B			0.58 g	50 mL	339394	08/31/16 13:15	CDH	TAL DEN
Total/NA	Analysis	7471B		1			340414	08/31/16 17:09	CDH	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Certification Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86987-1

Laboratory: TestAmerica Denver

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Oregon	NELAP	10	4025	01-09-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
Moisture		Solid	Percent Moisture

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: J. Lammers	Lab PM: Kupper, Stephanie K	Carrier Tracking No(s):	COC No: 280-54830-19558.1
Client Contact: Mr. John Dellaport	Phone: 720-810-2194	E-Mail: stephanie.kupper@testamericainc.com		Page: Page 1 of 1
Company: Quantum Water & Environment				Job #:
Address: 1746 Cole Boulevard, Suite 340	Due Date Requested:			
City: Lakewood	TAT Requested (days):			
State, Zip: CO, 80401				
Phone: 720-524-4294(Tel)	PO #:			
Email: John@quantumwaterco.com	WO #:			
Project Name: Adams County Shooting Range	Project #: 28014702			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B - HSL Analyte list (CLP) full spike	RCRA 8 metals *	TCLP *	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	A	N		
ACA-1 (0-3)	8.17.16	0920	G	S	N	N		X	X	2	* Lead, arthmony,
ACA-1 (6-9)		0935	G	S	N	N		X		1	arsenic, cadmium,
ACA-2 (0-3)		0955	G	S	N	N		X	X	3	Copper, tin, zinc
ACA-3 (0-3)		1035	G	S	N	N		X	X	3	
DUPE-1-ACA	8.17.16	—	G	S	N	N		X			

280-86987 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
	8.17.16/1310			8/17/16 1310	TAD
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 27.8+0.0 IR#5 Transferred by DW 8/17/16

9/1/2016

Login Sample Receipt Checklist

Client: Quantum Water Consulting

Job Number: 280-86987-1

Login Number: 86987
List Number: 1
Creator: White, Denise E

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
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.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Appendix F5 - Laboratory Analysis Reports - Sediment and Explosives Sampling Results

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

TestAmerica Job ID: 280-86822-1
Client Project/Site: Adams County Shooting Range
Revision: 1

For:
Quantum Water Consulting
1746 Cole Blvd
Suite 340
Lakewood, Colorado 80401

Attn: Mr. John Dellaport

Stephanie Rothmeyer

Authorized for release by:
11/2/2016 3:08:29 PM

Stephanie Rothmeyer, Project Manager I
(303)736-0182
stephanie.rothmeyer@testamericainc.com

Table of Contents

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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: 280-86822-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: Quantum Water Consulting

Project: Adams County Shooting Range

Report Number: 280-86822-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

REVISION 1 CHANGES
The units for Mercury are corrected.

RECEIPT
The samples were received on 8/11/2016 at 3:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.5º C.

No sample time was listed on the COC for DUPE-EXP; the container showed a time of 12:35.

VOLATILE ORGANIC COMPOUNDS (GC-MS)
Samples AC-SED-01-0.005 (280-86822-4), AC-SED-02-0.005 (280-86822-5), AC-SED-03-0.005 (280-86822-6) and DUPE-SED (280-86822-11) were analyzed for volatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 08/18/2016.

Methylene Chloride was detected in method blank MB 280-338552/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

The laboratory control sample duplicate (LCSD) for preparation batch 280-338552 and analytical batch 280-338344 recovered outside control limits for Bromomethane. This analyte was biased high in the LCSD and was not detected in the associated samples; therefore, the data have been reported.

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

SEMIVOLATILE ORGANIC COMPOUNDS (GC-MS)
Samples AC-SED-01-0.005 (280-86822-4), AC-SED-02-0.005 (280-86822-5), AC-SED-03-0.005 (280-86822-6) and DUPE-SED (280-86822-11) were analyzed for semivolatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8270C. The samples were prepared on 08/24/2016 and analyzed on 08/29/2016.

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

CHLORINATED PESTICIDES
Samples AC-SED-01-0.005 (280-86822-4), AC-SED-02-0.005 (280-86822-5), AC-SED-03-0.005 (280-86822-6) and DUPE-SED (280-86822-11) were analyzed for chlorinated pesticides in accordance with EPA SW-846 Method 8081B. The samples were prepared on

Job ID: 280-86822-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

08/23/2016 and analyzed on 09/07/2016.

DCB Decachlorobiphenyl failed the surrogate recovery criteria low for DUPE-SED (280-86822-11), AC-SED-01-0.005 (280-86822-4), AC-SED-02-0.005 (280-86822-5), AC-SED-03-0.005 (280-86822-6). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

The following samples required a Florisil clean-up, via EPA Method 3620B, to reduce matrix interferences: AC-SED-01-0.005 (280-86822-4), AC-SED-02-0.005 (280-86822-5), AC-SED-03-0.005 (280-86822-6), DUPE-SED (280-86822-11).

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

POLYCHLORINATED BIPHENYLS (PCBS)

Samples AC-SED-01-0.005 (280-86822-4), AC-SED-02-0.005 (280-86822-5), AC-SED-03-0.005 (280-86822-6) and DUPE-SED (280-86822-11) were analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA SW-846 Method 8082A. The samples were prepared on 08/23/2016 and analyzed on 09/02/2016.

The following samples underwent a sulfuric acid clean-up, via EPA Method 3665A, to reduce matrix interferences: AC-SED-01-0.005 (280-86822-4), AC-SED-02-0.005 (280-86822-5), AC-SED-03-0.005 (280-86822-6), DUPE-SED (280-86822-11), (LCS 280-339106/4-A), (MB 280-339106/1-A), (280-86822-A-5-D MS), (280-86822-A-5-E MSD).

The initial aliquot and surrogate aliquot used for extraction of the following samples was split between two extraction vessels with the routine volume of solvent added to each vessel: AC-SED-03-0.005 (280-86822-6). After the extraction, the extracts from both vessels were combined and concentrated. This was done due to sample aliquot could not fit in one tube with sufficient room for solvent.

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

CHLORINATED HERBICIDES

Samples AC-SED-01-0.005 (280-86822-4), AC-SED-02-0.005 (280-86822-5), AC-SED-03-0.005 (280-86822-6) and DUPE-SED (280-86822-11) were analyzed for chlorinated herbicides in accordance with EPA SW-846 Method 8151A. The samples were prepared on 08/19/2016 and analyzed on 08/23/2016.

TestAmerica Denver's practice for the reporting of dual column data in packages requiring forms and/or raw data is to report the surrogates from both columns, and the preferred result for any given target analyte from the analyst selected column. Analytes 2,4-DB/dinoseb co-elute on one of the columns used for this analysis.

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

NITROAROMATICS AND NITRAMINES (HPLC)

Samples AC-EXP-RO (280-86822-1), AC-EXP-BD (280-86822-2) and DUPE-EXP (280-86822-3) were analyzed for Nitroaromatics and Nitramines (HPLC) in accordance with SW846 8330B. The samples were leached on 08/17/2016, prepared on 08/22/2016 and analyzed on 08/27/2016.

HMX was detected in method blank MB 280-338903/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

4-Amino-2,6-dinitrotoluene failed the recovery criteria low for the MS and MSD of sample DUPE-EXP (280-86822-3) in batch 280-339739. Refer to the QC report for details.

The following samples were air dried and sieved per the procedure; however, the samples contained material that would not pass through the sieve: AC-EXP-RO (280-86822-1), AC-EXP-BD (280-86822-2), DUPE-EXP (280-86822-3). This material was removed and not extracted. The material appeared to be rocks and or vegetation.

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

Job ID: 280-86822-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

TOTAL METALS (ICP)

Samples AC-SED-01-0.005 (280-86822-4), AC-SED-02-0.005 (280-86822-5), AC-SED-03-0.005 (280-86822-6), AC-SED-04-0.005 (280-86822-7), AC-SED-05-0.005 (280-86822-8), AC-SED-06-0.005 (280-86822-9), AC-SED-07-0.005 (280-86822-10) and DUPE-SED (280-86822-11) were analyzed for Total Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 08/23/2016 and analyzed on 08/27/2016.

Barium, Chromium and Zinc were detected in method blank MB 280-338838/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Tin failed the recovery criteria low for the MSD of sample AC-SED-01-0.005 (280-86822-4) in batch 280-339852. Several analytes exceeded the RPD limit. Refer to the QC report for details.

The following sample could not be thoroughly homogenized before sub-sampling was performed due to sample matrix: AC-SED-03-0.005 (280-86822-6). The sample was too hard packed to break apart.

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

TOTAL MERCURY (CVAA)

Samples AC-SED-01-0.005 (280-86822-4), AC-SED-02-0.005 (280-86822-5), AC-SED-03-0.005 (280-86822-6) and DUPE-SED (280-86822-11) were analyzed for total mercury (CVAA) in accordance with EPA SW-846 Method 7471B. The samples were prepared and analyzed on 08/25/2016.

Mercury exceeded the RPD limit for the MSD of sample AC-SED-01-0.005 (280-86822-4) in batch 280-339690. Refer to the QC report for details.

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

PERCENT SOLIDS

Samples AC-EXP-RO (280-86822-1), AC-EXP-BD (280-86822-2), DUPE-EXP (280-86822-3), AC-SED-01-0.005 (280-86822-4), AC-SED-02-0.005 (280-86822-5), AC-SED-03-0.005 (280-86822-6), AC-SED-04-0.005 (280-86822-7), AC-SED-05-0.005 (280-86822-8), AC-SED-06-0.005 (280-86822-9), AC-SED-07-0.005 (280-86822-10) and DUPE-SED (280-86822-11) were analyzed for percent solids in accordance with ASTM D2216-90. The samples were analyzed on 08/16/2016.

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

Detection Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86822-1

Client Sample ID: AC-EXP-RO — Lab Sample ID: 280-86822-1

No Detections.

Client Sample ID: AC-EXP-BD — Lab Sample ID: 280-86822-2

No Detections.

Client Sample ID: DUPE-EXP — Lab Sample ID: 280-86822-3

No Detections.

Client Sample ID: AC-SED-01-0.005 — Lab Sample ID: 280-86822-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methylene Chloride	3.9	J B	6.0	1.9	ug/Kg	1	☼	8260B	Total/NA
Bis(2-ethylhexyl) phthalate	48	J	340	48	ug/Kg	1	☼	8270C	Total/NA
Endrin ketone	0.74	J p	1.7	0.49	ug/Kg	1	☼	8081B	Total/NA
Arsenic	6.3	F2	1.8	0.59	mg/Kg	1	☼	6010C	Total/NA
Barium	150	B	0.89	0.068	mg/Kg	1	☼	6010C	Total/NA
Cadmium	1.7	F2	0.45	0.037	mg/Kg	1	☼	6010C	Total/NA
Chromium	13	B	1.3	0.052	mg/Kg	1	☼	6010C	Total/NA
Lead	28		0.80	0.24	mg/Kg	1	☼	6010C	Total/NA
Selenium	1.0	J F2	1.3	0.77	mg/Kg	1	☼	6010C	Total/NA
Mercury	0.022	F2	0.021	0.0070	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: AC-SED-02-0.005 — Lab Sample ID: 280-86822-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methylene Chloride	7.7	B	5.5	1.8	ug/Kg	1	☼	8260B	Total/NA
Arsenic	6.1		1.6	0.53	mg/Kg	1	☼	6010C	Total/NA
Barium	130	B	0.80	0.061	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.46		0.40	0.033	mg/Kg	1	☼	6010C	Total/NA
Chromium	10	B	1.2	0.047	mg/Kg	1	☼	6010C	Total/NA
Lead	25		0.72	0.22	mg/Kg	1	☼	6010C	Total/NA
Mercury	0.024		0.021	0.0067	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: AC-SED-03-0.005 — Lab Sample ID: 280-86822-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methylene Chloride	8.5	B	6.7	2.2	ug/Kg	1	☼	8260B	Total/NA
Arsenic	8.9		1.8	0.58	mg/Kg	1	☼	6010C	Total/NA
Barium	120	B	0.88	0.067	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.39	J	0.44	0.036	mg/Kg	1	☼	6010C	Total/NA
Chromium	13	B	1.3	0.051	mg/Kg	1	☼	6010C	Total/NA
Lead	38		0.79	0.24	mg/Kg	1	☼	6010C	Total/NA
Mercury	0.041		0.019	0.0062	mg/Kg	1	☼	7471B	Total/NA

Client Sample ID: AC-SED-04-0.005 — Lab Sample ID: 280-86822-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	4.4		1.4	0.47	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.31	J	0.36	0.029	mg/Kg	1	☼	6010C	Total/NA
Copper	24		1.4	0.16	mg/Kg	1	☼	6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: AC-SED-04-0.005 (Continued) — Lab Sample ID: 280-86822-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Tin	1.4	J	7.2	0.66	mg/Kg	1	☼	6010C	Total/NA
Zinc	82	B	2.2	0.29	mg/Kg	1	☼	6010C	Total/NA
Lead	140		0.65	0.19	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: AC-SED-05-0.005 — Lab Sample ID: 280-86822-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	6.3		2.0	0.64	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.34	J	0.49	0.040	mg/Kg	1	☼	6010C	Total/NA
Copper	33		2.0	0.21	mg/Kg	1	☼	6010C	Total/NA
Tin	2.9	J	9.8	0.89	mg/Kg	1	☼	6010C	Total/NA
Zinc	91	B	2.9	0.39	mg/Kg	1	☼	6010C	Total/NA
Lead	350		0.88	0.26	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: AC-SED-06-0.005 — Lab Sample ID: 280-86822-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	2.4		1.9	0.64	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.29	J	0.48	0.040	mg/Kg	1	☼	6010C	Total/NA
Copper	76		1.9	0.21	mg/Kg	1	☼	6010C	Total/NA
Tin	2.1	J	9.7	0.88	mg/Kg	1	☼	6010C	Total/NA
Zinc	140	B	2.9	0.39	mg/Kg	1	☼	6010C	Total/NA
Antimony	2.7		1.5	0.37	mg/Kg	1	☼	6010C	Total/NA
Lead	670		0.87	0.26	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: AC-SED-07-0.005 — Lab Sample ID: 280-86822-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	8.4		2.0	0.65	mg/Kg	1	☼	6010C	Total/NA
Cadmium	1.0		0.49	0.040	mg/Kg	1	☼	6010C	Total/NA
Copper	420		2.0	0.21	mg/Kg	1	☼	6010C	Total/NA
Tin	11		9.8	0.89	mg/Kg	1	☼	6010C	Total/NA
Zinc	130	B	2.9	0.39	mg/Kg	1	☼	6010C	Total/NA
Antimony	21		1.5	0.37	mg/Kg	1	☼	6010C	Total/NA
Lead	6200		0.88	0.26	mg/Kg	1	☼	6010C	Total/NA

Client Sample ID: DUPE-SED — Lab Sample ID: 280-86822-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloroform	0.42	J	10	0.30	ug/Kg	1	☼	8260B	Total/NA
Methylene Chloride	4.5	J B	5.2	1.7	ug/Kg	1	☼	8260B	Total/NA
Arsenic	6.3		1.6	0.54	mg/Kg	1	☼	6010C	Total/NA
Barium	130	B	0.82	0.062	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.41		0.41	0.033	mg/Kg	1	☼	6010C	Total/NA
Chromium	10	B	1.2	0.047	mg/Kg	1	☼	6010C	Total/NA
Lead	27		0.73	0.22	mg/Kg	1	☼	6010C	Total/NA
Mercury	0.028		0.019	0.0063	mg/Kg	1	☼	7471B	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86822-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL DEN
8270C	Semivolatile Organic Compounds (GC/MS)	SW846	TAL DEN
8081B	Organochlorine Pesticides (GC)	SW846	TAL DEN
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL DEN
8151A	Herbicides (GC)	SW846	TAL SAV
8330B	Nitroaromatics and Nitramines (HPLC)	SW846	TAL DEN
6010C	Metals (ICP)	SW846	TAL DEN
7471B	Mercury (CVAA)	SW846	TAL DEN
Moisture	Percent Moisture	EPA	TAL DEN

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Sample Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86822-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-86822-1	AC-EXP-RO	Solid	08/11/16 12:34	08/11/16 15:30
280-86822-2	AC-EXP-BD	Solid	08/11/16 12:35	08/11/16 15:30
280-86822-3	DUPE-EXP	Solid	08/11/16 00:00	08/11/16 15:30
280-86822-4	AC-SED-01-0.005	Solid	08/11/16 12:55	08/11/16 15:30
280-86822-5	AC-SED-02-0.005	Solid	08/11/16 13:50	08/11/16 15:30
280-86822-6	AC-SED-03-0.005	Solid	08/11/16 14:10	08/11/16 15:30
280-86822-7	AC-SED-04-0.005	Solid	08/11/16 13:35	08/11/16 15:30
280-86822-8	AC-SED-05-0.005	Solid	08/11/16 13:35	08/11/16 15:30
280-86822-9	AC-SED-06-0.005	Solid	08/11/16 13:15	08/11/16 15:30
280-86822-10	AC-SED-07-0.005	Solid	08/11/16 13:20	08/11/16 15:30
280-86822-11	DUPE-SED	Solid	08/11/16 00:00	08/11/16 15:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: AC-SED-01-0.005
Date Collected: 08/11/16 12:55
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-4
Matrix: Solid
Percent Solids: 93.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		24	6.5	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
2-Butanone (MEK)	ND		24	2.2	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
Benzene	ND		6.0	0.56	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
Chlorobenzene	ND		6.0	0.65	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
Carbon disulfide	ND		6.0	0.50	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
Carbon tetrachloride	ND		6.0	0.76	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
Cyclohexane	ND		6.0	0.48	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
1,2-Dibromo-3-Chloropropane	ND		12	0.72	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
Bromomethane	ND	*	12	0.60	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
Bromoform	ND		6.0	0.28	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
Chloroethane	ND		12	1.1	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
Chloroform	ND		12	0.35	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
Chlorobromomethane	ND		6.0	0.36	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
Dichlorobromomethane	ND		6.0	0.26	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
Chlorodibromomethane	ND		6.0	0.68	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
Isopropylbenzene	ND		6.0	0.71	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
2-Hexanone	ND		24	5.9	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
Chloromethane	ND		12	0.92	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
Dichlorodifluoromethane	ND		12	0.62	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
trans-1,2-Dichloroethene	ND		3.0	0.47	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
trans-1,3-Dichloropropene	ND		6.0	0.80	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
Methylene Chloride	**3.9**	**J B**	6.0	1.9	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
Methyl acetate	ND		12	3.3	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
Methyl tert-butyl ether	ND		24	0.41	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
4-Methyl-2-pentanone (MIBK)	ND		24	5.2	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
Methylcyclohexane	ND		6.0	0.50	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
Styrene	ND		6.0	0.76	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
1,1,2,2-Tetrachloroethane	ND		6.0	0.73	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
1,2,3-Trichlorobenzene	ND		6.0	0.90	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
1,2,4-Trichlorobenzene	ND		6.0	0.88	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
Toluene	ND		6.0	0.83	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
1,1,1-Trichloroethane	ND		6.0	0.62	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
1,1,2-Trichloroethane	ND		6.0	1.1	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
Trichloroethene	ND		6.0	0.28	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
1,1,2-Trichlorotrifluoroethane	ND		24	0.54	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
Vinyl chloride	ND		6.0	1.6	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
m-Xylene & p-Xylene	ND		3.0	1.2	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
o-Xylene	ND		3.0	0.73	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
Tetrachloroethene	ND		6.0	0.71	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
1,2-Dichlorobenzene	ND		6.0	0.54	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
1,3-Dichlorobenzene	ND		6.0	0.58	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
1,4-Dichlorobenzene	ND		6.0	0.94	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
cis-1,2-Dichloroethene	ND		3.0	0.67	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
cis-1,3-Dichloropropene	ND		6.0	1.5	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
1,1-Dichloroethane	ND		6.0	0.25	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
1,1-Dichloroethene	ND		6.0	0.71	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
1,2-Dichloroethane	ND		6.0	0.84	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
1,2-Dichloropropane	ND		6.0	0.66	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
1,4-Dioxane	ND		600	67	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: AC-SED-01-0.005
Date Collected: 08/11/16 12:55
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-4
Matrix: Solid
Percent Solids: 93.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		6.0	0.80	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
1,2-Dibromoethane	ND		6.0	0.62	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1
Trichlorofluoromethane	ND		12	1.2	ug/Kg	☼	08/18/16 12:00	08/18/16 21:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*116*		*58 - 140*	*08/18/16 12:00*	*08/18/16 21:34*	*1*
Toluene-d8 (Surr)	*101*		*80 - 126*	*08/18/16 12:00*	*08/18/16 21:34*	*1*
4-Bromofluorobenzene (Surr)	*99*		*76 - 127*	*08/18/16 12:00*	*08/18/16 21:34*	*1*
Dibromofluoromethane (Surr)	*105*		*75 - 121*	*08/18/16 12:00*	*08/18/16 21:34*	*1*

Client Sample ID: AC-SED-02-0.005
Date Collected: 08/11/16 13:50
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-5
Matrix: Solid
Percent Solids: 95.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		22	5.9	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
2-Butanone (MEK)	ND		22	2.0	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
Benzene	ND		5.5	0.52	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
Chlorobenzene	ND		5.5	0.60	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
Carbon disulfide	ND		5.5	0.46	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
Carbon tetrachloride	ND		5.5	0.70	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
Cyclohexane	ND		5.5	0.44	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
1,2-Dibromo-3-Chloropropane	ND		11	0.66	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
Bromomethane	ND	*	11	0.55	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
Bromoform	ND		5.5	0.25	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
Chloroethane	ND		11	0.98	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
Chloroform	ND		11	0.32	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
Chlorobromomethane	ND		5.5	0.33	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
Dichlorobromomethane	ND		5.5	0.24	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
Chlorodibromomethane	ND		5.5	0.63	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
Isopropylbenzene	ND		5.5	0.65	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
2-Hexanone	ND		22	5.4	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
Chloromethane	ND		11	0.85	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
Dichlorodifluoromethane	ND		11	0.57	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
trans-1,2-Dichloroethene	ND		2.8	0.43	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
trans-1,3-Dichloropropene	ND		5.5	0.74	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
Methylene Chloride	**7.7**	**B**	5.5	1.8	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
Methyl acetate	ND		11	3.0	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
Methyl tert-butyl ether	ND		22	0.38	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
4-Methyl-2-pentanone (MIBK)	ND		22	4.8	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
Methylcyclohexane	ND		5.5	0.46	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
Styrene	ND		5.5	0.70	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
1,1,2,2-Tetrachloroethane	ND		5.5	0.67	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
1,2,3-Trichlorobenzene	ND		5.5	0.83	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
1,2,4-Trichlorobenzene	ND		5.5	0.81	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
Toluene	ND		5.5	0.76	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
1,1,1-Trichloroethane	ND		5.5	0.57	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
1,1,2-Trichloroethane	ND		5.5	0.97	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
Trichloroethene	ND		5.5	0.25	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
1,1,2-Trichlorotrifluoroethane	ND		22	0.50	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
Vinyl chloride	ND		5.5	1.5	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: AC-SED-02-0.005
Date Collected: 08/11/16 13:50
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-5
Matrix: Solid
Percent Solids: 95.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Xylene & p-Xylene	ND		2.8	1.1	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
o-Xylene	ND		2.8	0.67	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
Tetrachloroethene	ND		5.5	0.65	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
1,2-Dichlorobenzene	ND		5.5	0.50	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
1,3-Dichlorobenzene	ND		5.5	0.53	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
1,4-Dichlorobenzene	ND		5.5	0.86	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
cis-1,2-Dichloroethene	ND		2.8	0.62	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
cis-1,3-Dichloropropene	ND		5.5	1.4	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
1,1-Dichloroethane	ND		5.5	0.23	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
1,1-Dichloroethene	ND		5.5	0.65	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
1,2-Dichloroethane	ND		5.5	0.77	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
1,2-Dichloropropane	ND		5.5	0.61	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
1,4-Dioxane	ND		550	62	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
Ethylbenzene	ND		5.5	0.74	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
1,2-Dibromoethane	ND		5.5	0.57	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1
Trichlorofluoromethane	ND		11	1.1	ug/Kg	☼	08/18/16 12:00	08/18/16 21:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*111*		*58 - 140*	*08/18/16 12:00*	*08/18/16 21:54*	*1*
Toluene-d8 (Surr)	*103*		*80 - 126*	*08/18/16 12:00*	*08/18/16 21:54*	*1*
4-Bromofluorobenzene (Surr)	*101*		*76 - 127*	*08/18/16 12:00*	*08/18/16 21:54*	*1*
Dibromofluoromethane (Surr)	*104*		*75 - 121*	*08/18/16 12:00*	*08/18/16 21:54*	*1*

Client Sample ID: AC-SED-03-0.005
Date Collected: 08/11/16 14:10
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-6
Matrix: Solid
Percent Solids: 91.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		27	7.3	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
2-Butanone (MEK)	ND		27	2.5	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
Benzene	ND		6.7	0.63	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
Chlorobenzene	ND		6.7	0.73	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
Carbon disulfide	ND		6.7	0.57	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
Carbon tetrachloride	ND		6.7	0.85	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
Cyclohexane	ND		6.7	0.54	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
1,2-Dibromo-3-Chloropropane	ND		13	0.81	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
Bromomethane	ND	*	13	0.67	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
Bromoform	ND		6.7	0.31	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
Chloroethane	ND		13	1.2	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
Chloroform	ND		13	0.39	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
Chlorobromomethane	ND		6.7	0.40	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
Dichlorobromomethane	ND		6.7	0.30	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
Chlorodibromomethane	ND		6.7	0.77	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
Isopropylbenzene	ND		6.7	0.80	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
2-Hexanone	ND		27	6.6	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
Chloromethane	ND		13	1.0	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
Dichlorodifluoromethane	ND		13	0.70	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
trans-1,2-Dichloroethene	ND		3.4	0.53	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
trans-1,3-Dichloropropene	ND		6.7	0.90	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
Methylene Chloride	**8.5**	**B**	6.7	2.2	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
Methyl acetate	ND		13	3.7	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: AC-SED-03-0.005
Date Collected: 08/11/16 14:10
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-6
Matrix: Solid
Percent Solids: 91.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		27	0.46	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
4-Methyl-2-pentanone (MIBK)	ND		27	5.9	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
Methylcyclohexane	ND		6.7	0.57	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
Styrene	ND		6.7	0.85	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
1,1,2,2-Tetrachloroethane	ND		6.7	0.82	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
1,2,3-Trichlorobenzene	ND		6.7	1.0	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
1,2,4-Trichlorobenzene	ND		6.7	0.98	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
Toluene	ND		6.7	0.93	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
1,1,1-Trichloroethane	ND		6.7	0.70	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
1,1,2-Trichloroethane	ND		6.7	1.2	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
Trichloroethene	ND		6.7	0.31	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
1,1,2-Trichlorotrifluoroethane	ND		27	0.61	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
Vinyl chloride	ND		6.7	1.8	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
m-Xylene & p-Xylene	ND		3.4	1.4	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
o-Xylene	ND		3.4	0.82	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
Tetrachloroethene	ND		6.7	0.80	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
1,2-Dichlorobenzene	ND		6.7	0.61	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
1,3-Dichlorobenzene	ND		6.7	0.65	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
1,4-Dichlorobenzene	ND		6.7	1.1	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
cis-1,2-Dichloroethene	ND		3.4	0.75	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
cis-1,3-Dichloropropene	ND		6.7	1.7	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
1,1-Dichloroethane	ND		6.7	0.28	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
1,1-Dichloroethene	ND		6.7	0.80	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
1,2-Dichloroethane	ND		6.7	0.94	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
1,2-Dichloropropane	ND		6.7	0.74	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
1,4-Dioxane	ND		670	76	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
Ethylbenzene	ND		6.7	0.90	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
1,2-Dibromoethane	ND		6.7	0.70	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1
Trichlorofluoromethane	ND		13	1.4	ug/Kg	☼	08/18/16 12:00	08/18/16 22:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*118*		*58 - 140*	*08/18/16 12:00*	*08/18/16 22:14*	*1*
Toluene-d8 (Surr)	*99*		*80 - 126*	*08/18/16 12:00*	*08/18/16 22:14*	*1*
4-Bromofluorobenzene (Surr)	*101*		*76 - 127*	*08/18/16 12:00*	*08/18/16 22:14*	*1*
Dibromofluoromethane (Surr)	*107*		*75 - 121*	*08/18/16 12:00*	*08/18/16 22:14*	*1*

Client Sample ID: DUPE-SED
Date Collected: 08/11/16 00:00
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-11
Matrix: Solid
Percent Solids: 95.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		21	5.6	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
2-Butanone (MEK)	ND		21	1.9	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
Benzene	ND		5.2	0.49	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
Chlorobenzene	ND		5.2	0.56	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
Carbon disulfide	ND		5.2	0.44	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
Carbon tetrachloride	ND		5.2	0.65	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
Cyclohexane	ND		5.2	0.41	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
1,2-Dibromo-3-Chloropropane	ND		10	0.62	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
Bromomethane	ND	*	10	0.52	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
Bromoform	ND		5.2	0.24	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: DUPE-SED
Date Collected: 08/11/16 00:00
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-11
Matrix: Solid
Percent Solids: 95.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroethane	ND		10	0.92	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
Chloroform	**0.42**	**J**	10	0.30	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
Chlorobromomethane	ND		5.2	0.31	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
Dichlorobromomethane	ND		5.2	0.23	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
Chlorodibromomethane	ND		5.2	0.59	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
Isopropylbenzene	ND		5.2	0.61	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
2-Hexanone	ND		21	5.1	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
Chloromethane	ND		10	0.80	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
Dichlorodifluoromethane	ND		10	0.54	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
trans-1,2-Dichloroethene	ND		2.6	0.40	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
trans-1,3-Dichloropropene	ND		5.2	0.69	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
Methylene Chloride	**4.5**	**J B**	5.2	1.7	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
Methyl acetate	ND		10	2.9	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
Methyl tert-butyl ether	ND		21	0.35	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
4-Methyl-2-pentanone (MIBK)	ND		21	4.5	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
Methylcyclohexane	ND		5.2	0.44	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
Styrene	ND		5.2	0.65	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
1,1,2,2-Tetrachloroethane	ND		5.2	0.63	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
1,2,3-Trichlorobenzene	ND		5.2	0.78	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
1,2,4-Trichlorobenzene	ND		5.2	0.76	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
Toluene	ND		5.2	0.72	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
1,1,1-Trichloroethane	ND		5.2	0.54	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
1,1,2-Trichloroethane	ND		5.2	0.91	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
Trichloroethene	ND		5.2	0.24	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
1,1,2-Trichlorotrifluoroethane	ND		21	0.47	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
Vinyl chloride	ND		5.2	1.4	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
m-Xylene & p-Xylene	ND		2.6	1.1	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
o-Xylene	ND		2.6	0.63	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
Tetrachloroethene	ND		5.2	0.61	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
1,2-Dichlorobenzene	ND		5.2	0.47	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
1,3-Dichlorobenzene	ND		5.2	0.50	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
1,4-Dichlorobenzene	ND		5.2	0.81	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
cis-1,2-Dichloroethene	ND		2.6	0.58	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
cis-1,3-Dichloropropene	ND		5.2	1.3	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
1,1-Dichloroethane	ND		5.2	0.22	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
1,1-Dichloroethene	ND		5.2	0.61	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
1,2-Dichloroethane	ND		5.2	0.73	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
1,2-Dichloropropane	ND		5.2	0.57	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
1,4-Dioxane	ND		520	58	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
Ethylbenzene	ND		5.2	0.69	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
1,2-Dibromoethane	ND		5.2	0.54	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1
Trichlorofluoromethane	ND		10	1.1	ug/Kg	☼	08/18/16 12:00	08/18/16 22:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*121*		*58 - 140*	*08/18/16 12:00*	*08/18/16 22:34*	*1*
Toluene-d8 (Surr)	*100*		*80 - 126*	*08/18/16 12:00*	*08/18/16 22:34*	*1*
4-Bromofluorobenzene (Surr)	*104*		*76 - 127*	*08/18/16 12:00*	*08/18/16 22:34*	*1*
Dibromofluoromethane (Surr)	*109*		*75 - 121*	*08/18/16 12:00*	*08/18/16 22:34*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Client Sample ID: AC-SED-01-0.005
Date Collected: 08/11/16 12:55
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-4
Matrix: Solid
Percent Solids: 93.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		340	52	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
1,2,4,5-Tetrachlorobenzene	ND		340	51	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
1,2,4-Trichlorobenzene	ND		340	29	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
1,2-Dichlorobenzene	ND		340	23	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
1,3-Dichlorobenzene	ND		340	12	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
1,4-Dichlorobenzene	ND		340	14	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
1,4-Dioxane	ND		680	68	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
2,2'-oxybis[1-chloropropane]	ND		340	24	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
2,3,4,6-Tetrachlorophenol	ND		1700	140	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
2,4,5-Trichlorophenol	ND		340	10	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
2,4,6-Trichlorophenol	ND		340	10	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
2,4-Dichlorophenol	ND		340	10	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
2,4-Dimethylphenol	ND		340	68	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
2,4-Dinitrotoluene	ND		340	68	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
2,6-Dinitrotoluene	ND		340	29	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
2-Chloronaphthalene	ND		340	10	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
2-Chlorophenol	ND		340	22	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
2-Methylnaphthalene	ND		340	20	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
2-Methylphenol	ND		340	13	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
2-Nitroaniline	ND		1700	52	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
2-Nitrophenol	ND		340	10	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
3 & 4 Methylphenol	ND		340	34	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
3,3'-Dichlorobenzidine	ND		680	93	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
3-Nitroaniline	ND		1700	76	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
4,6-Dinitro-2-methylphenol	ND		1700	340	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
4-Bromophenyl phenyl ether	ND		340	20	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
4-Chloro-3-methylphenol	ND		340	68	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
4-Chloroaniline	ND		340	85	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
4-Chlorophenyl phenyl ether	ND		340	22	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
4-Nitroaniline	ND		1700	75	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
4-Nitrophenol	ND		1700	100	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Acenaphthene	ND		340	11	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Acenaphthylene	ND		340	18	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Acetophenone	ND		340	21	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Anthracene	ND		340	18	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Atrazine	ND		340	38	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Benzaldehyde	ND		340	69	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Benzo[a]anthracene	ND		340	21	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Benzo[a]pyrene	ND		340	21	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Benzo[b]fluoranthene	ND		340	27	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Benzo[g,h,i]perylene	ND		340	17	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Benzo[k]fluoranthene	ND		340	41	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Bis(2-chloroethoxy)methane	ND		340	24	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Bis(2-chloroethyl)ether	ND		340	17	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Bis(2-ethylhexyl) phthalate	**48**	**J**	340	48	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Butyl benzyl phthalate	ND		340	45	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Caprolactam	ND		1700	110	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Carbazole	ND		340	37	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Chrysene	ND		340	28	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: AC-SED-01-0.005
Date Collected: 08/11/16 12:55
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-4
Matrix: Solid
Percent Solids: 93.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenz(a,h)anthracene	ND		340	20	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Dibenzofuran	ND		340	21	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Diethyl phthalate	ND		680	27	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Dimethyl phthalate	ND		340	24	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Di-n-butyl phthalate	ND		340	30	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Di-n-octyl phthalate	ND		340	15	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Fluoranthene	ND		340	37	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Fluorene	ND		340	19	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Hexachlorobenzene	ND		340	30	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Hexachlorobutadiene	ND		340	10	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Hexachloroethane	ND		340	22	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Indeno[1,2,3-cd]pyrene	ND		340	23	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Isophorone	ND		340	18	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Naphthalene	ND		340	32	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Nitrobenzene	ND		340	23	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
N-Nitrosodi-n-propylamine	ND		340	32	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
n-Nitrosodiphenylamine(as diphenylamine)	ND		340	22	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Pentachlorophenol	ND		1700	340	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Phenanthrene	ND		340	18	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Phenol	ND		340	19	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1
Pyrene	ND		340	13	ug/Kg	☼	08/24/16 14:29	08/29/16 20:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*74*		*24 - 135*	*08/24/16 14:29*	*08/29/16 20:30*	*1*
2-Fluorobiphenyl	*75*		*33 - 135*	*08/24/16 14:29*	*08/29/16 20:30*	*1*
2-Fluorophenol	*71*		*39 - 135*	*08/24/16 14:29*	*08/29/16 20:30*	*1*
Nitrobenzene-d5	*63*		*32 - 135*	*08/24/16 14:29*	*08/29/16 20:30*	*1*
Phenol-d5	*74*		*39 - 135*	*08/24/16 14:29*	*08/29/16 20:30*	*1*
Terphenyl-d14	*79*		*30 - 135*	*08/24/16 14:29*	*08/29/16 20:30*	*1*

Client Sample ID: AC-SED-02-0.005
Date Collected: 08/11/16 13:50
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-5
Matrix: Solid
Percent Solids: 95.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		340	51	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
1,2,4,5-Tetrachlorobenzene	ND		340	50	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
1,2,4-Trichlorobenzene	ND		340	28	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
1,2-Dichlorobenzene	ND		340	22	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
1,3-Dichlorobenzene	ND		340	12	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
1,4-Dichlorobenzene	ND		340	14	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
1,4-Dioxane	ND		670	67	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
2,2'-oxybis[1-chloropropane]	ND		340	23	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
2,3,4,6-Tetrachlorophenol	ND		1600	140	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
2,4,5-Trichlorophenol	ND		340	10	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
2,4,6-Trichlorophenol	ND		340	10	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
2,4-Dichlorophenol	ND		340	10	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
2,4-Dimethylphenol	ND		340	67	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
2,4-Dinitrotoluene	ND		340	67	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
2,6-Dinitrotoluene	ND		340	28	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: AC-SED-02-0.005
Date Collected: 08/11/16 13:50
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-5
Matrix: Solid
Percent Solids: 95.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chloronaphthalene	ND		340	10	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
2-Chlorophenol	ND		340	21	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
2-Methylnaphthalene	ND		340	19	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
2-Methylphenol	ND		340	13	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
2-Nitroaniline	ND		1600	51	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
2-Nitrophenol	ND		340	10	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
3 & 4 Methylphenol	ND		340	34	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
3,3'-Dichlorobenzidine	ND		670	92	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
3-Nitroaniline	ND		1600	74	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
4,6-Dinitro-2-methylphenol	ND		1600	340	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
4-Bromophenyl phenyl ether	ND		340	19	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
4-Chloro-3-methylphenol	ND		340	67	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
4-Chloroaniline	ND		340	83	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
4-Chlorophenyl phenyl ether	ND		340	21	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
4-Nitroaniline	ND		1600	74	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
4-Nitrophenol	ND		1600	99	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Acenaphthene	ND		340	10	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Acenaphthylene	ND		340	17	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Acetophenone	ND		340	20	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Anthracene	ND		340	17	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Atrazine	ND		340	38	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Benzaldehyde	ND		340	68	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Benzo[a]anthracene	ND		340	20	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Benzo[a]pyrene	ND		340	20	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Benzo[b]fluoranthene	ND		340	27	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Benzo[g,h,i]perylene	ND		340	16	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Benzo[k]fluoranthene	ND		340	41	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Bis(2-chloroethoxy)methane	ND		340	23	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Bis(2-chloroethyl)ether	ND		340	17	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Bis(2-ethylhexyl) phthalate	ND		340	47	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Butyl benzyl phthalate	ND		340	44	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Caprolactam	ND		1600	110	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Carbazole	ND		340	37	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Chrysene	ND		340	27	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Dibenz(a,h)anthracene	ND		340	19	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Dibenzofuran	ND		340	20	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Diethyl phthalate	ND		670	26	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Dimethyl phthalate	ND		340	23	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Di-n-butyl phthalate	ND		340	29	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Di-n-octyl phthalate	ND		340	15	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Fluoranthene	ND		340	37	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Fluorene	ND		340	18	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Hexachlorobenzene	ND		340	29	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Hexachlorobutadiene	ND		340	10	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Hexachloroethane	ND		340	22	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Indeno[1,2,3-cd]pyrene	ND		340	22	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Isophorone	ND		340	17	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Naphthalene	ND		340	32	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Nitrobenzene	ND		340	22	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: AC-SED-02-0.005
Date Collected: 08/11/16 13:50
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-5
Matrix: Solid
Percent Solids: 95.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Nitrosodi-n-propylamine	ND		340	32	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
n-Nitrosodiphenylamine(as diphenylamine)	ND		340	21	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Pentachlorophenol	ND		1600	340	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Phenanthrene	ND		340	17	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Phenol	ND		340	18	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1
Pyrene	ND		340	12	ug/Kg	☼	08/24/16 14:29	08/29/16 20:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*72*		*24 - 135*	*08/24/16 14:29*	*08/29/16 20:57*	*1*
2-Fluorobiphenyl	*70*		*33 - 135*	*08/24/16 14:29*	*08/29/16 20:57*	*1*
2-Fluorophenol	*69*		*39 - 135*	*08/24/16 14:29*	*08/29/16 20:57*	*1*
Nitrobenzene-d5	*61*		*32 - 135*	*08/24/16 14:29*	*08/29/16 20:57*	*1*
Phenol-d5	*71*		*39 - 135*	*08/24/16 14:29*	*08/29/16 20:57*	*1*
Terphenyl-d14	*77*		*30 - 135*	*08/24/16 14:29*	*08/29/16 20:57*	*1*

Client Sample ID: AC-SED-03-0.005
Date Collected: 08/11/16 14:10
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-6
Matrix: Solid
Percent Solids: 91.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		350	53	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
1,2,4,5-Tetrachlorobenzene	ND		350	52	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
1,2,4-Trichlorobenzene	ND		350	30	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
1,2-Dichlorobenzene	ND		350	23	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
1,3-Dichlorobenzene	ND		350	13	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
1,4-Dichlorobenzene	ND		350	14	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
1,4-Dioxane	ND		700	70	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
2,2'-oxybis[1-chloropropane]	ND		350	24	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
2,3,4,6-Tetrachlorophenol	ND		1700	150	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
2,4,5-Trichlorophenol	ND		350	11	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
2,4,6-Trichlorophenol	ND		350	11	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
2,4-Dichlorophenol	ND		350	11	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
2,4-Dimethylphenol	ND		350	70	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
2,4-Dinitrotoluene	ND		350	70	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
2,6-Dinitrotoluene	ND		350	30	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
2-Chloronaphthalene	ND		350	11	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
2-Chlorophenol	ND		350	22	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
2-Methylnaphthalene	ND		350	20	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
2-Methylphenol	ND		350	14	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
2-Nitroaniline	ND		1700	53	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
2-Nitrophenol	ND		350	11	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
3 & 4 Methylphenol	ND		350	35	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
3,3'-Dichlorobenzidine	ND		700	95	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
3-Nitroaniline	ND		1700	77	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
4,6-Dinitro-2-methylphenol	ND		1700	350	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
4-Bromophenyl phenyl ether	ND		350	20	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
4-Chloro-3-methylphenol	ND		350	70	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
4-Chloroaniline	ND		350	87	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
4-Chlorophenyl phenyl ether	ND		350	22	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
4-Nitroaniline	ND		1700	77	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: AC-SED-03-0.005
Date Collected: 08/11/16 14:10
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-6
Matrix: Solid
Percent Solids: 91.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Nitrophenol	ND		1700	100	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Acenaphthene	ND		350	11	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Acenaphthylene	ND		350	18	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Acetophenone	ND		350	21	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Anthracene	ND		350	18	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Atrazine	ND		350	39	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Benzaldehyde	ND		350	71	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Benzo[a]anthracene	ND		350	21	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Benzo[a]pyrene	ND		350	21	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Benzo[b]fluoranthene	ND		350	28	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Benzo[g,h,i]perylene	ND		350	17	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Benzo[k]fluoranthene	ND		350	42	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Bis(2-chloroethoxy)methane	ND		350	24	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Bis(2-chloroethyl)ether	ND		350	18	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Bis(2-ethylhexyl) phthalate	ND		350	49	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Butyl benzyl phthalate	ND		350	46	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Caprolactam	ND		1700	110	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Carbazole	ND		350	38	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Chrysene	ND		350	29	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Dibenz(a,h)anthracene	ND		350	20	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Dibenzofuran	ND		350	21	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Diethyl phthalate	ND		700	28	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Dimethyl phthalate	ND		350	24	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Di-n-butyl phthalate	ND		350	31	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Di-n-octyl phthalate	ND		350	15	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Fluoranthene	ND		350	38	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Fluorene	ND		350	19	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Hexachlorobenzene	ND		350	31	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Hexachlorobutadiene	ND		350	11	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Hexachloroethane	ND		350	23	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Indeno[1,2,3-cd]pyrene	ND		350	23	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Isophorone	ND		350	18	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Naphthalene	ND		350	33	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Nitrobenzene	ND		350	23	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
N-Nitrosodi-n-propylamine	ND		350	33	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
n-Nitrosodiphenylamine(as diphenylamine)	ND		350	22	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Pentachlorophenol	ND		1700	350	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Phenanthrene	ND		350	18	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Phenol	ND		350	19	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1
Pyrene	ND		350	13	ug/Kg	☼	08/24/16 14:29	08/29/16 21:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*62*		*24 - 135*	*08/24/16 14:29*	*08/29/16 21:24*	*1*
2-Fluorobiphenyl	*61*		*33 - 135*	*08/24/16 14:29*	*08/29/16 21:24*	*1*
2-Fluorophenol	*57*		*39 - 135*	*08/24/16 14:29*	*08/29/16 21:24*	*1*
Nitrobenzene-d5	*52*		*32 - 135*	*08/24/16 14:29*	*08/29/16 21:24*	*1*
Phenol-d5	*60*		*39 - 135*	*08/24/16 14:29*	*08/29/16 21:24*	*1*
Terphenyl-d14	*69*		*30 - 135*	*08/24/16 14:29*	*08/29/16 21:24*	*1*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Client Sample ID: DUPE-SED
Date Collected: 08/11/16 00:00
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-11
Matrix: Solid
Percent Solids: 95.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		330	49	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
1,2,4,5-Tetrachlorobenzene	ND		330	48	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
1,2,4-Trichlorobenzene	ND		330	28	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
1,2-Dichlorobenzene	ND		330	22	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
1,3-Dichlorobenzene	ND		330	12	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
1,4-Dichlorobenzene	ND		330	13	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
1,4-Dioxane	ND		650	65	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
2,2'-oxybis[1-chloropropane]	ND		330	23	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
2,3,4,6-Tetrachlorophenol	ND		1600	140	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
2,4,5-Trichlorophenol	ND		330	9.9	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
2,4,6-Trichlorophenol	ND		330	9.9	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
2,4-Dichlorophenol	ND		330	9.9	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
2,4-Dimethylphenol	ND		330	65	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
2,4-Dinitrotoluene	ND		330	65	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
2,6-Dinitrotoluene	ND		330	28	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
2-Chloronaphthalene	ND		330	9.9	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
2-Chlorophenol	ND		330	21	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
2-Methylnaphthalene	ND		330	19	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
2-Methylphenol	ND		330	13	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
2-Nitroaniline	ND		1600	49	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
2-Nitrophenol	ND		330	9.9	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
3 & 4 Methylphenol	ND		330	33	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
3,3'-Dichlorobenzidine	ND		650	89	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
3-Nitroaniline	ND		1600	72	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
4,6-Dinitro-2-methylphenol	ND		1600	330	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
4-Bromophenyl phenyl ether	ND		330	19	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
4-Chloro-3-methylphenol	ND		330	65	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
4-Chloroaniline	ND		330	81	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
4-Chlorophenyl phenyl ether	ND		330	21	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
4-Nitroaniline	ND		1600	72	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
4-Nitrophenol	ND		1600	96	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Acenaphthene	ND		330	10	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Acenaphthylene	ND		330	17	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Acetophenone	ND		330	20	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Anthracene	ND		330	17	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Atrazine	ND		330	37	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Benzaldehyde	ND		330	66	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Benzo[a]anthracene	ND		330	20	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Benzo[a]pyrene	ND		330	20	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Benzo[b]fluoranthene	ND		330	26	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Benzo[g,h,i]perylene	ND		330	16	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Benzo[k]fluoranthene	ND		330	40	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Bis(2-chloroethoxy)methane	ND		330	23	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Bis(2-chloroethyl)ether	ND		330	16	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Bis(2-ethylhexyl) phthalate	ND		330	45	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Butyl benzyl phthalate	ND		330	43	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Caprolactam	ND		1600	100	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Carbazole	ND		330	36	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Chrysene	ND		330	27	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: DUPE-SED
Date Collected: 08/11/16 00:00
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-11
Matrix: Solid
Percent Solids: 95.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibenz(a,h)anthracene	ND		330	19	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Dibenzofuran	ND		330	20	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Diethyl phthalate	ND		650	26	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Dimethyl phthalate	ND		330	23	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Di-n-butyl phthalate	ND		330	29	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Di-n-octyl phthalate	ND		330	14	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Fluoranthene	ND		330	36	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Fluorene	ND		330	18	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Hexachlorobenzene	ND		330	29	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Hexachlorobutadiene	ND		330	9.9	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Hexachloroethane	ND		330	21	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Indeno[1,2,3-cd]pyrene	ND		330	22	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Isophorone	ND		330	17	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Naphthalene	ND		330	31	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Nitrobenzene	ND		330	22	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
N-Nitrosodi-n-propylamine	ND		330	31	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
n-Nitrosodiphenylamine(as diphenylamine)	ND		330	21	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Pentachlorophenol	ND		1600	330	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Phenanthrene	ND		330	17	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Phenol	ND		330	18	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1
Pyrene	ND		330	12	ug/Kg	☼	08/24/16 14:29	08/29/16 21:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*75*		*24 - 135*	*08/24/16 14:29*	*08/29/16 21:50*	*1*
2-Fluorobiphenyl	*77*		*33 - 135*	*08/24/16 14:29*	*08/29/16 21:50*	*1*
2-Fluorophenol	*74*		*39 - 135*	*08/24/16 14:29*	*08/29/16 21:50*	*1*
Nitrobenzene-d5	*66*		*32 - 135*	*08/24/16 14:29*	*08/29/16 21:50*	*1*
Phenol-d5	*75*		*39 - 135*	*08/24/16 14:29*	*08/29/16 21:50*	*1*
Terphenyl-d14	*80*		*30 - 135*	*08/24/16 14:29*	*08/29/16 21:50*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Client Sample ID: AC-SED-01-0.005
Date Collected: 08/11/16 12:55
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-4
Matrix: Solid
Percent Solids: 93.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endosulfan I	ND		1.7	0.18	ug/Kg	☼	08/23/16 11:33	09/07/16 19:10	1
Endosulfan II	ND		1.7	0.29	ug/Kg	☼	08/23/16 11:33	09/07/16 19:10	1
Endosulfan sulfate	ND		1.7	0.28	ug/Kg	☼	08/23/16 11:33	09/07/16 19:10	1
Endrin	ND		1.7	0.31	ug/Kg	☼	08/23/16 11:33	09/07/16 19:10	1
Endrin aldehyde	ND		1.7	0.17	ug/Kg	☼	08/23/16 11:33	09/07/16 19:10	1
Endrin ketone	**0.74**	**J p**	1.7	0.49	ug/Kg	☼	08/23/16 11:33	09/07/16 19:10	1
beta-BHC	ND		1.7	0.67	ug/Kg	☼	08/23/16 11:33	09/07/16 19:10	1
alpha-BHC	ND		1.7	0.22	ug/Kg	☼	08/23/16 11:33	09/07/16 19:10	1
delta-BHC	ND		1.7	0.41	ug/Kg	☼	08/23/16 11:33	09/07/16 19:10	1
gamma-BHC (Lindane)	ND		1.7	0.47	ug/Kg	☼	08/23/16 11:33	09/07/16 19:10	1
gamma-Chlordane	ND		1.7	0.27	ug/Kg	☼	08/23/16 11:33	09/07/16 19:10	1
4,4'-DDD	ND		1.7	0.55	ug/Kg	☼	08/23/16 11:33	09/07/16 19:10	1
4,4'-DDE	ND		1.7	0.24	ug/Kg	☼	08/23/16 11:33	09/07/16 19:10	1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Client Sample ID: AC-SED-01-0.005
Date Collected: 08/11/16 12:55
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-4
Matrix: Solid
Percent Solids: 93.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDT	ND		1.7	0.60	ug/Kg	☼	08/23/16 11:33	09/07/16 19:10	1
Heptachlor	ND		1.7	0.22	ug/Kg	☼	08/23/16 11:33	09/07/16 19:10	1
Heptachlor epoxide	ND		1.7	0.43	ug/Kg	☼	08/23/16 11:33	09/07/16 19:10	1
Dieldrin	ND		1.7	0.21	ug/Kg	☼	08/23/16 11:33	09/07/16 19:10	1
Aldrin	ND		1.7	0.25	ug/Kg	☼	08/23/16 11:33	09/07/16 19:10	1
Methoxychlor	ND		3.3	0.45	ug/Kg	☼	08/23/16 11:33	09/07/16 19:10	1
Toxaphene	ND		68	16	ug/Kg	☼	08/23/16 11:33	09/07/16 19:10	1
alpha-Chlordane	ND		1.7	0.33	ug/Kg	☼	08/23/16 11:33	09/07/16 19:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*49*	*X*	*63 - 124*	*08/23/16 11:33*	*09/07/16 19:10*	*1*
Tetrachloro-m-xylene	*63*		*59 - 115*	*08/23/16 11:33*	*09/07/16 19:10*	*1*

Client Sample ID: AC-SED-02-0.005
Date Collected: 08/11/16 13:50
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-5
Matrix: Solid
Percent Solids: 95.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endosulfan I	ND		1.7	0.18	ug/Kg	☼	08/23/16 11:33	09/07/16 19:27	1
Endosulfan II	ND		1.7	0.29	ug/Kg	☼	08/23/16 11:33	09/07/16 19:27	1
Endosulfan sulfate	ND		1.7	0.28	ug/Kg	☼	08/23/16 11:33	09/07/16 19:27	1
Endrin	ND		1.7	0.31	ug/Kg	☼	08/23/16 11:33	09/07/16 19:27	1
Endrin aldehyde	ND		1.7	0.17	ug/Kg	☼	08/23/16 11:33	09/07/16 19:27	1
Endrin ketone	ND		1.7	0.49	ug/Kg	☼	08/23/16 11:33	09/07/16 19:27	1
beta-BHC	ND		1.7	0.66	ug/Kg	☼	08/23/16 11:33	09/07/16 19:27	1
alpha-BHC	ND		1.7	0.21	ug/Kg	☼	08/23/16 11:33	09/07/16 19:27	1
delta-BHC	ND		1.7	0.40	ug/Kg	☼	08/23/16 11:33	09/07/16 19:27	1
gamma-BHC (Lindane)	ND		1.7	0.46	ug/Kg	☼	08/23/16 11:33	09/07/16 19:27	1
gamma-Chlordane	ND		1.7	0.27	ug/Kg	☼	08/23/16 11:33	09/07/16 19:27	1
4,4'-DDD	ND		1.7	0.54	ug/Kg	☼	08/23/16 11:33	09/07/16 19:27	1
4,4'-DDE	ND		1.7	0.24	ug/Kg	☼	08/23/16 11:33	09/07/16 19:27	1
4,4'-DDT	ND		1.7	0.59	ug/Kg	☼	08/23/16 11:33	09/07/16 19:27	1
Heptachlor	ND		1.7	0.21	ug/Kg	☼	08/23/16 11:33	09/07/16 19:27	1
Heptachlor epoxide	ND		1.7	0.42	ug/Kg	☼	08/23/16 11:33	09/07/16 19:27	1
Dieldrin	ND		1.7	0.21	ug/Kg	☼	08/23/16 11:33	09/07/16 19:27	1
Aldrin	ND		1.7	0.25	ug/Kg	☼	08/23/16 11:33	09/07/16 19:27	1
Methoxychlor	ND		3.3	0.45	ug/Kg	☼	08/23/16 11:33	09/07/16 19:27	1
Toxaphene	ND		67	16	ug/Kg	☼	08/23/16 11:33	09/07/16 19:27	1
alpha-Chlordane	ND		1.7	0.32	ug/Kg	☼	08/23/16 11:33	09/07/16 19:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*56*	*X*	*63 - 124*	*08/23/16 11:33*	*09/07/16 19:27*	*1*
Tetrachloro-m-xylene	*65*		*59 - 115*	*08/23/16 11:33*	*09/07/16 19:27*	*1*

Client Sample ID: AC-SED-03-0.005
Date Collected: 08/11/16 14:10
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-6
Matrix: Solid
Percent Solids: 91.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endosulfan I	ND		1.8	0.19	ug/Kg	☼	08/23/16 11:33	09/07/16 18:52	1
Endosulfan II	ND		1.8	0.30	ug/Kg	☼	08/23/16 11:33	09/07/16 18:52	1
Endosulfan sulfate	ND		1.8	0.29	ug/Kg	☼	08/23/16 11:33	09/07/16 18:52	1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Client Sample ID: AC-SED-03-0.005
Date Collected: 08/11/16 14:10
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-6
Matrix: Solid
Percent Solids: 91.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endrin	ND		1.8	0.32	ug/Kg	☼	08/23/16 11:33	09/07/16 18:52	1
Endrin aldehyde	ND		1.8	0.18	ug/Kg	☼	08/23/16 11:33	09/07/16 18:52	1
Endrin ketone	ND		1.8	0.52	ug/Kg	☼	08/23/16 11:33	09/07/16 18:52	1
beta-BHC	ND		1.8	0.70	ug/Kg	☼	08/23/16 11:33	09/07/16 18:52	1
alpha-BHC	ND		1.8	0.23	ug/Kg	☼	08/23/16 11:33	09/07/16 18:52	1
delta-BHC	ND		1.8	0.42	ug/Kg	☼	08/23/16 11:33	09/07/16 18:52	1
gamma-BHC (Lindane)	ND		1.8	0.49	ug/Kg	☼	08/23/16 11:33	09/07/16 18:52	1
gamma-Chlordane	ND		1.8	0.28	ug/Kg	☼	08/23/16 11:33	09/07/16 18:52	1
4,4'-DDD	ND		1.8	0.58	ug/Kg	☼	08/23/16 11:33	09/07/16 18:52	1
4,4'-DDE	ND		1.8	0.25	ug/Kg	☼	08/23/16 11:33	09/07/16 18:52	1
4,4'-DDT	ND		1.8	0.62	ug/Kg	☼	08/23/16 11:33	09/07/16 18:52	1
Heptachlor	ND		1.8	0.23	ug/Kg	☼	08/23/16 11:33	09/07/16 18:52	1
Heptachlor epoxide	ND		1.8	0.45	ug/Kg	☼	08/23/16 11:33	09/07/16 18:52	1
Dieldrin	ND		1.8	0.22	ug/Kg	☼	08/23/16 11:33	09/07/16 18:52	1
Aldrin	ND		1.8	0.26	ug/Kg	☼	08/23/16 11:33	09/07/16 18:52	1
Methoxychlor	ND		3.5	0.47	ug/Kg	☼	08/23/16 11:33	09/07/16 18:52	1
Toxaphene	ND		71	17	ug/Kg	☼	08/23/16 11:33	09/07/16 18:52	1
alpha-Chlordane	ND		1.8	0.34	ug/Kg	☼	08/23/16 11:33	09/07/16 18:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*45*	*X*	*63 - 124*	*08/23/16 11:33*	*09/07/16 18:52*	*1*
Tetrachloro-m-xylene	*64*		*59 - 115*	*08/23/16 11:33*	*09/07/16 18:52*	*1*

Client Sample ID: DUPE-SED
Date Collected: 08/11/16 00:00
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-11
Matrix: Solid
Percent Solids: 95.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endosulfan I	ND		1.8	0.18	ug/Kg	☼	08/23/16 11:33	09/07/16 19:44	1
Endosulfan II	ND		1.8	0.30	ug/Kg	☼	08/23/16 11:33	09/07/16 19:44	1
Endosulfan sulfate	ND		1.8	0.29	ug/Kg	☼	08/23/16 11:33	09/07/16 19:44	1
Endrin	ND		1.8	0.32	ug/Kg	☼	08/23/16 11:33	09/07/16 19:44	1
Endrin aldehyde	ND		1.8	0.18	ug/Kg	☼	08/23/16 11:33	09/07/16 19:44	1
Endrin ketone	ND		1.8	0.51	ug/Kg	☼	08/23/16 11:33	09/07/16 19:44	1
beta-BHC	ND		1.8	0.69	ug/Kg	☼	08/23/16 11:33	09/07/16 19:44	1
alpha-BHC	ND		1.8	0.22	ug/Kg	☼	08/23/16 11:33	09/07/16 19:44	1
delta-BHC	ND		1.8	0.41	ug/Kg	☼	08/23/16 11:33	09/07/16 19:44	1
gamma-BHC (Lindane)	ND		1.8	0.48	ug/Kg	☼	08/23/16 11:33	09/07/16 19:44	1
gamma-Chlordane	ND		1.8	0.28	ug/Kg	☼	08/23/16 11:33	09/07/16 19:44	1
4,4'-DDD	ND		1.8	0.56	ug/Kg	☼	08/23/16 11:33	09/07/16 19:44	1
4,4'-DDE	ND		1.8	0.25	ug/Kg	☼	08/23/16 11:33	09/07/16 19:44	1
4,4'-DDT	ND		1.8	0.61	ug/Kg	☼	08/23/16 11:33	09/07/16 19:44	1
Heptachlor	ND		1.8	0.22	ug/Kg	☼	08/23/16 11:33	09/07/16 19:44	1
Heptachlor epoxide	ND		1.8	0.44	ug/Kg	☼	08/23/16 11:33	09/07/16 19:44	1
Dieldrin	ND		1.8	0.22	ug/Kg	☼	08/23/16 11:33	09/07/16 19:44	1
Aldrin	ND		1.8	0.26	ug/Kg	☼	08/23/16 11:33	09/07/16 19:44	1
Methoxychlor	ND		3.4	0.47	ug/Kg	☼	08/23/16 11:33	09/07/16 19:44	1
Toxaphene	ND		69	16	ug/Kg	☼	08/23/16 11:33	09/07/16 19:44	1
alpha-Chlordane	ND		1.8	0.33	ug/Kg	☼	08/23/16 11:33	09/07/16 19:44	1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	48	X	63 - 124	08/23/16 11:33	09/07/16 19:44	1
Tetrachloro-m-xylene	62		59 - 115	08/23/16 11:33	09/07/16 19:44	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Client Sample ID: AC-SED-01-0.005
Date Collected: 08/11/16 12:55
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-4
Matrix: Solid
Percent Solids: 93.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1221	ND		48	16	ug/Kg	☼	08/23/16 11:33	09/02/16 13:34	1
PCB-1016	ND		33	5.1	ug/Kg	☼	08/23/16 11:33	09/02/16 13:34	1
PCB-1232	ND		33	5.2	ug/Kg	☼	08/23/16 11:33	09/02/16 13:34	1
PCB-1242	ND		33	9.2	ug/Kg	☼	08/23/16 11:33	09/02/16 13:34	1
PCB-1248	ND		33	5.7	ug/Kg	☼	08/23/16 11:33	09/02/16 13:34	1
PCB-1254	ND		33	5.6	ug/Kg	☼	08/23/16 11:33	09/02/16 13:34	1
PCB-1260	ND		33	2.7	ug/Kg	☼	08/23/16 11:33	09/02/16 13:34	1
PCB-1262	ND		33	12	ug/Kg	☼	08/23/16 11:33	09/02/16 13:34	1
PCB-1268	ND		33	4.0	ug/Kg	☼	08/23/16 11:33	09/02/16 13:34	1
Polychlorinated biphenyls, Total	ND		33	2.7	ug/Kg	☼	08/23/16 11:33	09/02/16 13:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	85		53 - 128	08/23/16 11:33	09/02/16 13:34	1
DCB Decachlorobiphenyl	78		59 - 130	08/23/16 11:33	09/02/16 13:34	1

Client Sample ID: AC-SED-02-0.005
Date Collected: 08/11/16 13:50
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-5
Matrix: Solid
Percent Solids: 95.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1221	ND		47	16	ug/Kg	☼	08/23/16 11:33	09/02/16 13:56	1
PCB-1016	ND		33	5.1	ug/Kg	☼	08/23/16 11:33	09/02/16 13:56	1
PCB-1232	ND		33	5.1	ug/Kg	☼	08/23/16 11:33	09/02/16 13:56	1
PCB-1242	ND		33	9.1	ug/Kg	☼	08/23/16 11:33	09/02/16 13:56	1
PCB-1248	ND		33	5.6	ug/Kg	☼	08/23/16 11:33	09/02/16 13:56	1
PCB-1254	ND		33	5.5	ug/Kg	☼	08/23/16 11:33	09/02/16 13:56	1
PCB-1260	ND		33	2.6	ug/Kg	☼	08/23/16 11:33	09/02/16 13:56	1
PCB-1262	ND		33	12	ug/Kg	☼	08/23/16 11:33	09/02/16 13:56	1
PCB-1268	ND		33	3.9	ug/Kg	☼	08/23/16 11:33	09/02/16 13:56	1
Polychlorinated biphenyls, Total	ND		33	2.6	ug/Kg	☼	08/23/16 11:33	09/02/16 13:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	90		53 - 128	08/23/16 11:33	09/02/16 13:56	1
DCB Decachlorobiphenyl	75		59 - 130	08/23/16 11:33	09/02/16 13:56	1

Client Sample ID: AC-SED-03-0.005
Date Collected: 08/11/16 14:10
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-6
Matrix: Solid
Percent Solids: 91.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1221	ND		50	16	ug/Kg	☼	08/23/16 11:33	09/02/16 15:01	1
PCB-1016	ND		35	5.4	ug/Kg	☼	08/23/16 11:33	09/02/16 15:01	1
PCB-1232	ND		35	5.4	ug/Kg	☼	08/23/16 11:33	09/02/16 15:01	1
PCB-1242	ND		35	9.6	ug/Kg	☼	08/23/16 11:33	09/02/16 15:01	1
PCB-1248	ND		35	5.9	ug/Kg	☼	08/23/16 11:33	09/02/16 15:01	1
PCB-1254	ND		35	5.8	ug/Kg	☼	08/23/16 11:33	09/02/16 15:01	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Client Sample ID: AC-SED-03-0.005
Date Collected: 08/11/16 14:10
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-6
Matrix: Solid
Percent Solids: 91.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1260	ND		35	2.8	ug/Kg	☼	08/23/16 11:33	09/02/16 15:01	1
PCB-1262	ND		35	12	ug/Kg	☼	08/23/16 11:33	09/02/16 15:01	1
PCB-1268	ND		35	4.2	ug/Kg	☼	08/23/16 11:33	09/02/16 15:01	1
Polychlorinated biphenyls, Total	ND		35	2.8	ug/Kg	☼	08/23/16 11:33	09/02/16 15:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*91*		*53 - 128*	*08/23/16 11:33*	*09/02/16 15:01*	*1*
DCB Decachlorobiphenyl	*79*		*59 - 130*	*08/23/16 11:33*	*09/02/16 15:01*	*1*

Client Sample ID: DUPE-SED
Date Collected: 08/11/16 00:00
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-11
Matrix: Solid
Percent Solids: 95.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1221	ND		49	16	ug/Kg	☼	08/23/16 11:33	09/02/16 15:23	1
PCB-1016	ND		34	5.3	ug/Kg	☼	08/23/16 11:33	09/02/16 15:23	1
PCB-1232	ND		34	5.3	ug/Kg	☼	08/23/16 11:33	09/02/16 15:23	1
PCB-1242	ND		34	9.4	ug/Kg	☼	08/23/16 11:33	09/02/16 15:23	1
PCB-1248	ND		34	5.8	ug/Kg	☼	08/23/16 11:33	09/02/16 15:23	1
PCB-1254	ND		34	5.7	ug/Kg	☼	08/23/16 11:33	09/02/16 15:23	1
PCB-1260	ND		34	2.7	ug/Kg	☼	08/23/16 11:33	09/02/16 15:23	1
PCB-1262	ND		34	12	ug/Kg	☼	08/23/16 11:33	09/02/16 15:23	1
PCB-1268	ND		34	4.1	ug/Kg	☼	08/23/16 11:33	09/02/16 15:23	1
Polychlorinated biphenyls, Total	ND		34	2.7	ug/Kg	☼	08/23/16 11:33	09/02/16 15:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*85*		*53 - 128*	*08/23/16 11:33*	*09/02/16 15:23*	*1*
DCB Decachlorobiphenyl	*71*		*59 - 130*	*08/23/16 11:33*	*09/02/16 15:23*	*1*

Method: 8151A - Herbicides (GC)

Client Sample ID: AC-SED-01-0.005
Date Collected: 08/11/16 12:55
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-4
Matrix: Solid
Percent Solids: 93.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-T	ND		8.9	2.5	ug/Kg	☼	08/19/16 08:46	08/23/16 04:03	1
2,4-D	ND		8.9	5.3	ug/Kg	☼	08/19/16 08:46	08/23/16 04:03	1
2,4-DB	ND		8.9	3.2	ug/Kg	☼	08/19/16 08:46	08/23/16 04:03	1
Dalapon	ND		110	3.1	ug/Kg	☼	08/19/16 08:46	08/23/16 04:03	1
Dicamba	ND		8.9	2.0	ug/Kg	☼	08/19/16 08:46	08/23/16 04:03	1
Dichlorprop	ND		8.9	1.2	ug/Kg	☼	08/19/16 08:46	08/23/16 04:03	1
MCPA	ND		2100	200	ug/Kg	☼	08/19/16 08:46	08/23/16 04:03	1
MCPP	ND		2100	180	ug/Kg	☼	08/19/16 08:46	08/23/16 04:03	1
Silvex (2,4,5-TP)	ND		8.9	1.7	ug/Kg	☼	08/19/16 08:46	08/23/16 04:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*79*		*35 - 137*	*08/19/16 08:46*	*08/23/16 04:03*	*1*

Method: 8151A - Herbicides (GC)

Client Sample ID: AC-SED-02-0.005
Date Collected: 08/11/16 13:50
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-5
Matrix: Solid
Percent Solids: 95.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-T	ND		8.7	2.4	ug/Kg	☼	08/19/16 08:46	08/23/16 04:22	1
2,4-D	ND		8.7	5.2	ug/Kg	☼	08/19/16 08:46	08/23/16 04:22	1
2,4-DB	ND		8.7	3.1	ug/Kg	☼	08/19/16 08:46	08/23/16 04:22	1
Dalapon	ND		100	3.0	ug/Kg	☼	08/19/16 08:46	08/23/16 04:22	1
Dicamba	ND		8.7	2.0	ug/Kg	☼	08/19/16 08:46	08/23/16 04:22	1
Dichlorprop	ND		8.7	1.1	ug/Kg	☼	08/19/16 08:46	08/23/16 04:22	1
MCPA	ND		2100	200	ug/Kg	☼	08/19/16 08:46	08/23/16 04:22	1
MCPP	ND		2100	180	ug/Kg	☼	08/19/16 08:46	08/23/16 04:22	1
Silvex (2,4,5-TP)	ND		8.7	1.7	ug/Kg	☼	08/19/16 08:46	08/23/16 04:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*106*		*35 - 137*	*08/19/16 08:46*	*08/23/16 04:22*	*1*

Client Sample ID: AC-SED-03-0.005
Date Collected: 08/11/16 14:10
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-6
Matrix: Solid
Percent Solids: 91.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-T	ND		9.0	2.5	ug/Kg	☼	08/19/16 08:46	08/23/16 04:42	1
2,4-D	ND		9.0	5.4	ug/Kg	☼	08/19/16 08:46	08/23/16 04:42	1
2,4-DB	ND		9.0	3.3	ug/Kg	☼	08/19/16 08:46	08/23/16 04:42	1
Dalapon	ND		110	3.1	ug/Kg	☼	08/19/16 08:46	08/23/16 04:42	1
Dicamba	ND		9.0	2.1	ug/Kg	☼	08/19/16 08:46	08/23/16 04:42	1
Dichlorprop	ND		9.0	1.2	ug/Kg	☼	08/19/16 08:46	08/23/16 04:42	1
MCPA	ND		2200	210	ug/Kg	☼	08/19/16 08:46	08/23/16 04:42	1
MCPP	ND		2200	180	ug/Kg	☼	08/19/16 08:46	08/23/16 04:42	1
Silvex (2,4,5-TP)	ND		9.0	1.7	ug/Kg	☼	08/19/16 08:46	08/23/16 04:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*83*		*35 - 137*	*08/19/16 08:46*	*08/23/16 04:42*	*1*

Client Sample ID: DUPE-SED
Date Collected: 08/11/16 00:00
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-11
Matrix: Solid
Percent Solids: 95.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-T	ND		8.7	2.4	ug/Kg	☼	08/19/16 08:46	08/23/16 05:01	1
2,4-D	ND		8.7	5.2	ug/Kg	☼	08/19/16 08:46	08/23/16 05:01	1
2,4-DB	ND		8.7	3.1	ug/Kg	☼	08/19/16 08:46	08/23/16 05:01	1
Dalapon	ND		100	3.0	ug/Kg	☼	08/19/16 08:46	08/23/16 05:01	1
Dicamba	ND		8.7	2.0	ug/Kg	☼	08/19/16 08:46	08/23/16 05:01	1
Dichlorprop	ND		8.7	1.1	ug/Kg	☼	08/19/16 08:46	08/23/16 05:01	1
MCPA	ND		2100	200	ug/Kg	☼	08/19/16 08:46	08/23/16 05:01	1
MCPP	ND		2100	180	ug/Kg	☼	08/19/16 08:46	08/23/16 05:01	1
Silvex (2,4,5-TP)	ND		8.7	1.7	ug/Kg	☼	08/19/16 08:46	08/23/16 05:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCAA	*92*		*35 - 137*	*08/19/16 08:46*	*08/23/16 05:01*	*1*

Method: 8330B - Nitroaromatics and Nitramines (HPLC)

Client Sample ID: AC-EXP-RO
Date Collected: 08/11/16 12:34
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-1
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Amino-4,6-dinitrotoluene	ND		0.091	0.030	mg/Kg		08/22/16 12:45	08/27/16 04:58	1
4-Amino-2,6-dinitrotoluene	ND		0.091	0.027	mg/Kg		08/22/16 12:45	08/27/16 04:58	1
2,4-Dinitrotoluene	ND		0.091	0.013	mg/Kg		08/22/16 12:45	08/27/16 04:58	1
2,6-Dinitrotoluene	ND		0.091	0.017	mg/Kg		08/22/16 12:45	08/27/16 04:58	1
o-Nitrotoluene	ND		0.18	0.043	mg/Kg		08/22/16 12:45	08/27/16 04:58	1
m-Nitrotoluene	ND		0.18	0.058	mg/Kg		08/22/16 12:45	08/27/16 04:58	1
Nitrobenzene	ND		0.27	0.077	mg/Kg		08/22/16 12:45	08/27/16 04:58	1
p-Nitrotoluene	ND		0.18	0.033	mg/Kg		08/22/16 12:45	08/27/16 04:58	1
1,3,5-Trinitrobenzene	ND		0.091	0.013	mg/Kg		08/22/16 12:45	08/27/16 04:58	1
1,3-Dinitrobenzene	ND		0.091	0.015	mg/Kg		08/22/16 12:45	08/27/16 04:58	1
HMX	ND		0.091	0.021	mg/Kg		08/22/16 12:45	08/27/16 04:58	1
RDX	ND		0.18	0.039	mg/Kg		08/22/16 12:45	08/27/16 04:58	1
Tetryl	ND		0.18	0.040	mg/Kg		08/22/16 12:45	08/27/16 04:58	1
2,4,6-Trinitrotoluene	ND		0.091	0.028	mg/Kg		08/22/16 12:45	08/27/16 04:58	1
3,5-Dinitroaniline	ND		0.091	0.0082	mg/Kg		08/22/16 12:45	08/27/16 04:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dinitrobenzene	*102*		*83 - 122*	*08/22/16 12:45*	*08/27/16 04:58*	*1*

Client Sample ID: AC-EXP-BD
Date Collected: 08/11/16 12:35
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-2
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Amino-4,6-dinitrotoluene	ND		0.10	0.033	mg/Kg		08/22/16 12:45	08/27/16 05:20	1
4-Amino-2,6-dinitrotoluene	ND		0.10	0.030	mg/Kg		08/22/16 12:45	08/27/16 05:20	1
2,4-Dinitrotoluene	ND		0.10	0.015	mg/Kg		08/22/16 12:45	08/27/16 05:20	1
2,6-Dinitrotoluene	ND		0.10	0.019	mg/Kg		08/22/16 12:45	08/27/16 05:20	1
o-Nitrotoluene	ND		0.20	0.047	mg/Kg		08/22/16 12:45	08/27/16 05:20	1
m-Nitrotoluene	ND		0.20	0.064	mg/Kg		08/22/16 12:45	08/27/16 05:20	1
Nitrobenzene	ND		0.30	0.085	mg/Kg		08/22/16 12:45	08/27/16 05:20	1
p-Nitrotoluene	ND		0.20	0.036	mg/Kg		08/22/16 12:45	08/27/16 05:20	1
1,3,5-Trinitrobenzene	ND		0.10	0.014	mg/Kg		08/22/16 12:45	08/27/16 05:20	1
1,3-Dinitrobenzene	ND		0.10	0.017	mg/Kg		08/22/16 12:45	08/27/16 05:20	1
HMX	ND		0.10	0.023	mg/Kg		08/22/16 12:45	08/27/16 05:20	1
RDX	ND		0.20	0.043	mg/Kg		08/22/16 12:45	08/27/16 05:20	1
Tetryl	ND		0.20	0.044	mg/Kg		08/22/16 12:45	08/27/16 05:20	1
2,4,6-Trinitrotoluene	ND		0.10	0.031	mg/Kg		08/22/16 12:45	08/27/16 05:20	1
3,5-Dinitroaniline	ND		0.10	0.0090	mg/Kg		08/22/16 12:45	08/27/16 05:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dinitrobenzene	*105*		*83 - 122*	*08/22/16 12:45*	*08/27/16 05:20*	*1*

Client Sample ID: DUPE-EXP
Date Collected: 08/11/16 00:00
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-3
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Amino-4,6-dinitrotoluene	ND		0.10	0.033	mg/Kg		08/22/16 12:45	08/27/16 06:29	1
4-Amino-2,6-dinitrotoluene	ND	F1	0.10	0.030	mg/Kg		08/22/16 12:45	08/27/16 06:29	1
2,4-Dinitrotoluene	ND		0.10	0.015	mg/Kg		08/22/16 12:45	08/27/16 06:29	1
2,6-Dinitrotoluene	ND		0.10	0.019	mg/Kg		08/22/16 12:45	08/27/16 06:29	1

Method: 8330B - Nitroaromatics and Nitramines (HPLC) (Continued)

Client Sample ID: DUPE-EXP
Date Collected: 08/11/16 00:00
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-3
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Nitrotoluene	ND		0.20	0.047	mg/Kg		08/22/16 12:45	08/27/16 06:29	1
m-Nitrotoluene	ND		0.20	0.064	mg/Kg		08/22/16 12:45	08/27/16 06:29	1
Nitrobenzene	ND		0.30	0.085	mg/Kg		08/22/16 12:45	08/27/16 06:29	1
p-Nitrotoluene	ND		0.20	0.036	mg/Kg		08/22/16 12:45	08/27/16 06:29	1
1,3,5-Trinitrobenzene	ND		0.10	0.014	mg/Kg		08/22/16 12:45	08/27/16 06:29	1
1,3-Dinitrobenzene	ND		0.10	0.017	mg/Kg		08/22/16 12:45	08/27/16 06:29	1
HMX	ND		0.10	0.023	mg/Kg		08/22/16 12:45	08/27/16 06:29	1
RDX	ND		0.20	0.043	mg/Kg		08/22/16 12:45	08/27/16 06:29	1
Tetryl	ND		0.20	0.044	mg/Kg		08/22/16 12:45	08/27/16 06:29	1
2,4,6-Trinitrotoluene	ND		0.10	0.031	mg/Kg		08/22/16 12:45	08/27/16 06:29	1
3,5-Dinitroaniline	ND		0.10	0.0090	mg/Kg		08/22/16 12:45	08/27/16 06:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dinitrobenzene	*103*		*83 - 122*	*08/22/16 12:45*	*08/27/16 06:29*	*1*

Method: 6010C - Metals (ICP)

Client Sample ID: AC-SED-01-0.005
Date Collected: 08/11/16 12:55
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-4
Matrix: Solid
Percent Solids: 93.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**6.3**	**F2**	1.8	0.59	mg/Kg	☼	08/23/16 07:50	08/27/16 15:37	1
Barium	**150**	**B**	0.89	0.068	mg/Kg	☼	08/23/16 07:50	08/27/16 15:37	1
Cadmium	**1.7**	**F2**	0.45	0.037	mg/Kg	☼	08/23/16 07:50	08/27/16 15:37	1
Chromium	**13**	**B**	1.3	0.052	mg/Kg	☼	08/23/16 07:50	08/27/16 15:37	1
Lead	**28**		0.80	0.24	mg/Kg	☼	08/23/16 07:50	08/27/16 15:37	1
Selenium	**1.0**	**J F2**	1.3	0.77	mg/Kg	☼	08/23/16 07:50	08/27/16 15:37	1
Silver	ND	F2	0.89	0.14	mg/Kg	☼	08/23/16 07:50	08/27/16 15:37	1

Client Sample ID: AC-SED-02-0.005
Date Collected: 08/11/16 13:50
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-5
Matrix: Solid
Percent Solids: 95.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**6.1**		1.6	0.53	mg/Kg	☼	08/23/16 07:50	08/27/16 16:00	1
Barium	**130**	**B**	0.80	0.061	mg/Kg	☼	08/23/16 07:50	08/27/16 16:00	1
Cadmium	**0.46**		0.40	0.033	mg/Kg	☼	08/23/16 07:50	08/27/16 16:00	1
Chromium	**10**	**B**	1.2	0.047	mg/Kg	☼	08/23/16 07:50	08/27/16 16:00	1
Lead	**25**		0.72	0.22	mg/Kg	☼	08/23/16 07:50	08/27/16 16:00	1
Selenium	ND		1.2	0.69	mg/Kg	☼	08/23/16 07:50	08/27/16 16:00	1
Silver	ND		0.80	0.13	mg/Kg	☼	08/23/16 07:50	08/27/16 16:00	1

Client Sample ID: AC-SED-03-0.005
Date Collected: 08/11/16 14:10
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-6
Matrix: Solid
Percent Solids: 91.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**8.9**		1.8	0.58	mg/Kg	☼	08/23/16 07:50	08/27/16 16:02	1
Barium	**120**	**B**	0.88	0.067	mg/Kg	☼	08/23/16 07:50	08/27/16 16:02	1
Cadmium	**0.39**	**J**	0.44	0.036	mg/Kg	☼	08/23/16 07:50	08/27/16 16:02	1
Chromium	**13**	**B**	1.3	0.051	mg/Kg	☼	08/23/16 07:50	08/27/16 16:02	1
Lead	**38**		0.79	0.24	mg/Kg	☼	08/23/16 07:50	08/27/16 16:02	1

Method: 6010C - Metals (ICP) (Continued)

Client Sample ID: AC-SED-03-0.005
Date Collected: 08/11/16 14:10
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-6
Matrix: Solid
Percent Solids: 91.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		1.3	0.76	mg/Kg	☼	08/23/16 07:50	08/27/16 16:02	1
Silver	ND		0.88	0.14	mg/Kg	☼	08/23/16 07:50	08/27/16 16:02	1

Client Sample ID: AC-SED-04-0.005
Date Collected: 08/11/16 13:35
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-7
Matrix: Solid
Percent Solids: 96.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**4.4**		1.4	0.47	mg/Kg	☼	08/23/16 07:50	08/27/16 16:05	1
Cadmium	**0.31**	**J**	0.36	0.029	mg/Kg	☼	08/23/16 07:50	08/27/16 16:05	1
Copper	**24**		1.4	0.16	mg/Kg	☼	08/23/16 07:50	08/27/16 16:05	1
Tin	**1.4**	**J**	7.2	0.66	mg/Kg	☼	08/23/16 07:50	08/27/16 16:05	1
Zinc	**82**	**B**	2.2	0.29	mg/Kg	☼	08/23/16 07:50	08/27/16 16:05	1
Antimony	ND		1.1	0.27	mg/Kg	☼	08/23/16 07:50	08/27/16 16:05	1
Lead	**140**		0.65	0.19	mg/Kg	☼	08/23/16 07:50	08/27/16 16:05	1

Client Sample ID: AC-SED-05-0.005
Date Collected: 08/11/16 13:35
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-8
Matrix: Solid
Percent Solids: 96.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**6.3**		2.0	0.64	mg/Kg	☼	08/23/16 07:50	08/27/16 16:07	1
Cadmium	**0.34**	**J**	0.49	0.040	mg/Kg	☼	08/23/16 07:50	08/27/16 16:07	1
Copper	**33**		2.0	0.21	mg/Kg	☼	08/23/16 07:50	08/27/16 16:07	1
Tin	**2.9**	**J**	9.8	0.89	mg/Kg	☼	08/23/16 07:50	08/27/16 16:07	1
Zinc	**91**	**B**	2.9	0.39	mg/Kg	☼	08/23/16 07:50	08/27/16 16:07	1
Antimony	ND		1.5	0.37	mg/Kg	☼	08/23/16 07:50	08/27/16 16:07	1
Lead	**350**		0.88	0.26	mg/Kg	☼	08/23/16 07:50	08/27/16 16:07	1

Client Sample ID: AC-SED-06-0.005
Date Collected: 08/11/16 13:15
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-9
Matrix: Solid
Percent Solids: 99.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**2.4**		1.9	0.64	mg/Kg	☼	08/23/16 07:50	08/27/16 16:10	1
Cadmium	**0.29**	**J**	0.48	0.040	mg/Kg	☼	08/23/16 07:50	08/27/16 16:10	1
Copper	**76**		1.9	0.21	mg/Kg	☼	08/23/16 07:50	08/27/16 16:10	1
Tin	**2.1**	**J**	9.7	0.88	mg/Kg	☼	08/23/16 07:50	08/27/16 16:10	1
Zinc	**140**	**B**	2.9	0.39	mg/Kg	☼	08/23/16 07:50	08/27/16 16:10	1
Antimony	**2.7**		1.5	0.37	mg/Kg	☼	08/23/16 07:50	08/27/16 16:10	1
Lead	**670**		0.87	0.26	mg/Kg	☼	08/23/16 07:50	08/27/16 16:10	1

Client Sample ID: AC-SED-07-0.005
Date Collected: 08/11/16 13:20
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-10
Matrix: Solid
Percent Solids: 96.7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**8.4**		2.0	0.65	mg/Kg	☼	08/23/16 07:50	08/27/16 16:12	1
Cadmium	**1.0**		0.49	0.040	mg/Kg	☼	08/23/16 07:50	08/27/16 16:12	1
Copper	**420**		2.0	0.21	mg/Kg	☼	08/23/16 07:50	08/27/16 16:12	1
Tin	**11**		9.8	0.89	mg/Kg	☼	08/23/16 07:50	08/27/16 16:12	1
Zinc	**130**	**B**	2.9	0.39	mg/Kg	☼	08/23/16 07:50	08/27/16 16:12	1
Antimony	**21**		1.5	0.37	mg/Kg	☼	08/23/16 07:50	08/27/16 16:12	1
Lead	**6200**		0.88	0.26	mg/Kg	☼	08/23/16 07:50	08/27/16 16:12	1

Method: 6010C - Metals (ICP)

Client Sample ID: DUPE-SED — **Lab Sample ID: 280-86822-11**
Date Collected: 08/11/16 00:00 — **Matrix: Solid**
Date Received: 08/11/16 15:30 — **Percent Solids: 95.4**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	6.3		1.6	0.54	mg/Kg	☼	08/23/16 07:50	08/27/16 16:15	1
Barium	130	B	0.82	0.062	mg/Kg	☼	08/23/16 07:50	08/27/16 16:15	1
Cadmium	0.41		0.41	0.033	mg/Kg	☼	08/23/16 07:50	08/27/16 16:15	1
Chromium	10	B	1.2	0.047	mg/Kg	☼	08/23/16 07:50	08/27/16 16:15	1
Lead	27		0.73	0.22	mg/Kg	☼	08/23/16 07:50	08/27/16 16:15	1
Selenium	ND		1.2	0.70	mg/Kg	☼	08/23/16 07:50	08/27/16 16:15	1
Silver	ND		0.82	0.13	mg/Kg	☼	08/23/16 07:50	08/27/16 16:15	1

Method: 7471B - Mercury (CVAA)

Client Sample ID: AC-SED-01-0.005 — **Lab Sample ID: 280-86822-4**
Date Collected: 08/11/16 12:55 — **Matrix: Solid**
Date Received: 08/11/16 15:30 — **Percent Solids: 93.3**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.022	F2	0.021	0.0070	mg/Kg	☼	08/25/16 12:45	08/25/16 19:32	1

Client Sample ID: AC-SED-02-0.005 — **Lab Sample ID: 280-86822-5**
Date Collected: 08/11/16 13:50 — **Matrix: Solid**
Date Received: 08/11/16 15:30 — **Percent Solids: 95.5**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.024		0.021	0.0067	mg/Kg	☼	08/25/16 12:45	08/25/16 19:39	1

Client Sample ID: AC-SED-03-0.005 — **Lab Sample ID: 280-86822-6**
Date Collected: 08/11/16 14:10 — **Matrix: Solid**
Date Received: 08/11/16 15:30 — **Percent Solids: 91.9**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.041		0.019	0.0062	mg/Kg	☼	08/25/16 12:45	08/25/16 19:42	1

Client Sample ID: DUPE-SED — **Lab Sample ID: 280-86822-11**
Date Collected: 08/11/16 00:00 — **Matrix: Solid**
Date Received: 08/11/16 15:30 — **Percent Solids: 95.4**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.028		0.019	0.0063	mg/Kg	☼	08/25/16 12:45	08/25/16 19:44	1

General Chemistry

Client Sample ID: AC-EXP-RO — **Lab Sample ID: 280-86822-1**
Date Collected: 08/11/16 12:34 — **Matrix: Solid**
Date Received: 08/11/16 15:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	2.7		0.1	0.1	%			08/16/16 09:08	1

Client Sample ID: AC-EXP-BD — **Lab Sample ID: 280-86822-2**
Date Collected: 08/11/16 12:35 — **Matrix: Solid**
Date Received: 08/11/16 15:30

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	2.2		0.1	0.1	%			08/16/16 09:08	1

General Chemistry

Client Sample ID: DUPE-EXP
Date Collected: 08/11/16 00:00
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-3
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	2.3		0.1	0.1	%			08/16/16 09:08	1

Client Sample ID: AC-SED-01-0.005
Date Collected: 08/11/16 12:55
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-4
Matrix: Solid
Percent Solids: 93.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	6.7		0.1	0.1	%			08/16/16 09:08	1

Client Sample ID: AC-SED-02-0.005
Date Collected: 08/11/16 13:50
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-5
Matrix: Solid
Percent Solids: 95.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	4.5		0.1	0.1	%			08/16/16 09:08	1

Client Sample ID: AC-SED-03-0.005
Date Collected: 08/11/16 14:10
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-6
Matrix: Solid
Percent Solids: 91.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	8.1		0.1	0.1	%			08/16/16 09:08	1

Client Sample ID: AC-SED-04-0.005
Date Collected: 08/11/16 13:35
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-7
Matrix: Solid
Percent Solids: 96.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	3.1		0.1	0.1	%			08/16/16 09:08	1

Client Sample ID: AC-SED-05-0.005
Date Collected: 08/11/16 13:35
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-8
Matrix: Solid
Percent Solids: 96.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	3.7		0.1	0.1	%			08/16/16 09:08	1

Client Sample ID: AC-SED-06-0.005
Date Collected: 08/11/16 13:15
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-9
Matrix: Solid
Percent Solids: 99.9

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	0.1		0.1	0.1	%			08/16/16 09:08	1

Client Sample ID: AC-SED-07-0.005
Date Collected: 08/11/16 13:20
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-10
Matrix: Solid
Percent Solids: 96.7

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	3.3		0.1	0.1	%			08/16/16 09:08	1

Client Sample ID: DUPE-SED
Date Collected: 08/11/16 00:00
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-11
Matrix: Solid
Percent Solids: 95.4

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	4.6		0.1	0.1	%			08/16/16 09:08	1

Surrogate Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86822-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		12DCE	TOL	BFB	DBFM
Lab Sample ID	Client Sample ID	(58-140)	(80-126)	(76-127)	(75-121)
280-86822-4	AC-SED-01-0.005	116	101	99	105
280-86822-5	AC-SED-02-0.005	111	103	101	104
280-86822-6	AC-SED-03-0.005	118	99	101	107
280-86822-11	DUPE-SED	121	100	104	109
LCS 280-338552/2-A	Lab Control Sample	111	95	97	103
LCSD 280-338552/25-A	Lab Control Sample Dup	112	90	94	104
MB 280-338552/1-A	Method Blank	113	96	91	103

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		TBP	FBP	2FP	NBZ	PHL	TPH
Lab Sample ID	Client Sample ID	(24-135)	(33-135)	(39-135)	(32-135)	(39-135)	(30-135)
280-86822-4	AC-SED-01-0.005	74	75	71	63	74	79
280-86822-5	AC-SED-02-0.005	72	70	69	61	71	77
280-86822-6	AC-SED-03-0.005	62	61	57	52	60	69
280-86822-11	DUPE-SED	75	77	74	66	75	80
LCS 280-339329/2-A	Lab Control Sample	78	76	75	71	77	82
MB 280-339329/1-A	Method Blank	66	72	69	65	73	83

Surrogate Legend

TBP = 2,4,6-Tribromophenol
FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol
NBZ = Nitrobenzene-d5
PHL = Phenol-d5
TPH = Terphenyl-d14

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(63-124)	(59-115)
280-86822-4	AC-SED-01-0.005	49 X	63
280-86822-5	AC-SED-02-0.005	56 X	65
280-86822-6	AC-SED-03-0.005	45 X	64
280-86822-11	DUPE-SED	48 X	62
LCS 280-339106/2-A	Lab Control Sample	80	84
MB 280-339106/1-A	Method Blank	77	85

Surrogate Legend

DCB = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		TCX2	DCB2
Lab Sample ID	Client Sample ID	(53-128)	(59-130)
280-86822-4	AC-SED-01-0.005	85	78
280-86822-5	AC-SED-02-0.005	90	75
280-86822-5 MS	AC-SED-02-0.005	91	76
280-86822-5 MSD	AC-SED-02-0.005	89	75
280-86822-6	AC-SED-03-0.005	91	79
280-86822-11	DUPE-SED	85	71
LCS 280-339106/4-A	Lab Control Sample	99	97
MB 280-339106/1-A	Method Blank	97	94

Surrogate Legend

TCX = Tetrachloro-m-xylene

DCB = DCB Decachlorobiphenyl

Method: 8151A - Herbicides (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		DCPA2
Lab Sample ID	Client Sample ID	(35-137)
280-86822-4	AC-SED-01-0.005	79
280-86822-5	AC-SED-02-0.005	106
280-86822-6	AC-SED-03-0.005	83
280-86822-11	DUPE-SED	92

Surrogate Legend

DCPA = DCAA

Method: 8151A - Herbicides (GC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		DCPA1
Lab Sample ID	Client Sample ID	(35-137)
LCS 680-446438/17-A	Lab Control Sample	47
MB 680-446438/16-A	Method Blank	43

Surrogate Legend

DCPA = DCAA

Method: 8330B - Nitroaromatics and Nitramines (HPLC)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		12DNB1
Lab Sample ID	Client Sample ID	(83-122)
280-86822-1	AC-EXP-RO	102
280-86822-2	AC-EXP-BD	105
280-86822-2 MS	AC-EXP-BD	104

Surrogate Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86822-1

Method: 8330B - Nitroaromatics and Nitramines (HPLC) (Continued)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	12DNB1 (83-122)
280-86822-2 MSD	AC-EXP-BD	103
280-86822-3	DUPE-EXP	103
280-86822-3 DU	DUPE-EXP	104
280-86822-3 MS	DUPE-EXP	103
280-86822-3 MSD	DUPE-EXP	105
280-86822-3 TRL	TRIP	105
LCS 280-338903/12-A	Lab Control Sample	105
LCS 280-338903/2-A	Lab Control Sample	105
MB 280-338903/1-A	Method Blank	103

Surrogate Legend

12DNB = 1,2-Dinitrobenzene

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 280-338552/1-A
Matrix: Solid
Analysis Batch: 338344

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 338552

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		20	5.4	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
2-Butanone (MEK)	ND		20	1.8	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
Benzene	ND		5.0	0.47	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
Chlorobenzene	ND		5.0	0.54	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
Carbon disulfide	ND		5.0	0.42	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
Carbon tetrachloride	ND		5.0	0.63	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
Cyclohexane	ND		5.0	0.40	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
1,2-Dibromo-3-Chloropropane	ND		10	0.60	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
Bromomethane	ND		10	0.50	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
Bromoform	ND		5.0	0.23	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
Chloroethane	ND		10	0.89	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
Chloroform	ND		10	0.29	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
Chlorobromomethane	ND		5.0	0.30	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
Dichlorobromomethane	ND		5.0	0.22	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
Chlorodibromomethane	ND		5.0	0.57	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
Isopropylbenzene	ND		5.0	0.59	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
2-Hexanone	ND		20	4.9	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
Chloromethane	ND		10	0.77	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
Dichlorodifluoromethane	ND		10	0.52	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
trans-1,2-Dichloroethene	ND		2.5	0.39	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
trans-1,3-Dichloropropene	ND		5.0	0.67	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
Methylene Chloride	2.09	J	5.0	1.6	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
Methyl acetate	ND		10	2.8	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
Methyl tert-butyl ether	ND		20	0.34	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
4-Methyl-2-pentanone (MIBK)	ND		20	4.4	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
Methylcyclohexane	ND		5.0	0.42	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
Styrene	ND		5.0	0.63	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
1,1,2,2-Tetrachloroethane	ND		5.0	0.61	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
1,2,3-Trichlorobenzene	ND		5.0	0.75	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
1,2,4-Trichlorobenzene	ND		5.0	0.73	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
Toluene	ND		5.0	0.69	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
1,1,1-Trichloroethane	ND		5.0	0.52	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
1,1,2-Trichloroethane	ND		5.0	0.88	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
Trichloroethene	ND		5.0	0.23	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
1,1,2-Trichlorotrifluoroethane	ND		20	0.45	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
Vinyl chloride	ND		5.0	1.3	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
m-Xylene & p-Xylene	ND		2.5	1.0	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
o-Xylene	ND		2.5	0.61	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
Tetrachloroethene	ND		5.0	0.59	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
1,2-Dichlorobenzene	ND		5.0	0.45	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
1,3-Dichlorobenzene	ND		5.0	0.48	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
1,4-Dichlorobenzene	ND		5.0	0.78	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
cis-1,2-Dichloroethene	ND		2.5	0.56	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
cis-1,3-Dichloropropene	ND		5.0	1.3	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
1,1-Dichloroethane	ND		5.0	0.21	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
1,1-Dichloroethene	ND		5.0	0.59	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
1,2-Dichloroethane	ND		5.0	0.70	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
1,2-Dichloropropane	ND		5.0	0.55	ug/Kg		08/18/16 12:00	08/18/16 20:16	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 280-338552/1-A
Matrix: Solid
Analysis Batch: 338344

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 338552

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		500	56	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
Ethylbenzene	ND		5.0	0.67	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
1,2-Dibromoethane	ND		5.0	0.52	ug/Kg		08/18/16 12:00	08/18/16 20:16	1
Trichlorofluoromethane	ND		10	1.0	ug/Kg		08/18/16 12:00	08/18/16 20:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*113*		*58 - 140*	*08/18/16 12:00*	*08/18/16 20:16*	*1*
Toluene-d8 (Surr)	*96*		*80 - 126*	*08/18/16 12:00*	*08/18/16 20:16*	*1*
4-Bromofluorobenzene (Surr)	*91*		*76 - 127*	*08/18/16 12:00*	*08/18/16 20:16*	*1*
Dibromofluoromethane (Surr)	*103*		*75 - 121*	*08/18/16 12:00*	*08/18/16 20:16*	*1*

Lab Sample ID: LCS 280-338552/2-A
Matrix: Solid
Analysis Batch: 338344

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 338552

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	200	261		ug/Kg		131	65 - 150
2-Butanone (MEK)	200	221		ug/Kg		111	45 - 177
Benzene	50.0	51.5		ug/Kg		103	75 - 135
Chlorobenzene	50.0	47.2		ug/Kg		94	78 - 135
Carbon disulfide	50.0	54.1		ug/Kg		108	45 - 150
Carbon tetrachloride	50.0	64.9		ug/Kg		130	69 - 138
1,2-Dibromo-3-Chloropropane	50.0	51.3		ug/Kg		103	66 - 150
Bromomethane	50.0	57.7		ug/Kg		115	52 - 135
Bromoform	50.0	56.1		ug/Kg		112	77 - 135
Chloroethane	50.0	60.6		ug/Kg		121	51 - 145
Chloroform	50.0	56.0		ug/Kg		112	73 - 123
Chlorobromomethane	50.0	53.6		ug/Kg		107	74 - 135
Dichlorobromomethane	50.0	56.2		ug/Kg		112	73 - 135
Chlorodibromomethane	50.0	51.1		ug/Kg		102	77 - 135
Isopropylbenzene	50.0	48.5		ug/Kg		97	74 - 137
2-Hexanone	200	208		ug/Kg		104	67 - 150
Chloromethane	50.0	52.6		ug/Kg		105	41 - 138
Dichlorodifluoromethane	50.0	59.7		ug/Kg		119	32 - 152
trans-1,2-Dichloroethene	50.0	54.4		ug/Kg		109	77 - 135
trans-1,3-Dichloropropene	50.0	54.3		ug/Kg		109	71 - 135
Methylene Chloride	50.0	54.2		ug/Kg		108	76 - 136
Methyl acetate	250	241		ug/Kg		96	50 - 150
Methyl tert-butyl ether	50.0	54.2		ug/Kg		108	71 - 141
4-Methyl-2-pentanone (MIBK)	200	217		ug/Kg		108	69 - 150
Methylcyclohexane	50.0	52.1		ug/Kg		104	50 - 150
Styrene	50.0	48.3		ug/Kg		97	76 - 135
1,1,2,2-Tetrachloroethane	50.0	45.5		ug/Kg		91	65 - 135
1,2,3-Trichlorobenzene	50.0	51.7		ug/Kg		103	62 - 135
1,2,4-Trichlorobenzene	50.0	51.4		ug/Kg		103	65 - 135
Toluene	50.0	52.2		ug/Kg		104	77 - 122
1,1,1-Trichloroethane	50.0	62.0		ug/Kg		124	70 - 135
1,1,2-Trichloroethane	50.0	51.6		ug/Kg		103	78 - 135

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 280-338552/2-A
Matrix: Solid
Analysis Batch: 338344

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 338552

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichloroethene	50.0	53.2		ug/Kg		106	77 - 135
1,1,2-Trichlorotrifluoroethane	50.0	59.8		ug/Kg		120	50 - 150
Vinyl chloride	50.0	57.4		ug/Kg		115	43 - 145
m-Xylene & p-Xylene	50.0	49.1		ug/Kg		98	77 - 135
o-Xylene	50.0	47.3		ug/Kg		95	75 - 135
Tetrachloroethene	50.0	51.6		ug/Kg		103	76 - 135
1,2-Dichlorobenzene	50.0	48.2		ug/Kg		96	73 - 135
1,3-Dichlorobenzene	50.0	48.5		ug/Kg		97	69 - 135
1,4-Dichlorobenzene	50.0	48.2		ug/Kg		96	73 - 135
cis-1,2-Dichloroethene	50.0	52.2		ug/Kg		104	76 - 135
cis-1,3-Dichloropropene	50.0	49.5		ug/Kg		99	71 - 135
1,1-Dichloroethane	50.0	53.4		ug/Kg		107	70 - 135
1,1-Dichloroethene	50.0	52.8		ug/Kg		106	79 - 135
1,2-Dichloroethane	50.0	59.8		ug/Kg		120	69 - 135
1,2-Dichloropropane	50.0	50.7		ug/Kg		101	72 - 121
1,4-Dioxane	1000	1050		ug/Kg		105	52 - 135
Ethylbenzene	50.0	48.3		ug/Kg		97	73 - 125
1,2-Dibromoethane	50.0	50.0		ug/Kg		100	76 - 135
Trichlorofluoromethane	50.0	63.6		ug/Kg		127	48 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*111*		*58 - 140*
Toluene-d8 (Surr)	*95*		*80 - 126*
4-Bromofluorobenzene (Surr)	*97*		*76 - 127*
Dibromofluoromethane (Surr)	*103*		*75 - 121*

Lab Sample ID: LCSD 280-338552/25-A
Matrix: Solid
Analysis Batch: 338344

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 338552

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	200	296		ug/Kg		148	65 - 150	12	28
2-Butanone (MEK)	200	249		ug/Kg		125	45 - 177	12	32
Benzene	50.0	52.9		ug/Kg		106	75 - 135	3	20
Chlorobenzene	50.0	46.5		ug/Kg		93	78 - 135	2	20
Carbon disulfide	50.0	54.7		ug/Kg		109	45 - 150	1	24
Carbon tetrachloride	50.0	65.0		ug/Kg		130	69 - 138	0	20
1,2-Dibromo-3-Chloropropane	50.0	53.5		ug/Kg		107	66 - 150	4	28
Bromomethane	50.0	71.3	*	ug/Kg		143	52 - 135	21	22
Bromoform	50.0	56.8		ug/Kg		114	77 - 135	1	20
Chloroethane	50.0	68.1		ug/Kg		136	51 - 145	12	22
Chloroform	50.0	57.0		ug/Kg		114	73 - 123	2	20
Chlorobromomethane	50.0	55.3		ug/Kg		111	74 - 135	3	21
Dichlorobromomethane	50.0	57.7		ug/Kg		115	73 - 135	3	20
Chlorodibromomethane	50.0	51.7		ug/Kg		103	77 - 135	1	20
Isopropylbenzene	50.0	48.2		ug/Kg		96	74 - 137	1	20
2-Hexanone	200	229		ug/Kg		114	67 - 150	9	29
Chloromethane	50.0	60.9		ug/Kg		122	41 - 138	15	25

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 280-338552/25-A
Matrix: Solid
Analysis Batch: 338344

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 338552

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dichlorodifluoromethane			50.0	67.6		ug/Kg		135	32 - 152	12	28
trans-1,2-Dichloroethene			50.0	54.8		ug/Kg		110	77 - 135	1	20
trans-1,3-Dichloropropene			50.0	56.2		ug/Kg		112	71 - 135	4	20
Methylene Chloride			50.0	55.2		ug/Kg		110	76 - 136	2	21
Methyl acetate			250	256		ug/Kg		102	50 - 150	6	30
Methyl tert-butyl ether			50.0	56.6		ug/Kg		113	71 - 141	4	20
4-Methyl-2-pentanone (MIBK)			200	248		ug/Kg		124	69 - 150	14	25
Methylcyclohexane			50.0	52.2		ug/Kg		104	50 - 150	0	30
Styrene			50.0	47.5		ug/Kg		95	76 - 135	2	20
1,1,2,2-Tetrachloroethane			50.0	46.3		ug/Kg		93	65 - 135	2	21
1,2,3-Trichlorobenzene			50.0	51.9		ug/Kg		104	62 - 135	0	31
1,2,4-Trichlorobenzene			50.0	51.1		ug/Kg		102	65 - 135	1	26
Toluene			50.0	53.8		ug/Kg		108	77 - 122	3	20
1,1,1-Trichloroethane			50.0	63.2		ug/Kg		126	70 - 135	2	20
1,1,2-Trichloroethane			50.0	53.0		ug/Kg		106	78 - 135	3	20
Trichloroethene			50.0	55.8		ug/Kg		112	77 - 135	5	20
1,1,2-Trichlorotrifluoroethane			50.0	61.8		ug/Kg		124	50 - 150	3	20
Vinyl chloride			50.0	67.4		ug/Kg		135	43 - 145	16	24
m-Xylene & p-Xylene			50.0	48.6		ug/Kg		97	77 - 135	1	20
o-Xylene			50.0	46.7		ug/Kg		93	75 - 135	1	20
Tetrachloroethene			50.0	50.0		ug/Kg		100	76 - 135	3	20
1,2-Dichlorobenzene			50.0	48.8		ug/Kg		98	73 - 135	1	20
1,3-Dichlorobenzene			50.0	48.5		ug/Kg		97	69 - 135	0	20
1,4-Dichlorobenzene			50.0	48.6		ug/Kg		97	73 - 135	1	22
cis-1,2-Dichloroethene			50.0	52.6		ug/Kg		105	76 - 135	1	20
cis-1,3-Dichloropropene			50.0	49.0		ug/Kg		98	71 - 135	1	20
1,1-Dichloroethane			50.0	53.9		ug/Kg		108	70 - 135	1	20
1,1-Dichloroethene			50.0	54.6		ug/Kg		109	79 - 135	3	20
1,2-Dichloroethane			50.0	62.3		ug/Kg		125	69 - 135	4	20
1,2-Dichloropropane			50.0	51.0		ug/Kg		102	72 - 121	1	20
1,4-Dioxane			1000	1110		ug/Kg		111	52 - 135	5	30
Ethylbenzene			50.0	46.9		ug/Kg		94	73 - 125	3	20
1,2-Dibromoethane			50.0	50.7		ug/Kg		101	76 - 135	1	20
Trichlorofluoromethane			50.0	72.9		ug/Kg		146	48 - 150	14	33

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*112*		*58 - 140*
Toluene-d8 (Surr)	*90*		*80 - 126*
4-Bromofluorobenzene (Surr)	*94*		*76 - 127*
Dibromofluoromethane (Surr)	*104*		*75 - 121*

Method: 8270C - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 280-339329/1-A
Matrix: Solid
Analysis Batch: 339947

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 339329

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	ND		330	50	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
1,2,4,5-Tetrachlorobenzene	ND		330	49	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
1,2,4-Trichlorobenzene	ND		330	28	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
1,2-Dichlorobenzene	ND		330	22	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
1,3-Dichlorobenzene	ND		330	12	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
1,4-Dichlorobenzene	ND		330	14	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
1,4-Dioxane	ND		660	66	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
2,2'-oxybis[1-chloropropane]	ND		330	23	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
2,3,4,6-Tetrachlorophenol	ND		1600	140	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
2,4,5-Trichlorophenol	ND		330	10	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
2,4,6-Trichlorophenol	ND		330	10	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
2,4-Dichlorophenol	ND		330	10	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
2,4-Dimethylphenol	ND		330	66	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
2,4-Dinitrotoluene	ND		330	66	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
2,6-Dinitrotoluene	ND		330	28	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
2-Chloronaphthalene	ND		330	10	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
2-Chlorophenol	ND		330	21	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
2-Methylnaphthalene	ND		330	19	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
2-Methylphenol	ND		330	13	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
2-Nitroaniline	ND		1600	50	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
2-Nitrophenol	ND		330	10	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
3 & 4 Methylphenol	ND		330	33	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
3,3'-Dichlorobenzidine	ND		660	90	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
3-Nitroaniline	ND		1600	73	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
4,6-Dinitro-2-methylphenol	ND		1600	330	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
4-Bromophenyl phenyl ether	ND		330	19	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
4-Chloro-3-methylphenol	ND		330	66	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
4-Chloroaniline	ND		330	82	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
4-Chlorophenyl phenyl ether	ND		330	21	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
4-Nitroaniline	ND		1600	73	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
4-Nitrophenol	ND		1600	97	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Acenaphthene	ND		330	10	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Acenaphthylene	ND		330	17	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Acetophenone	ND		330	20	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Anthracene	ND		330	17	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Atrazine	ND		330	37	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Benzaldehyde	ND		330	67	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Benzo[a]anthracene	ND		330	20	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Benzo[a]pyrene	ND		330	20	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Benzo[b]fluoranthene	ND		330	26	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Benzo[g,h,i]perylene	ND		330	16	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Benzo[k]fluoranthene	ND		330	40	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Bis(2-chloroethoxy)methane	ND		330	23	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Bis(2-chloroethyl)ether	ND		330	17	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Bis(2-ethylhexyl) phthalate	ND		330	46	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Butyl benzyl phthalate	ND		330	43	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Caprolactam	ND		1600	110	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Carbazole	ND		330	36	ug/Kg		08/24/16 14:29	08/29/16 15:34	1

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 280-339329/1-A
Matrix: Solid
Analysis Batch: 339947

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 339329

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chrysene	ND		330	27	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Dibenz(a,h)anthracene	ND		330	19	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Dibenzofuran	ND		330	20	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Diethyl phthalate	ND		660	26	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Dimethyl phthalate	ND		330	23	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Di-n-butyl phthalate	ND		330	29	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Di-n-octyl phthalate	ND		330	14	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Fluoranthene	ND		330	36	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Fluorene	ND		330	18	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Hexachlorobenzene	ND		330	29	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Hexachlorobutadiene	ND		330	10	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Hexachloroethane	ND		330	21	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Indeno[1,2,3-cd]pyrene	ND		330	22	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Isophorone	ND		330	17	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Naphthalene	ND		330	31	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Nitrobenzene	ND		330	22	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
N-Nitrosodi-n-propylamine	ND		330	31	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
n-Nitrosodiphenylamine(as diphenylamine)	ND		330	21	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Pentachlorophenol	ND		1600	330	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Phenanthrene	ND		330	17	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Phenol	ND		330	18	ug/Kg		08/24/16 14:29	08/29/16 15:34	1
Pyrene	ND		330	12	ug/Kg		08/24/16 14:29	08/29/16 15:34	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*66*		*24 - 135*	*08/24/16 14:29*	*08/29/16 15:34*	*1*
2-Fluorobiphenyl	*72*		*33 - 135*	*08/24/16 14:29*	*08/29/16 15:34*	*1*
2-Fluorophenol	*69*		*39 - 135*	*08/24/16 14:29*	*08/29/16 15:34*	*1*
Nitrobenzene-d5	*65*		*32 - 135*	*08/24/16 14:29*	*08/29/16 15:34*	*1*
Phenol-d5	*73*		*39 - 135*	*08/24/16 14:29*	*08/29/16 15:34*	*1*
Terphenyl-d14	*83*		*30 - 135*	*08/24/16 14:29*	*08/29/16 15:34*	*1*

Lab Sample ID: LCS 280-339329/2-A
Matrix: Solid
Analysis Batch: 339947

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 339329

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trichlorobenzene	2670	2020		ug/Kg		76	49 - 135
1,2-Dichlorobenzene	2670	2050		ug/Kg		77	48 - 135
1,3-Dichlorobenzene	2670	1970		ug/Kg		74	47 - 135
1,4-Dichlorobenzene	2670	2030		ug/Kg		76	47 - 135
2,2'-oxybis[1-chloropropane]	2670	1790		ug/Kg		67	36 - 135
2,4,5-Trichlorophenol	2670	2130		ug/Kg		80	55 - 135
2,4,6-Trichlorophenol	2670	2210		ug/Kg		83	55 - 135
2,4-Dichlorophenol	2670	2080		ug/Kg		78	54 - 135
2,4-Dimethylphenol	2670	1970		ug/Kg		74	51 - 135
2,4-Dinitrotoluene	2670	2330		ug/Kg		88	59 - 135
2,6-Dinitrotoluene	2670	2330		ug/Kg		87	58 - 135

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 280-339329/2-A
Matrix: Solid
Analysis Batch: 339947

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 339329

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Chloronaphthalene	2670	2050		ug/Kg		77	53 - 135
2-Chlorophenol	2670	2090		ug/Kg		78	47 - 135
2-Methylnaphthalene	2670	2120		ug/Kg		79	55 - 135
2-Methylphenol	2670	2050		ug/Kg		77	47 - 135
2-Nitroaniline	2670	2070		ug/Kg		77	47 - 135
2-Nitrophenol	2670	2150		ug/Kg		81	48 - 135
3 & 4 Methylphenol	2670	2080		ug/Kg		78	47 - 135
3,3'-Dichlorobenzidine	2670	2530		ug/Kg		95	30 - 135
3-Nitroaniline	2670	2060		ug/Kg		77	39 - 135
4,6-Dinitro-2-methylphenol	5330	4430		ug/Kg		83	50 - 135
4-Bromophenyl phenyl ether	2670	2140		ug/Kg		80	57 - 135
4-Chloro-3-methylphenol	2670	2190		ug/Kg		82	55 - 135
4-Chloroaniline	2670	1810		ug/Kg		68	28 - 135
4-Chlorophenyl phenyl ether	2670	2170		ug/Kg		81	57 - 135
4-Nitroaniline	2670	2280		ug/Kg		86	50 - 135
4-Nitrophenol	5330	4100		ug/Kg		77	52 - 135
Acenaphthene	2670	2200		ug/Kg		83	55 - 135
Acenaphthylene	2670	2120		ug/Kg		80	57 - 135
Anthracene	2670	2280		ug/Kg		86	56 - 135
Benzo[a]anthracene	2670	2170		ug/Kg		82	54 - 135
Benzo[a]pyrene	2670	2160		ug/Kg		81	54 - 135
Benzo[b]fluoranthene	2670	2190		ug/Kg		82	54 - 135
Benzo[g,h,i]perylene	2670	2200		ug/Kg		82	55 - 135
Benzo[k]fluoranthene	2670	2240		ug/Kg		84	54 - 135
Bis(2-chloroethoxy)methane	2670	2040		ug/Kg		77	47 - 135
Bis(2-chloroethyl)ether	2670	2060		ug/Kg		77	42 - 135
Bis(2-ethylhexyl) phthalate	2670	2360		ug/Kg		89	49 - 135
Butyl benzyl phthalate	2670	2260		ug/Kg		85	49 - 135
Carbazole	2670	2330		ug/Kg		87	56 - 135
Chrysene	2670	2210		ug/Kg		83	55 - 135
Dibenz(a,h)anthracene	2670	2230		ug/Kg		84	50 - 135
Diethyl phthalate	2670	2300		ug/Kg		86	57 - 135
Dimethyl phthalate	2670	2220		ug/Kg		83	56 - 135
Di-n-butyl phthalate	2670	2360		ug/Kg		89	53 - 135
Di-n-octyl phthalate	2670	2290		ug/Kg		86	46 - 135
Fluoranthene	2670	2310		ug/Kg		86	57 - 135
Fluorene	2670	2220		ug/Kg		83	57 - 135
Hexachlorobenzene	2670	2150		ug/Kg		80	57 - 135
Hexachlorobutadiene	2670	1960		ug/Kg		73	47 - 135
Hexachloroethane	2670	1920		ug/Kg		72	45 - 135
Indeno[1,2,3-cd]pyrene	2670	2170		ug/Kg		81	50 - 135
Isophorone	2670	1940		ug/Kg		73	49 - 135
Naphthalene	2670	2060		ug/Kg		77	50 - 135
Nitrobenzene	2670	1950		ug/Kg		73	45 - 135
N-Nitrosodi-n-propylamine	2670	1990		ug/Kg		74	42 - 135
n-Nitrosodiphenylamine(as diphenylamine)	2670	2230		ug/Kg		84	50 - 135
Pentachlorophenol	5330	4140		ug/Kg		78	37 - 135

Method: 8270C - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 280-339329/2-A
Matrix: Solid
Analysis Batch: 339947

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 339329

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Phenanthrene			2670	2270		ug/Kg		85	57 - 135		
Phenol			2670	2030		ug/Kg		76	45 - 135		
Pyrene			2670	2200		ug/Kg		82	55 - 135		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol	*78*		*24 - 135*
2-Fluorobiphenyl	*76*		*33 - 135*
2-Fluorophenol	*75*		*39 - 135*
Nitrobenzene-d5	*71*		*32 - 135*
Phenol-d5	*77*		*39 - 135*
Terphenyl-d14	*82*		*30 - 135*

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 280-339106/1-A
Matrix: Solid
Analysis Batch: 340485

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 339106

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endosulfan I	ND		1.7	0.18	ug/Kg		08/23/16 11:33	09/01/16 20:35	1
Endosulfan II	ND		1.7	0.29	ug/Kg		08/23/16 11:33	09/01/16 20:35	1
Endosulfan sulfate	ND		1.7	0.28	ug/Kg		08/23/16 11:33	09/01/16 20:35	1
Endrin	ND		1.7	0.31	ug/Kg		08/23/16 11:33	09/01/16 20:35	1
Endrin aldehyde	ND		1.7	0.17	ug/Kg		08/23/16 11:33	09/01/16 20:35	1
Endrin ketone	ND		1.7	0.49	ug/Kg		08/23/16 11:33	09/01/16 20:35	1
beta-BHC	ND		1.7	0.66	ug/Kg		08/23/16 11:33	09/01/16 20:35	1
alpha-BHC	ND		1.7	0.21	ug/Kg		08/23/16 11:33	09/01/16 20:35	1
delta-BHC	ND		1.7	0.40	ug/Kg		08/23/16 11:33	09/01/16 20:35	1
gamma-BHC (Lindane)	ND		1.7	0.46	ug/Kg		08/23/16 11:33	09/01/16 20:35	1
gamma-Chlordane	ND		1.7	0.27	ug/Kg		08/23/16 11:33	09/01/16 20:35	1
4,4'-DDD	ND		1.7	0.55	ug/Kg		08/23/16 11:33	09/01/16 20:35	1
4,4'-DDE	ND		1.7	0.24	ug/Kg		08/23/16 11:33	09/01/16 20:35	1
4,4'-DDT	ND		1.7	0.59	ug/Kg		08/23/16 11:33	09/01/16 20:35	1
Heptachlor	ND		1.7	0.21	ug/Kg		08/23/16 11:33	09/01/16 20:35	1
Heptachlor epoxide	ND		1.7	0.43	ug/Kg		08/23/16 11:33	09/01/16 20:35	1
Dieldrin	ND		1.7	0.21	ug/Kg		08/23/16 11:33	09/01/16 20:35	1
Aldrin	ND		1.7	0.25	ug/Kg		08/23/16 11:33	09/01/16 20:35	1
Methoxychlor	ND		3.3	0.45	ug/Kg		08/23/16 11:33	09/01/16 20:35	1
Toxaphene	ND		67	16	ug/Kg		08/23/16 11:33	09/01/16 20:35	1
alpha-Chlordane	ND		1.7	0.32	ug/Kg		08/23/16 11:33	09/01/16 20:35	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*77*		*63 - 124*	*08/23/16 11:33*	*09/01/16 20:35*	*1*
Tetrachloro-m-xylene	*85*		*59 - 115*	*08/23/16 11:33*	*09/01/16 20:35*	*1*

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 280-339106/2-A
Matrix: Solid
Analysis Batch: 340485

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 339106

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Endosulfan I	16.7	13.1		ug/Kg		79	67 - 115
Endosulfan II	16.7	13.0		ug/Kg		78	69 - 120
Endosulfan sulfate	16.7	13.6		ug/Kg		82	69 - 126
Endrin	16.7	14.3		ug/Kg		86	69 - 129
Endrin aldehyde	16.7	11.9		ug/Kg		71	41 - 128
Endrin ketone	16.7	13.4		ug/Kg		80	70 - 125
beta-BHC	16.7	13.0		ug/Kg		78	62 - 121
alpha-BHC	16.7	13.2		ug/Kg		79	65 - 122
delta-BHC	16.7	13.1		ug/Kg		78	67 - 122
gamma-BHC (Lindane)	16.7	13.3		ug/Kg		80	66 - 120
gamma-Chlordane	16.7	13.3		ug/Kg		80	69 - 122
4,4'-DDD	16.7	13.0		ug/Kg		78	69 - 126
4,4'-DDE	16.7	13.1		ug/Kg		78	71 - 116
4,4'-DDT	16.7	14.3		ug/Kg		86	67 - 132
Heptachlor	16.7	14.0		ug/Kg		84	61 - 126
Heptachlor epoxide	16.7	13.2		ug/Kg		79	71 - 119
Dieldrin	16.7	13.2		ug/Kg		79	71 - 120
Aldrin	16.7	12.9		ug/Kg		77	69 - 116
alpha-Chlordane	16.7	13.1		ug/Kg		79	71 - 118

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*80*		*63 - 124*
Tetrachloro-m-xylene	*84*		*59 - 115*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 280-339106/1-A
Matrix: Solid
Analysis Batch: 340670

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 339106

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1221	ND		47	16	ug/Kg		08/23/16 11:33	09/02/16 11:03	1
PCB-1016	ND		33	5.1	ug/Kg		08/23/16 11:33	09/02/16 11:03	1
PCB-1232	ND		33	5.1	ug/Kg		08/23/16 11:33	09/02/16 11:03	1
PCB-1242	ND		33	9.1	ug/Kg		08/23/16 11:33	09/02/16 11:03	1
PCB-1248	ND		33	5.6	ug/Kg		08/23/16 11:33	09/02/16 11:03	1
PCB-1254	ND		33	5.5	ug/Kg		08/23/16 11:33	09/02/16 11:03	1
PCB-1260	ND		33	2.7	ug/Kg		08/23/16 11:33	09/02/16 11:03	1
PCB-1262	ND		33	12	ug/Kg		08/23/16 11:33	09/02/16 11:03	1
PCB-1268	ND		33	4.0	ug/Kg		08/23/16 11:33	09/02/16 11:03	1
Polychlorinated biphenyls, Total	ND		33	2.7	ug/Kg		08/23/16 11:33	09/02/16 11:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*97*		*53 - 128*	*08/23/16 11:33*	*09/02/16 11:03*	*1*
DCB Decachlorobiphenyl	*94*		*59 - 130*	*08/23/16 11:33*	*09/02/16 11:03*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCS 280-339106/4-A
Matrix: Solid
Analysis Batch: 340670

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 339106

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
PCB-1016			66.7	69.5		ug/Kg		104	54 - 132		
PCB-1260			66.7	67.9		ug/Kg		102	62 - 129		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*99*		*53 - 128*
DCB Decachlorobiphenyl	*97*		*59 - 130*

Lab Sample ID: 280-86822-5 MS
Matrix: Solid
Analysis Batch: 340670

Client Sample ID: AC-SED-02-0.005
Prep Type: Total/NA
Prep Batch: 339106

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
PCB-1016	ND		66.7	58.2		ug/Kg	☼	87	54 - 132		
PCB-1260	ND		66.7	54.1		ug/Kg	☼	81	62 - 129		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Tetrachloro-m-xylene	*91*		*53 - 128*
DCB Decachlorobiphenyl	*76*		*59 - 130*

Lab Sample ID: 280-86822-5 MSD
Matrix: Solid
Analysis Batch: 340670

Client Sample ID: AC-SED-02-0.005
Prep Type: Total/NA
Prep Batch: 339106

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	ND		67.1	62.0		ug/Kg	☼	92	54 - 132	6	36
PCB-1260	ND		67.1	57.1		ug/Kg	☼	85	62 - 129	6	44

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*89*		*53 - 128*
DCB Decachlorobiphenyl	*75*		*59 - 130*

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 680-446438/16-A
Matrix: Solid
Analysis Batch: 446716

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 446438

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,5-T	ND		8.3	2.3	ug/Kg		08/19/16 08:46	08/22/16 19:51	1
2,4-D	ND		8.3	5.0	ug/Kg		08/19/16 08:46	08/22/16 19:51	1
2,4-DB	ND		8.3	3.0	ug/Kg		08/19/16 08:46	08/22/16 19:51	1
Dalapon	ND		100	2.9	ug/Kg		08/19/16 08:46	08/22/16 19:51	1
Dicamba	ND		8.3	1.9	ug/Kg		08/19/16 08:46	08/22/16 19:51	1
Dichlorprop	ND		8.3	1.1	ug/Kg		08/19/16 08:46	08/22/16 19:51	1
MCPA	ND		2000	190	ug/Kg		08/19/16 08:46	08/22/16 19:51	1
MCPP	ND		2000	170	ug/Kg		08/19/16 08:46	08/22/16 19:51	1
Silvex (2,4,5-TP)	ND		8.3	1.6	ug/Kg		08/19/16 08:46	08/22/16 19:51	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	43		35 - 137	08/19/16 08:46	08/22/16 19:51	1

Lab Sample ID: LCS 680-446438/17-A
Matrix: Solid
Analysis Batch: 446716

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 446438

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4,5-T	16.7	7.44	J	ug/Kg		45	17 - 130
2,4-D	66.6	37.9		ug/Kg		57	53 - 130
2,4-DB	66.6	13.7		ug/Kg		21	10 - 130
Dalapon	66.6	57.2	J p	ug/Kg		86	19 - 130
Dicamba	33.3	24.1		ug/Kg		72	58 - 130
Dichlorprop	66.6	36.0		ug/Kg		54	23 - 130
MCPA	6660	3210		ug/Kg		48	47 - 130
MCPP	6660	3300		ug/Kg		50	10 - 130
Silvex (2,4,5-TP)	16.7	9.37		ug/Kg		56	29 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCAA	47		35 - 137

Method: 8330B - Nitroaromatics and Nitramines (HPLC)

Lab Sample ID: MB 280-338903/1-A
Matrix: Solid
Analysis Batch: 339739

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 338903

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Amino-4,6-dinitrotoluene	ND		0.10	0.033	mg/Kg		08/22/16 12:45	08/27/16 04:12	1
4-Amino-2,6-dinitrotoluene	ND		0.10	0.030	mg/Kg		08/22/16 12:45	08/27/16 04:12	1
2,4-Dinitrotoluene	ND		0.10	0.015	mg/Kg		08/22/16 12:45	08/27/16 04:12	1
2,6-Dinitrotoluene	ND		0.10	0.019	mg/Kg		08/22/16 12:45	08/27/16 04:12	1
o-Nitrotoluene	ND		0.20	0.047	mg/Kg		08/22/16 12:45	08/27/16 04:12	1
m-Nitrotoluene	ND		0.20	0.064	mg/Kg		08/22/16 12:45	08/27/16 04:12	1
Nitrobenzene	ND		0.30	0.085	mg/Kg		08/22/16 12:45	08/27/16 04:12	1
p-Nitrotoluene	ND		0.20	0.037	mg/Kg		08/22/16 12:45	08/27/16 04:12	1
1,3,5-Trinitrobenzene	ND		0.10	0.014	mg/Kg		08/22/16 12:45	08/27/16 04:12	1
1,3-Dinitrobenzene	ND		0.10	0.017	mg/Kg		08/22/16 12:45	08/27/16 04:12	1
HMX	0.0367	J	0.10	0.023	mg/Kg		08/22/16 12:45	08/27/16 04:12	1
RDX	ND		0.20	0.043	mg/Kg		08/22/16 12:45	08/27/16 04:12	1
Tetryl	ND		0.20	0.044	mg/Kg		08/22/16 12:45	08/27/16 04:12	1
2,4,6-Trinitrotoluene	ND		0.10	0.031	mg/Kg		08/22/16 12:45	08/27/16 04:12	1
3,5-Dinitroaniline	ND		0.10	0.0090	mg/Kg		08/22/16 12:45	08/27/16 04:12	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dinitrobenzene	103		83 - 122	08/22/16 12:45	08/27/16 04:12	1

Lab Sample ID: LCS 280-338903/12-A
Matrix: Solid
Analysis Batch: 339739

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 338903

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
3,5-Dinitroaniline	1.00	1.07		mg/Kg		107	80 - 120

Method: 8330B - Nitroaromatics and Nitramines (HPLC) (Continued)

Lab Sample ID: LCS 280-338903/12-A
Matrix: Solid
Analysis Batch: 339739

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 338903

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dinitrobenzene	105		83 - 122

Lab Sample ID: LCS 280-338903/2-A
Matrix: Solid
Analysis Batch: 339739

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 338903

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Amino-4,6-dinitrotoluene	1.00	1.08		mg/Kg		108	78 - 120
4-Amino-2,6-dinitrotoluene	1.00	0.892		mg/Kg		89	80 - 120
2,4-Dinitrotoluene	1.00	1.00		mg/Kg		100	80 - 120
2,6-Dinitrotoluene	1.00	0.857		mg/Kg		86	80 - 120
o-Nitrotoluene	1.00	0.966		mg/Kg		97	80 - 124
m-Nitrotoluene	1.00	1.00		mg/Kg		100	80 - 122
Nitrobenzene	1.00	1.01		mg/Kg		101	76 - 122
p-Nitrotoluene	1.00	1.05		mg/Kg		105	80 - 120
1,3,5-Trinitrobenzene	1.00	0.990		mg/Kg		99	80 - 120
1,3-Dinitrobenzene	1.00	1.09		mg/Kg		109	80 - 120
HMX	1.00	0.891		mg/Kg		89	80 - 120
RDX	1.00	1.13		mg/Kg		113	80 - 124
Tetryl	1.00	1.01		mg/Kg		101	80 - 120
2,4,6-Trinitrotoluene	1.00	1.14		mg/Kg		114	80 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dinitrobenzene	105		83 - 122

Lab Sample ID: 280-86822-2 MS
Matrix: Solid
Analysis Batch: 339739

Client Sample ID: AC-EXP-BD
Prep Type: Total/NA
Prep Batch: 338903

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
3,5-Dinitroaniline	ND		0.958	0.804		mg/Kg		84	80 - 120

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dinitrobenzene	104		83 - 122

Lab Sample ID: 280-86822-2 MSD
Matrix: Solid
Analysis Batch: 339739

Client Sample ID: AC-EXP-BD
Prep Type: Total/NA
Prep Batch: 338903

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
3,5-Dinitroaniline	ND		0.983	0.792		mg/Kg		81	80 - 120	2	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dinitrobenzene	103		83 - 122

Method: 8330B - Nitroaromatics and Nitramines (HPLC) (Continued)

Lab Sample ID: 280-86822-3 MS
Matrix: Solid
Analysis Batch: 339739

Client Sample ID: DUPE-EXP
Prep Type: Total/NA
Prep Batch: 338903

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Amino-4,6-dinitrotoluene	ND		0.993	0.907		mg/Kg		91	78 - 120
4-Amino-2,6-dinitrotoluene	ND	F1	0.993	0.332	F1	mg/Kg		33	80 - 120
2,4-Dinitrotoluene	ND		0.993	1.02		mg/Kg		103	80 - 120
2,6-Dinitrotoluene	ND		0.993	0.918		mg/Kg		92	80 - 120
o-Nitrotoluene	ND		0.993	0.941		mg/Kg		95	80 - 124
m-Nitrotoluene	ND		0.993	0.960		mg/Kg		97	80 - 122
Nitrobenzene	ND		0.993	0.994		mg/Kg		100	76 - 122
p-Nitrotoluene	ND		0.993	1.01		mg/Kg		102	80 - 120
1,3,5-Trinitrobenzene	ND		0.993	1.15		mg/Kg		116	80 - 120
1,3-Dinitrobenzene	ND		0.993	1.07		mg/Kg		108	80 - 120
HMX	ND		0.993	1.03		mg/Kg		103	80 - 120
RDX	ND		0.993	1.03		mg/Kg		104	80 - 124
Tetryl	ND		0.993	1.00		mg/Kg		101	80 - 120
2,4,6-Trinitrotoluene	ND		0.993	1.17		mg/Kg		118	80 - 120

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dinitrobenzene	*103*		*83 - 122*

Lab Sample ID: 280-86822-3 MSD
Matrix: Solid
Analysis Batch: 339739

Client Sample ID: DUPE-EXP
Prep Type: Total/NA
Prep Batch: 338903

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Amino-4,6-dinitrotoluene	ND		0.998	0.901		mg/Kg		90	78 - 120	1	30
4-Amino-2,6-dinitrotoluene	ND	F1	0.998	0.302	F1	mg/Kg		30	80 - 120	9	30
2,4-Dinitrotoluene	ND		0.998	1.01		mg/Kg		101	80 - 120	1	30
2,6-Dinitrotoluene	ND		0.998	0.915		mg/Kg		92	80 - 120	0	30
o-Nitrotoluene	ND		0.998	0.948		mg/Kg		95	80 - 124	1	30
m-Nitrotoluene	ND		0.998	0.976		mg/Kg		98	80 - 122	2	30
Nitrobenzene	ND		0.998	1.01		mg/Kg		101	76 - 122	2	30
p-Nitrotoluene	ND		0.998	1.03		mg/Kg		103	80 - 120	1	30
1,3,5-Trinitrobenzene	ND		0.998	1.15		mg/Kg		115	80 - 120	0	30
1,3-Dinitrobenzene	ND		0.998	1.08		mg/Kg		108	80 - 120	1	30
HMX	ND		0.998	1.05		mg/Kg		105	80 - 120	2	30
RDX	ND		0.998	0.984		mg/Kg		99	80 - 124	5	30
Tetryl	ND		0.998	1.00		mg/Kg		100	80 - 120	0	30
2,4,6-Trinitrotoluene	ND		0.998	1.19		mg/Kg		119	80 - 120	1	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dinitrobenzene	*105*		*83 - 122*

Lab Sample ID: 280-86822-3 DU
Matrix: Solid
Analysis Batch: 339739

Client Sample ID: DUPE-EXP
Prep Type: Total/NA
Prep Batch: 338903

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
2-Amino-4,6-dinitrotoluene	ND		ND		mg/Kg		NC	

Method: 8330B - Nitroaromatics and Nitramines (HPLC) (Continued)

Lab Sample ID: 280-86822-3 DU
Matrix: Solid
Analysis Batch: 339739

Client Sample ID: DUPE-EXP
Prep Type: Total/NA
Prep Batch: 338903

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
4-Amino-2,6-dinitrotoluene	ND	F1		ND		mg/Kg				NC	
2,4-Dinitrotoluene	ND			ND		mg/Kg				NC	
2,6-Dinitrotoluene	ND			ND		mg/Kg				NC	
o-Nitrotoluene	ND			ND		mg/Kg				NC	
m-Nitrotoluene	ND			ND		mg/Kg				NC	
Nitrobenzene	ND			ND		mg/Kg				NC	
p-Nitrotoluene	ND			ND		mg/Kg				NC	
1,3,5-Trinitrobenzene	ND			ND		mg/Kg				NC	
1,3-Dinitrobenzene	ND			ND		mg/Kg				NC	
HMX	ND			ND		mg/Kg				NC	
RDX	ND			ND		mg/Kg				NC	
Tetryl	ND			ND		mg/Kg				NC	
2,4,6-Trinitrotoluene	ND			ND		mg/Kg				NC	
3,5-Dinitroaniline	ND			ND		mg/Kg				NC	

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
1,2-Dinitrobenzene	*104*		*83 - 122*

Lab Sample ID: 280-86822-3 TRL
Matrix: Solid
Analysis Batch: 339739

Client Sample ID: TRIP
Prep Type: Total/NA
Prep Batch: 338903

Analyte	Sample Result	Sample Qualifier		TRL Result	TRL Qualifier	Unit	D			RSD	RSD Limit
2-Amino-4,6-dinitrotoluene	ND			ND		mg/Kg				NC	20
4-Amino-2,6-dinitrotoluene	ND	F1		ND		mg/Kg				NC	20
2,4-Dinitrotoluene	ND			ND		mg/Kg				NC	20
2,6-Dinitrotoluene	ND			ND		mg/Kg				NC	20
o-Nitrotoluene	ND			ND		mg/Kg				NC	20
m-Nitrotoluene	ND			ND		mg/Kg				NC	20
Nitrobenzene	ND			ND		mg/Kg				NC	20
p-Nitrotoluene	ND			ND		mg/Kg				NC	20
1,3,5-Trinitrobenzene	ND			ND		mg/Kg				NC	20
1,3-Dinitrobenzene	ND			ND		mg/Kg				NC	20
HMX	ND			ND		mg/Kg				NC	20
RDX	ND			ND		mg/Kg				NC	20
Tetryl	ND			ND		mg/Kg				NC	20
2,4,6-Trinitrotoluene	ND			ND		mg/Kg				NC	20
3,5-Dinitroaniline	ND			ND		mg/Kg				NC	20

Surrogate	*TRL %Recovery*	*TRL Qualifier*	*Limits*
1,2-Dinitrobenzene	*105*		*83 - 122*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 280-338838/1-A
Matrix: Solid
Analysis Batch: 339852

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 338838

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		2.0	0.66	mg/Kg		08/23/16 07:50	08/27/16 15:32	1
Barium	0.199	J	1.0	0.076	mg/Kg		08/23/16 07:50	08/27/16 15:32	1
Cadmium	ND		0.50	0.041	mg/Kg		08/23/16 07:50	08/27/16 15:32	1
Chromium	0.0700	J	1.5	0.058	mg/Kg		08/23/16 07:50	08/27/16 15:32	1
Copper	ND		2.0	0.22	mg/Kg		08/23/16 07:50	08/27/16 15:32	1
Selenium	ND		1.5	0.86	mg/Kg		08/23/16 07:50	08/27/16 15:32	1
Tin	ND		10	0.91	mg/Kg		08/23/16 07:50	08/27/16 15:32	1
Silver	ND		1.0	0.16	mg/Kg		08/23/16 07:50	08/27/16 15:32	1
Zinc	0.606	J	3.0	0.40	mg/Kg		08/23/16 07:50	08/27/16 15:32	1
Antimony	ND		1.5	0.38	mg/Kg		08/23/16 07:50	08/27/16 15:32	1
Lead	ND		0.90	0.27	mg/Kg		08/23/16 07:50	08/27/16 15:32	1

Lab Sample ID: LCS 280-338838/2-A
Matrix: Solid
Analysis Batch: 339852

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 338838

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	100	105		mg/Kg		105	85 - 110
Barium	200	194		mg/Kg		97	87 - 112
Cadmium	10.0	10.6		mg/Kg		106	87 - 110
Chromium	20.0	21.9		mg/Kg		109	84 - 114
Copper	25.0	26.1		mg/Kg		104	88 - 110
Selenium	200	195		mg/Kg		98	83 - 110
Tin	200	204		mg/Kg		102	84 - 110
Silver	5.00	5.21		mg/Kg		104	87 - 114
Zinc	50.0	49.5		mg/Kg		99	76 - 114
Antimony	50.0	52.1		mg/Kg		104	82 - 110
Lead	50.0	50.6		mg/Kg		101	86 - 110

Lab Sample ID: 280-86822-4 MS
Matrix: Solid
Analysis Batch: 339852

Client Sample ID: AC-SED-01-0.005
Prep Type: Total/NA
Prep Batch: 338838

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	6.3	F2	101	93.9		mg/Kg	☼	87	76 - 111
Barium	150	B	203	307		mg/Kg	☼	78	52 - 159
Cadmium	1.7	F2	10.1	10.4		mg/Kg	☼	86	40 - 130
Chromium	13	B	20.3	38.3		mg/Kg	☼	124	70 - 200
Copper	21		25.3	42.4		mg/Kg	☼	85	37 - 187
Selenium	1.0	J F2	203	162		mg/Kg	☼	79	76 - 104
Tin	2.2	J F1 F2	203	158		mg/Kg	☼	77	77 - 126
Silver	ND	F2	5.06	4.52		mg/Kg	☼	89	75 - 141
Zinc	68	B	50.6	111		mg/Kg	☼	85	70 - 200
Antimony	ND	F2	50.6	17.4		mg/Kg	☼	34	20 - 200
Lead	28		50.6	65.7		mg/Kg	☼	74	70 - 200

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 280-86822-4 MSD — **Client Sample ID: AC-SED-01-0.005**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 339852 — **Prep Batch: 338838**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	6.3	F2	77.4	72.0	F2	mg/Kg	☼	85	76 - 111	26	20
Barium	150	B	155	270		mg/Kg	☼	79	52 - 159	13	20
Cadmium	1.7	F2	7.74	8.36	F2	mg/Kg	☼	86	40 - 130	22	20
Chromium	13	B	15.5	33.2		mg/Kg	☼	129	70 - 200	14	20
Copper	21		19.3	37.1		mg/Kg	☼	84	37 - 187	13	20
Selenium	1.0	J F2	155	123	F2	mg/Kg	☼	79	76 - 104	28	20
Tin	2.2	J F1 F2	155	117	F1 F2	mg/Kg	☼	74	77 - 126	30	20
Silver	ND	F2	3.87	3.52	F2	mg/Kg	☼	91	75 - 141	25	20
Zinc	68	B	38.7	106		mg/Kg	☼	97	70 - 200	5	20
Antimony	ND	F2	38.7	10.1	F2	mg/Kg	☼	26	20 - 200	53	20
Lead	28		38.7	55.4		mg/Kg	☼	70	70 - 200	17	20

Method: 7471B - Mercury (CVAA)

Lab Sample ID: MB 280-338872/1-A — **Client Sample ID: Method Blank**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 339690 — **Prep Batch: 338872**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.017	0.0055	mg/Kg		08/25/16 12:45	08/25/16 19:28	1

Lab Sample ID: LCS 280-338872/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 339690 — **Prep Batch: 338872**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.417	0.449		mg/Kg		108	87 - 111

Lab Sample ID: 280-86822-4 MS — **Client Sample ID: AC-SED-01-0.005**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 339690 — **Prep Batch: 338872**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.022	F2	0.470	0.444		mg/Kg	☼	90	87 - 111

Lab Sample ID: 280-86822-4 MSD — **Client Sample ID: AC-SED-01-0.005**
Matrix: Solid — **Prep Type: Total/NA**
Analysis Batch: 339690 — **Prep Batch: 338872**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.022	F2	0.515	0.577	F2	mg/Kg	☼	108	87 - 111	26	20

GC/MS VOA

Analysis Batch: 338344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86822-4	AC-SED-01-0.005	Total/NA	Solid	8260B	338552
280-86822-5	AC-SED-02-0.005	Total/NA	Solid	8260B	338552
280-86822-6	AC-SED-03-0.005	Total/NA	Solid	8260B	338552
280-86822-11	DUPE-SED	Total/NA	Solid	8260B	338552
MB 280-338552/1-A	Method Blank	Total/NA	Solid	8260B	338552
LCS 280-338552/2-A	Lab Control Sample	Total/NA	Solid	8260B	338552
LCSD 280-338552/25-A	Lab Control Sample Dup	Total/NA	Solid	8260B	338552

Prep Batch: 338552

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86822-4	AC-SED-01-0.005	Total/NA	Solid	5030B	
280-86822-5	AC-SED-02-0.005	Total/NA	Solid	5030B	
280-86822-6	AC-SED-03-0.005	Total/NA	Solid	5030B	
280-86822-11	DUPE-SED	Total/NA	Solid	5030B	
MB 280-338552/1-A	Method Blank	Total/NA	Solid	5030B	
LCS 280-338552/2-A	Lab Control Sample	Total/NA	Solid	5030B	
LCSD 280-338552/25-A	Lab Control Sample Dup	Total/NA	Solid	5030B	

GC/MS Semi VOA

Prep Batch: 339329

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86822-4	AC-SED-01-0.005	Total/NA	Solid	3550C	
280-86822-5	AC-SED-02-0.005	Total/NA	Solid	3550C	
280-86822-6	AC-SED-03-0.005	Total/NA	Solid	3550C	
280-86822-11	DUPE-SED	Total/NA	Solid	3550C	
MB 280-339329/1-A	Method Blank	Total/NA	Solid	3550C	
LCS 280-339329/2-A	Lab Control Sample	Total/NA	Solid	3550C	

Analysis Batch: 339947

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86822-4	AC-SED-01-0.005	Total/NA	Solid	8270C	339329
280-86822-5	AC-SED-02-0.005	Total/NA	Solid	8270C	339329
280-86822-6	AC-SED-03-0.005	Total/NA	Solid	8270C	339329
280-86822-11	DUPE-SED	Total/NA	Solid	8270C	339329
MB 280-339329/1-A	Method Blank	Total/NA	Solid	8270C	339329
LCS 280-339329/2-A	Lab Control Sample	Total/NA	Solid	8270C	339329

GC Semi VOA

Prep Batch: 339106

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86822-4	AC-SED-01-0.005	Total/NA	Solid	3546	
280-86822-5	AC-SED-02-0.005	Total/NA	Solid	3546	
280-86822-6	AC-SED-03-0.005	Total/NA	Solid	3546	
280-86822-11	DUPE-SED	Total/NA	Solid	3546	
MB 280-339106/1-A	Method Blank	Total/NA	Solid	3546	
LCS 280-339106/2-A	Lab Control Sample	Total/NA	Solid	3546	
LCS 280-339106/4-A	Lab Control Sample	Total/NA	Solid	3546	
280-86822-5 MS	AC-SED-02-0.005	Total/NA	Solid	3546	

GC Semi VOA (Continued)

Prep Batch: 339106 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86822-5 MSD	AC-SED-02-0.005	Total/NA	Solid	3546	

Analysis Batch: 340485

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 280-339106/1-A	Method Blank	Total/NA	Solid	8081B	339106
LCS 280-339106/2-A	Lab Control Sample	Total/NA	Solid	8081B	339106

Analysis Batch: 340670

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86822-4	AC-SED-01-0.005	Total/NA	Solid	8082A	339106
280-86822-5	AC-SED-02-0.005	Total/NA	Solid	8082A	339106
280-86822-6	AC-SED-03-0.005	Total/NA	Solid	8082A	339106
280-86822-11	DUPE-SED	Total/NA	Solid	8082A	339106
MB 280-339106/1-A	Method Blank	Total/NA	Solid	8082A	339106
LCS 280-339106/4-A	Lab Control Sample	Total/NA	Solid	8082A	339106
280-86822-5 MS	AC-SED-02-0.005	Total/NA	Solid	8082A	339106
280-86822-5 MSD	AC-SED-02-0.005	Total/NA	Solid	8082A	339106

Analysis Batch: 341095

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86822-4	AC-SED-01-0.005	Total/NA	Solid	8081B	339106
280-86822-5	AC-SED-02-0.005	Total/NA	Solid	8081B	339106
280-86822-6	AC-SED-03-0.005	Total/NA	Solid	8081B	339106
280-86822-11	DUPE-SED	Total/NA	Solid	8081B	339106

Prep Batch: 446438

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86822-4	AC-SED-01-0.005	Total/NA	Solid	8151A	
280-86822-5	AC-SED-02-0.005	Total/NA	Solid	8151A	
280-86822-6	AC-SED-03-0.005	Total/NA	Solid	8151A	
280-86822-11	DUPE-SED	Total/NA	Solid	8151A	
MB 680-446438/16-A	Method Blank	Total/NA	Solid	8151A	
LCS 680-446438/17-A	Lab Control Sample	Total/NA	Solid	8151A	

Analysis Batch: 446716

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86822-4	AC-SED-01-0.005	Total/NA	Solid	8151A	446438
280-86822-5	AC-SED-02-0.005	Total/NA	Solid	8151A	446438
280-86822-6	AC-SED-03-0.005	Total/NA	Solid	8151A	446438
280-86822-11	DUPE-SED	Total/NA	Solid	8151A	446438
MB 680-446438/16-A	Method Blank	Total/NA	Solid	8151A	446438
LCS 680-446438/17-A	Lab Control Sample	Total/NA	Solid	8151A	446438

HPLC/IC

ISM Prep Batch: 338341

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86822-1	AC-EXP-RO	Total/NA	Solid	Increment, prep	
280-86822-2	AC-EXP-BD	Total/NA	Solid	Increment, prep	
280-86822-3	DUPE-EXP	Total/NA	Solid	Increment, prep	

HPLC/IC (Continued)

ISM Prep Batch: 338341 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86822-2 MS	AC-EXP-BD	Total/NA	Solid	Increment, prep	
280-86822-2 MSD	AC-EXP-BD	Total/NA	Solid	Increment, prep	
280-86822-3 MS	DUPE-EXP	Total/NA	Solid	Increment, prep	
280-86822-3 MSD	DUPE-EXP	Total/NA	Solid	Increment, prep	
280-86822-3 DU	DUPE-EXP	Total/NA	Solid	Increment, prep	
280-86822-3 TRL	TRIP	Total/NA	Solid	Increment, prep	

Prep Batch: 338903

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86822-1	AC-EXP-RO	Total/NA	Solid	8330B	338341
280-86822-2	AC-EXP-BD	Total/NA	Solid	8330B	338341
280-86822-3	DUPE-EXP	Total/NA	Solid	8330B	338341
MB 280-338903/1-A	Method Blank	Total/NA	Solid	8330B	
LCS 280-338903/12-A	Lab Control Sample	Total/NA	Solid	8330B	
LCS 280-338903/2-A	Lab Control Sample	Total/NA	Solid	8330B	
280-86822-2 MS	AC-EXP-BD	Total/NA	Solid	8330B	338341
280-86822-2 MSD	AC-EXP-BD	Total/NA	Solid	8330B	338341
280-86822-3 MS	DUPE-EXP	Total/NA	Solid	8330B	338341
280-86822-3 MSD	DUPE-EXP	Total/NA	Solid	8330B	338341
280-86822-3 DU	DUPE-EXP	Total/NA	Solid	8330B	338341
280-86822-3 TRL	TRIP	Total/NA	Solid	8330B	338341

Analysis Batch: 339739

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86822-1	AC-EXP-RO	Total/NA	Solid	8330B	338903
280-86822-2	AC-EXP-BD	Total/NA	Solid	8330B	338903
280-86822-3	DUPE-EXP	Total/NA	Solid	8330B	338903
MB 280-338903/1-A	Method Blank	Total/NA	Solid	8330B	338903
LCS 280-338903/12-A	Lab Control Sample	Total/NA	Solid	8330B	338903
LCS 280-338903/2-A	Lab Control Sample	Total/NA	Solid	8330B	338903
280-86822-2 MS	AC-EXP-BD	Total/NA	Solid	8330B	338903
280-86822-2 MSD	AC-EXP-BD	Total/NA	Solid	8330B	338903
280-86822-3 MS	DUPE-EXP	Total/NA	Solid	8330B	338903
280-86822-3 MSD	DUPE-EXP	Total/NA	Solid	8330B	338903
280-86822-3 DU	DUPE-EXP	Total/NA	Solid	8330B	338903
280-86822-3 TRL	TRIP	Total/NA	Solid	8330B	338903

Metals

Prep Batch: 338838

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86822-4	AC-SED-01-0.005	Total/NA	Solid	3050B	
280-86822-5	AC-SED-02-0.005	Total/NA	Solid	3050B	
280-86822-6	AC-SED-03-0.005	Total/NA	Solid	3050B	
280-86822-7	AC-SED-04-0.005	Total/NA	Solid	3050B	
280-86822-8	AC-SED-05-0.005	Total/NA	Solid	3050B	
280-86822-9	AC-SED-06-0.005	Total/NA	Solid	3050B	
280-86822-10	AC-SED-07-0.005	Total/NA	Solid	3050B	
280-86822-11	DUPE-SED	Total/NA	Solid	3050B	
MB 280-338838/1-A	Method Blank	Total/NA	Solid	3050B	

Metals (Continued)

Prep Batch: 338838 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 280-338838/2-A	Lab Control Sample	Total/NA	Solid	3050B	
280-86822-4 MS	AC-SED-01-0.005	Total/NA	Solid	3050B	
280-86822-4 MSD	AC-SED-01-0.005	Total/NA	Solid	3050B	

Prep Batch: 338872

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86822-4	AC-SED-01-0.005	Total/NA	Solid	7471B	
280-86822-5	AC-SED-02-0.005	Total/NA	Solid	7471B	
280-86822-6	AC-SED-03-0.005	Total/NA	Solid	7471B	
280-86822-11	DUPE-SED	Total/NA	Solid	7471B	
MB 280-338872/1-A	Method Blank	Total/NA	Solid	7471B	
LCS 280-338872/2-A	Lab Control Sample	Total/NA	Solid	7471B	
280-86822-4 MS	AC-SED-01-0.005	Total/NA	Solid	7471B	
280-86822-4 MSD	AC-SED-01-0.005	Total/NA	Solid	7471B	

Analysis Batch: 339690

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86822-4	AC-SED-01-0.005	Total/NA	Solid	7471B	338872
280-86822-5	AC-SED-02-0.005	Total/NA	Solid	7471B	338872
280-86822-6	AC-SED-03-0.005	Total/NA	Solid	7471B	338872
280-86822-11	DUPE-SED	Total/NA	Solid	7471B	338872
MB 280-338872/1-A	Method Blank	Total/NA	Solid	7471B	338872
LCS 280-338872/2-A	Lab Control Sample	Total/NA	Solid	7471B	338872
280-86822-4 MS	AC-SED-01-0.005	Total/NA	Solid	7471B	338872
280-86822-4 MSD	AC-SED-01-0.005	Total/NA	Solid	7471B	338872

Analysis Batch: 339852

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86822-4	AC-SED-01-0.005	Total/NA	Solid	6010C	338838
280-86822-5	AC-SED-02-0.005	Total/NA	Solid	6010C	338838
280-86822-6	AC-SED-03-0.005	Total/NA	Solid	6010C	338838
280-86822-7	AC-SED-04-0.005	Total/NA	Solid	6010C	338838
280-86822-8	AC-SED-05-0.005	Total/NA	Solid	6010C	338838
280-86822-9	AC-SED-06-0.005	Total/NA	Solid	6010C	338838
280-86822-10	AC-SED-07-0.005	Total/NA	Solid	6010C	338838
280-86822-11	DUPE-SED	Total/NA	Solid	6010C	338838
MB 280-338838/1-A	Method Blank	Total/NA	Solid	6010C	338838
LCS 280-338838/2-A	Lab Control Sample	Total/NA	Solid	6010C	338838
280-86822-4 MS	AC-SED-01-0.005	Total/NA	Solid	6010C	338838
280-86822-4 MSD	AC-SED-01-0.005	Total/NA	Solid	6010C	338838

General Chemistry

Analysis Batch: 338084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86822-1	AC-EXP-RO	Total/NA	Solid	Moisture	
280-86822-2	AC-EXP-BD	Total/NA	Solid	Moisture	
280-86822-3	DUPE-EXP	Total/NA	Solid	Moisture	
280-86822-4	AC-SED-01-0.005	Total/NA	Solid	Moisture	
280-86822-5	AC-SED-02-0.005	Total/NA	Solid	Moisture	

General Chemistry (Continued)

Analysis Batch: 338084 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-86822-6	AC-SED-03-0.005	Total/NA	Solid	Moisture	
280-86822-7	AC-SED-04-0.005	Total/NA	Solid	Moisture	
280-86822-8	AC-SED-05-0.005	Total/NA	Solid	Moisture	
280-86822-9	AC-SED-06-0.005	Total/NA	Solid	Moisture	
280-86822-10	AC-SED-07-0.005	Total/NA	Solid	Moisture	
280-86822-11	DUPE-SED	Total/NA	Solid	Moisture	

Client Sample ID: AC-EXP-RO
Date Collected: 08/11/16 12:34
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	ISM Prep	Increment, prep					338341	08/17/16 16:21	GLK	TAL DEN
Total/NA	Prep	8330B			10.97 g	40 mL	338903	08/22/16 12:45	GLK	TAL DEN
Total/NA	Analysis	8330B		1			339739	08/27/16 04:58	ACF	TAL DEN
Total/NA	Analysis	Moisture		1			338084	08/16/16 09:08	IEU	TAL DEN

Client Sample ID: AC-EXP-BD
Date Collected: 08/11/16 12:35
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	ISM Prep	Increment, prep					338341	08/17/16 16:21	GLK	TAL DEN
Total/NA	Prep	8330B			10.01 g	40 mL	338903	08/22/16 12:45	GLK	TAL DEN
Total/NA	Analysis	8330B		1			339739	08/27/16 05:20	ACF	TAL DEN
Total/NA	Analysis	Moisture		1			338084	08/16/16 09:08	IEU	TAL DEN

Client Sample ID: DUPE-EXP
Date Collected: 08/11/16 00:00
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	ISM Prep	Increment, prep					338341	08/17/16 16:21	GLK	TAL DEN
Total/NA	Prep	8330B			10.05 g	40 mL	338903	08/22/16 12:45	GLK	TAL DEN
Total/NA	Analysis	8330B		1			339739	08/27/16 06:29	ACF	TAL DEN
Total/NA	Analysis	Moisture		1			338084	08/16/16 09:08	IEU	TAL DEN

Client Sample ID: AC-SED-01-0.005
Date Collected: 08/11/16 12:55
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			338084	08/16/16 09:08	IEU	TAL DEN

Client Sample ID: AC-SED-01-0.005
Date Collected: 08/11/16 12:55
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-4
Matrix: Solid
Percent Solids: 93.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			4.460 g	5 mL	338552	08/18/16 12:00	ADD	TAL DEN
Total/NA	Analysis	8260B		1	5 g	5 mL	338344	08/18/16 21:34	ADD	TAL DEN
Total/NA	Prep	3550C			31.0 g	1 mL	339329	08/24/16 14:29	KI	TAL DEN
Total/NA	Analysis	8270C		1			339947	08/29/16 20:30	DCK	TAL DEN
Total/NA	Prep	3546			31.8 g	10 mL	339106	08/23/16 11:33	KI	TAL DEN
Total/NA	Analysis	8081B		1			341095	09/07/16 19:10	DAW	TAL DEN

Lab Chronicle

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86822-1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			31.8 g	10 mL	339106	08/23/16 11:33	KI	TAL DEN
Total/NA	Analysis	8082A		1			340670	09/02/16 13:34	TDJ	TAL DEN
Total/NA	Prep	8151A			30.06 g	10 mL	446438	08/19/16 08:46	JEC	TAL SAV
Total/NA	Analysis	8151A		1			446716	08/23/16 04:03	GEM	TAL SAV
Total/NA	Prep	3050B			1.198 g	100 mL	338838	08/23/16 07:50	SUR	TAL DEN
Total/NA	Analysis	6010C		1			339852	08/27/16 15:37	CRR	TAL DEN
Total/NA	Prep	7471B			0.51 g	50 mL	338872	08/25/16 12:45	CDH	TAL DEN
Total/NA	Analysis	7471B		1			339690	08/25/16 19:32	CDH	TAL DEN

Client Sample ID: AC-SED-02-0.005

Lab Sample ID: 280-86822-5

Date Collected: 08/11/16 13:50

Matrix: Solid

Date Received: 08/11/16 15:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			338084	08/16/16 09:08	IEU	TAL DEN

Client Sample ID: AC-SED-02-0.005

Lab Sample ID: 280-86822-5

Date Collected: 08/11/16 13:50

Matrix: Solid

Date Received: 08/11/16 15:30

Percent Solids: 95.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			4.739 g	5 mL	338552	08/18/16 12:00	ADD	TAL DEN
Total/NA	Analysis	8260B		1	5 g	5 mL	338344	08/18/16 21:54	ADD	TAL DEN
Total/NA	Prep	3550C			30.9 g	1 mL	339329	08/24/16 14:29	KI	TAL DEN
Total/NA	Analysis	8270C		1			339947	08/29/16 20:57	DCK	TAL DEN
Total/NA	Prep	3546			31.5 g	10 mL	339106	08/23/16 11:33	KI	TAL DEN
Total/NA	Analysis	8081B		1			341095	09/07/16 19:27	DAW	TAL DEN
Total/NA	Prep	3546			31.5 g	10 mL	339106	08/23/16 11:33	KI	TAL DEN
Total/NA	Analysis	8082A		1			340670	09/02/16 13:56	TDJ	TAL DEN
Total/NA	Prep	8151A			30.08 g	10 mL	446438	08/19/16 08:46	JEC	TAL SAV
Total/NA	Analysis	8151A		1			446716	08/23/16 04:22	GEM	TAL SAV
Total/NA	Prep	3050B			1.306 g	100 mL	338838	08/23/16 07:50	SUR	TAL DEN
Total/NA	Analysis	6010C		1			339852	08/27/16 16:00	CRR	TAL DEN
Total/NA	Prep	7471B			0.52 g	50 mL	338872	08/25/16 12:45	CDH	TAL DEN
Total/NA	Analysis	7471B		1			339690	08/25/16 19:39	CDH	TAL DEN

Client Sample ID: AC-SED-03-0.005

Lab Sample ID: 280-86822-6

Date Collected: 08/11/16 14:10

Matrix: Solid

Date Received: 08/11/16 15:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			338084	08/16/16 09:08	IEU	TAL DEN

Client Sample ID: AC-SED-03-0.005
Date Collected: 08/11/16 14:10
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-6
Matrix: Solid
Percent Solids: 91.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			4.037 g	5 mL	338552	08/18/16 12:00	ADD	TAL DEN
Total/NA	Analysis	8260B		1	5 g	5 mL	338344	08/18/16 22:14	ADD	TAL DEN
Total/NA	Prep	3550C			30.8 g	1 mL	339329	08/24/16 14:29	KI	TAL DEN
Total/NA	Analysis	8270C		1			339947	08/29/16 21:24	DCK	TAL DEN
Total/NA	Prep	3546			31.0 g	10 mL	339106	08/23/16 11:33	KI	TAL DEN
Total/NA	Analysis	8081B		1			341095	09/07/16 18:52	DAW	TAL DEN
Total/NA	Prep	3546			31.0 g	10 mL	339106	08/23/16 11:33	KI	TAL DEN
Total/NA	Analysis	8082A		1			340670	09/02/16 15:01	TDJ	TAL DEN
Total/NA	Prep	8151A			30.12 g	10 mL	446438	08/19/16 08:46	JEC	TAL SAV
Total/NA	Analysis	8151A		1			446716	08/23/16 04:42	GEM	TAL SAV
Total/NA	Prep	3050B			1.237 g	100 mL	338838	08/23/16 07:50	SUR	TAL DEN
Total/NA	Analysis	6010C		1			339852	08/27/16 16:02	CRR	TAL DEN
Total/NA	Prep	7471B			0.58 g	50 mL	338872	08/25/16 12:45	CDH	TAL DEN
Total/NA	Analysis	7471B		1			339690	08/25/16 19:42	CDH	TAL DEN

Client Sample ID: AC-SED-04-0.005
Date Collected: 08/11/16 13:35
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			338084	08/16/16 09:08	IEU	TAL DEN

Client Sample ID: AC-SED-04-0.005
Date Collected: 08/11/16 13:35
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-7
Matrix: Solid
Percent Solids: 96.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.435 g	100 mL	338838	08/23/16 07:50	SUR	TAL DEN
Total/NA	Analysis	6010C		1			339852	08/27/16 16:05	CRR	TAL DEN

Client Sample ID: AC-SED-05-0.005
Date Collected: 08/11/16 13:35
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-8
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			338084	08/16/16 09:08	IEU	TAL DEN

Client Sample ID: AC-SED-05-0.005
Date Collected: 08/11/16 13:35
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-8
Matrix: Solid
Percent Solids: 96.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.065 g	100 mL	338838	08/23/16 07:50	SUR	TAL DEN

Client Sample ID: AC-SED-05-0.005 — **Lab Sample ID: 280-86822-8**
Date Collected: 08/11/16 13:35 — **Matrix: Solid**
Date Received: 08/11/16 15:30 — **Percent Solids: 96.3**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	6010C		1			339852	08/27/16 16:07	CRR	TAL DEN

Client Sample ID: AC-SED-06-0.005 — **Lab Sample ID: 280-86822-9**
Date Collected: 08/11/16 13:15 — **Matrix: Solid**
Date Received: 08/11/16 15:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			338084	08/16/16 09:08	IEU	TAL DEN

Client Sample ID: AC-SED-06-0.005 — **Lab Sample ID: 280-86822-9**
Date Collected: 08/11/16 13:15 — **Matrix: Solid**
Date Received: 08/11/16 15:30 — **Percent Solids: 99.9**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.035 g	100 mL	338838	08/23/16 07:50	SUR	TAL DEN
Total/NA	Analysis	6010C		1			339852	08/27/16 16:10	CRR	TAL DEN

Client Sample ID: AC-SED-07-0.005 — **Lab Sample ID: 280-86822-10**
Date Collected: 08/11/16 13:20 — **Matrix: Solid**
Date Received: 08/11/16 15:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			338084	08/16/16 09:08	IEU	TAL DEN

Client Sample ID: AC-SED-07-0.005 — **Lab Sample ID: 280-86822-10**
Date Collected: 08/11/16 13:20 — **Matrix: Solid**
Date Received: 08/11/16 15:30 — **Percent Solids: 96.7**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3050B			1.057 g	100 mL	338838	08/23/16 07:50	SUR	TAL DEN
Total/NA	Analysis	6010C		1			339852	08/27/16 16:12	CRR	TAL DEN

Client Sample ID: DUPE-SED — **Lab Sample ID: 280-86822-11**
Date Collected: 08/11/16 00:00 — **Matrix: Solid**
Date Received: 08/11/16 15:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			338084	08/16/16 09:08	IEU	TAL DEN

Lab Chronicle

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86822-1

Client Sample ID: DUPE-SED

Date Collected: 08/11/16 00:00
Date Received: 08/11/16 15:30

Lab Sample ID: 280-86822-11

Matrix: Solid
Percent Solids: 95.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.053 g	5 mL	338552	08/18/16 12:00	ADD	TAL DEN
Total/NA	Analysis	8260B		1	5 g	5 mL	338344	08/18/16 22:34	ADD	TAL DEN
Total/NA	Prep	3550C			31.8 g	1 mL	339329	08/24/16 14:29	KI	TAL DEN
Total/NA	Analysis	8270C		1			339947	08/29/16 21:50	DCK	TAL DEN
Total/NA	Prep	3546			30.4 g	10 mL	339106	08/23/16 11:33	KI	TAL DEN
Total/NA	Analysis	8081B		1			341095	09/07/16 19:44	DAW	TAL DEN
Total/NA	Prep	3546			30.4 g	10 mL	339106	08/23/16 11:33	KI	TAL DEN
Total/NA	Analysis	8082A		1			340670	09/02/16 15:23	TDJ	TAL DEN
Total/NA	Prep	8151A			30.09 g	10 mL	446438	08/19/16 08:46	JEC	TAL SAV
Total/NA	Analysis	8151A		1			446716	08/23/16 05:01	GEM	TAL SAV
Total/NA	Prep	3050B			1.284 g	100 mL	338838	08/23/16 07:50	SUR	TAL DEN
Total/NA	Analysis	6010C		1			339852	08/27/16 16:15	CRR	TAL DEN
Total/NA	Prep	7471B			0.55 g	50 mL	338872	08/25/16 12:45	CDH	TAL DEN
Total/NA	Analysis	7471B		1			339690	08/25/16 19:44	CDH	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Certification Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86822-1

Laboratory: TestAmerica Denver

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Oregon	NELAP	10	4025	01-09-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
Moisture		Solid	Percent Moisture

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-17
A2LA	ISO/IEC 17025		399.01	02-28-17
Alabama	State Program	4	41450	06-30-17
Alaska (UST)	State Program	10	UST-104	11-05-16 *
Arkansas DEQ	State Program	6	88-0692	01-31-17
California	State Program	9	2939	07-31-16 *
Colorado	State Program	8	N/A	12-31-16
Connecticut	State Program	1	PH-0161	03-31-17
Florida	NELAP	4	E87052	06-30-17
GA Dept. of Agriculture	State Program	4	N/A	06-12-17
Georgia	State Program	4	N/A	06-30-17
Georgia	State Program	4	803	06-30-17
Guam	State Program	9	15-005r	04-16-17
Hawaii	State Program	9	N/A	06-30-17
Illinois	NELAP	5	200022	11-30-16 *
Indiana	State Program	5	N/A	06-30-17
Iowa	State Program	7	353	06-30-17
Kentucky (DW)	State Program	4	90084	12-31-16
Kentucky (UST)	State Program	4	18	06-30-17
Kentucky (WW)	State Program	4	90084	12-31-16
Louisiana	NELAP	6	30690	06-30-17
Louisiana (DW)	NELAP	6	LA160019	12-31-16
Maine	State Program	1	GA00006	09-24-18
Maryland	State Program	3	250	12-31-16
Massachusetts	State Program	1	M-GA006	06-30-17
Michigan	State Program	5	9925	06-30-17
Mississippi	State Program	4	N/A	06-30-16 *
Nebraska	State Program	7	TestAmerica-Savannah	06-30-17
New Jersey	NELAP	2	GA769	06-30-17
New Mexico	State Program	6	N/A	06-30-17
New York	NELAP	2	10842	03-31-17
North Carolina (DW)	State Program	4	13701	07-31-17
North Carolina (WW/SW)	State Program	4	269	12-31-16
Oklahoma	State Program	6	9984	08-31-17
Pennsylvania	NELAP	3	68-00474	06-30-17
Puerto Rico	State Program	2	GA00006	12-31-16
South Carolina	State Program	4	98001	06-30-17
Tennessee	State Program	4	TN02961	06-30-17
Texas	NELAP	6	T104704185-15-8	11-30-16 *
US Fish & Wildlife	Federal		LE058448-0	10-31-17

* Certification renewal pending - certification considered valid.

Certification Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-86822-1

Laboratory: TestAmerica Savannah (Continued)

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
USDA	Federal		SAV 3-04	06-11-17
Virginia	NELAP	3	460161	06-14-17
Washington	State Program	10	C805	06-10-17
West Virginia (DW)	State Program	3	9950C	12-31-16
West Virginia DEP	State Program	3	094	08-31-16 *
Wisconsin	State Program	5	999819810	08-31-17
Wyoming	State Program	8	8TMS-L	06-30-16 *

* Certification renewal pending - certification considered valid.

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

280-86822 Chain of Custody

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: JOE LAMMERS	Lab PM: Kupper, Stephanie K	COC No: 280-54830-19558.1
Client Contact: Mr. John Dellaport	Phone: 720-810-2194	E-Mail: stephanie.kupper@testamericainc.com	Page: Page 1 of 1
Company: Quantum Water & Environment		Analysis Requested	Job #:
Address: 1746 Cole Boulevard, Suite 340	Due Date Requested:		Preservation Codes:
City: Lakewood	TAT Requested (days):		A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
State, Zip: CO, 80401			
Phone: 720-524-4294(Tel)	PO #:		Other:
Email: John@quantumwaterco.com	WO #:		
Project Name: Adams County Shooting Range	Project #: 28014702		
Site: ADAMS COUNTY SHOOTING RANGE	SSOW#:		

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=wasteoil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B - HSL Analyte list (CLP) full spike	RCRA 8 metals	EPA - RCA - 8330B (explosives)	EPA Method 6010*	EPA method 8270 (SVOCs)	EPA method 815 (herbicides)	EPA method 8081 (pesticides)	EPA method 8082 (PCBs)	Total Number of containers	Special Instructions/Note:
Preservation Code:							N	A								
AC-EXP-RO	8/11/16	12:34							X						1	*Lead, Antimony, Arsenic, cadmium, copper, tin, zinc
AC-EXP-BD		12:35							X						1	
DUPE-EXP		—							X						1	
AC-SED-01-0.005		12:55					X	X			X	X	X	X	6	
AC-SED-02-0.005		13:50					X	X			X	X	X	X	3	
AC-SED-03-0.005		14:10					X	X			X	X	X	X	6	
AC-SED-04-0.005		13:35								X					1	
AC-SED-05-0.005		13:35								X					1	
AC-SED-06-0.005		13:15								X					1	
AC-SED-07-0.005	↓	13:20								X					1	
DUPE-SED	8/11/16	—					X	X				X	X	X	3	

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1		8.11.16/1530			8/11-16 1530	TAD
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: 2.5+0.0 IR#5 transferred by JT 8/11/16

Login Sample Receipt Checklist

Client: Quantum Water Consulting

Job Number: 280-86822-1

Login Number: 86822
List Number: 1
Creator: True, Joshua A

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
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.	False	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Quantum Water Consulting

Job Number: 280-86822-1

Login Number: 86822
List Number: 2
Creator: Wayne, Shretha S

List Source: TestAmerica Savannah
List Creation: 08/16/16 08:11 AM

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

Login Sample Receipt Checklist

Client: Quantum Water Consulting

Job Number: 280-86822-1

Login Number: 86822
List Number: 3
Creator: Vasquez, Melissa A

List Source: TestAmerica Savannah
List Creation: 08/16/16 01:25 PM

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

TestAmerica Job ID: 280-87325-1
Client Project/Site: Adams County Shooting Range

For:
Quantum Water Consulting
1746 Cole Blvd
Suite 340
Lakewood, Colorado 80401

Attn: Mr. John Dellaport

Stephanie Rothmeyer

Authorized for release by:
9/16/2016 9:00:15 AM

Stephanie Rothmeyer, Project Manager I
(303)736-0182
stephanie.rothmeyer@testamericainc.com

Table of Contents

Definitions/Glossary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-87325-1

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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: 280-87325-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: Quantum Water Consulting

Project: Adams County Shooting Range

Report Number: 280-87325-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 8/25/2016 at 9:37 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.5º C.

One of two container labels for the following sample did not match the information listed on the Chain-of-Custody (COC): AC-EXP-EMN (280-87325-1). The container label lists Sample ID AC-EXP-EMS, while the COC lists AC-EXP-EMN (280-87325-1). The sample was logged per the COC.

The Chain-of-Custody (COC) was incomplete as received. The analysis was written on the COC, however the sample was not marked to be analyzed. The sample has been logged for 8330B analysis.

Per client request on 8/29/16, each container was logged as a separate sample. Samples were logged as AC-EXP-EMS (8/24/16 at 0905) and AC-EXP-EMN (8/24/16 at 0910).

NITROAROMATICS AND NITRAMINES (HPLC)

Samples AC-EXP-EMN (280-87325-1) and AC-EXP-EMS (280-87325-2) were analyzed for Nitroaromatics and Nitramines (HPLC) in accordance with SW846 8330B. The samples were leached on 09/07/2016, prepared on 09/07/2016 and analyzed on 09/15/2016.

The following samples was air dried and sieved per the procedure; however, the samples contained material that would not pass through the sieve: AC-EXP-EMN (280-87325-1) and AC-EXP-EMS (280-87325-2). This material was removed and not extracted. The material appeared to be rocks and/or vegetation.

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

Detection Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-87325-1

Client Sample ID: AC-EXP-EMN — Lab Sample ID: 280-87325-1

No Detections.

Client Sample ID: AC-EXP-EMS — Lab Sample ID: 280-87325-2

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-87325-1

Method	Method Description	Protocol	Laboratory
8330B	Nitroaromatics and Nitramines (HPLC)	SW846	TAL DEN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-87325-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-87325-1	AC-EXP-EMN	Solid	08/24/16 09:10	08/25/16 09:37
280-87325-2	AC-EXP-EMS	Solid	08/24/16 09:05	08/25/16 09:37

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-87325-1

Method: 8330B - Nitroaromatics and Nitramines (HPLC)

Client Sample ID: AC-EXP-EMN
Date Collected: 08/24/16 09:10
Date Received: 08/25/16 09:37

Lab Sample ID: 280-87325-1
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Amino-4,6-dinitrotoluene	ND		0.099	0.033	mg/Kg		09/07/16 13:00	09/15/16 02:02	1
4-Amino-2,6-dinitrotoluene	ND		0.099	0.030	mg/Kg		09/07/16 13:00	09/15/16 02:02	1
2,4-Dinitrotoluene	ND		0.099	0.015	mg/Kg		09/07/16 13:00	09/15/16 02:02	1
2,6-Dinitrotoluene	ND		0.099	0.019	mg/Kg		09/07/16 13:00	09/15/16 02:02	1
o-Nitrotoluene	ND		0.20	0.047	mg/Kg		09/07/16 13:00	09/15/16 02:02	1
m-Nitrotoluene	ND		0.20	0.063	mg/Kg		09/07/16 13:00	09/15/16 02:02	1
Nitrobenzene	ND		0.30	0.084	mg/Kg		09/07/16 13:00	09/15/16 02:02	1
p-Nitrotoluene	ND		0.20	0.036	mg/Kg		09/07/16 13:00	09/15/16 02:02	1
1,3,5-Trinitrobenzene	ND		0.099	0.014	mg/Kg		09/07/16 13:00	09/15/16 02:02	1
1,3-Dinitrobenzene	ND		0.099	0.016	mg/Kg		09/07/16 13:00	09/15/16 02:02	1
HMX	ND		0.099	0.023	mg/Kg		09/07/16 13:00	09/15/16 02:02	1
RDX	ND		0.20	0.043	mg/Kg		09/07/16 13:00	09/15/16 02:02	1
Tetryl	ND		0.20	0.044	mg/Kg		09/07/16 13:00	09/15/16 02:02	1
2,4,6-Trinitrotoluene	ND		0.099	0.030	mg/Kg		09/07/16 13:00	09/15/16 02:02	1
3,5-Dinitroaniline	ND		0.099	0.0089	mg/Kg		09/07/16 13:00	09/15/16 02:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dinitrobenzene	*102*		*83 - 122*	*09/07/16 13:00*	*09/15/16 02:02*	*1*

Client Sample ID: AC-EXP-EMS
Date Collected: 08/24/16 09:05
Date Received: 08/25/16 09:37

Lab Sample ID: 280-87325-2
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Amino-4,6-dinitrotoluene	ND		0.097	0.032	mg/Kg		09/07/16 13:00	09/15/16 03:57	1
4-Amino-2,6-dinitrotoluene	ND		0.097	0.029	mg/Kg		09/07/16 13:00	09/15/16 03:57	1
2,4-Dinitrotoluene	ND		0.097	0.014	mg/Kg		09/07/16 13:00	09/15/16 03:57	1
2,6-Dinitrotoluene	ND		0.097	0.018	mg/Kg		09/07/16 13:00	09/15/16 03:57	1
o-Nitrotoluene	ND		0.19	0.046	mg/Kg		09/07/16 13:00	09/15/16 03:57	1
m-Nitrotoluene	ND		0.19	0.062	mg/Kg		09/07/16 13:00	09/15/16 03:57	1
Nitrobenzene	ND		0.29	0.082	mg/Kg		09/07/16 13:00	09/15/16 03:57	1
p-Nitrotoluene	ND		0.19	0.035	mg/Kg		09/07/16 13:00	09/15/16 03:57	1
1,3,5-Trinitrobenzene	ND		0.097	0.013	mg/Kg		09/07/16 13:00	09/15/16 03:57	1
1,3-Dinitrobenzene	ND		0.097	0.016	mg/Kg		09/07/16 13:00	09/15/16 03:57	1
HMX	ND		0.097	0.022	mg/Kg		09/07/16 13:00	09/15/16 03:57	1
RDX	ND		0.19	0.042	mg/Kg		09/07/16 13:00	09/15/16 03:57	1
Tetryl	ND		0.19	0.042	mg/Kg		09/07/16 13:00	09/15/16 03:57	1
2,4,6-Trinitrotoluene	ND		0.097	0.030	mg/Kg		09/07/16 13:00	09/15/16 03:57	1
3,5-Dinitroaniline	ND		0.097	0.0087	mg/Kg		09/07/16 13:00	09/15/16 03:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dinitrobenzene	*106*		*83 - 122*	*09/07/16 13:00*	*09/15/16 03:57*	*1*

Surrogate Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-87325-1

Method: 8330B - Nitroaromatics and Nitramines (HPLC)

Matrix: Solid

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	12DNB1 (83-122)
280-87325-1	AC-EXP-EMN	102
280-87325-1 MS	AC-EXP-EMN	95
280-87325-1 MS	AC-EXP-EMN	105
280-87325-1 MSD	AC-EXP-EMN	95
280-87325-1 MSD	AC-EXP-EMN	102
280-87325-2	AC-EXP-EMS	106
280-87325-2 DU	AC-EXP-EMS	105
280-87325-2 TRL	TRIP	101
LCS 280-341103/2-A	Lab Control Sample	97
LCS 280-341103/3-A	Lab Control Sample	99
MB 280-341103/1-A	Method Blank	102

Surrogate Legend

12DNB = 1,2-Dinitrobenzene

Method: 8330B - Nitroaromatics and Nitramines (HPLC)

Lab Sample ID: MB 280-341103/1-A
Matrix: Solid
Analysis Batch: 342227

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 341103

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Amino-4,6-dinitrotoluene	ND		0.10	0.033	mg/Kg		09/07/16 13:00	09/15/16 00:54	1
4-Amino-2,6-dinitrotoluene	ND		0.10	0.030	mg/Kg		09/07/16 13:00	09/15/16 00:54	1
2,4-Dinitrotoluene	ND		0.10	0.015	mg/Kg		09/07/16 13:00	09/15/16 00:54	1
2,6-Dinitrotoluene	ND		0.10	0.019	mg/Kg		09/07/16 13:00	09/15/16 00:54	1
o-Nitrotoluene	ND		0.20	0.047	mg/Kg		09/07/16 13:00	09/15/16 00:54	1
m-Nitrotoluene	ND		0.20	0.064	mg/Kg		09/07/16 13:00	09/15/16 00:54	1
Nitrobenzene	ND		0.30	0.085	mg/Kg		09/07/16 13:00	09/15/16 00:54	1
p-Nitrotoluene	ND		0.20	0.037	mg/Kg		09/07/16 13:00	09/15/16 00:54	1
1,3,5-Trinitrobenzene	ND		0.10	0.014	mg/Kg		09/07/16 13:00	09/15/16 00:54	1
1,3-Dinitrobenzene	ND		0.10	0.017	mg/Kg		09/07/16 13:00	09/15/16 00:54	1
HMX	ND		0.10	0.023	mg/Kg		09/07/16 13:00	09/15/16 00:54	1
RDX	ND		0.20	0.043	mg/Kg		09/07/16 13:00	09/15/16 00:54	1
Tetryl	ND		0.20	0.044	mg/Kg		09/07/16 13:00	09/15/16 00:54	1
2,4,6-Trinitrotoluene	ND		0.10	0.031	mg/Kg		09/07/16 13:00	09/15/16 00:54	1
3,5-Dinitroaniline	ND		0.10	0.0090	mg/Kg		09/07/16 13:00	09/15/16 00:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dinitrobenzene	*102*		*83 - 122*	*09/07/16 13:00*	*09/15/16 00:54*	*1*

Lab Sample ID: LCS 280-341103/2-A
Matrix: Solid
Analysis Batch: 342227

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 341103

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Amino-4,6-dinitrotoluene	1.00	0.989		mg/Kg		99	78 - 120
4-Amino-2,6-dinitrotoluene	1.00	0.985		mg/Kg		99	80 - 120
2,4-Dinitrotoluene	1.00	0.937		mg/Kg		94	80 - 120
2,6-Dinitrotoluene	1.00	0.873		mg/Kg		87	80 - 120
o-Nitrotoluene	1.00	1.03		mg/Kg		103	80 - 124
m-Nitrotoluene	1.00	0.982		mg/Kg		98	80 - 122
Nitrobenzene	1.00	1.00		mg/Kg		100	76 - 122
p-Nitrotoluene	1.00	1.06		mg/Kg		106	80 - 120
1,3,5-Trinitrobenzene	1.00	0.942		mg/Kg		94	80 - 120
1,3-Dinitrobenzene	1.00	0.998		mg/Kg		100	80 - 120
HMX	1.00	0.824		mg/Kg		82	80 - 120
RDX	1.00	1.09		mg/Kg		109	80 - 124
Tetryl	1.00	0.876		mg/Kg		88	80 - 120
2,4,6-Trinitrotoluene	1.00	0.985		mg/Kg		98	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dinitrobenzene	*97*		*83 - 122*

Method: 8330B - Nitroaromatics and Nitramines (HPLC) (Continued)

Lab Sample ID: LCS 280-341103/3-A
Matrix: Solid
Analysis Batch: 342227

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 341103

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
3,5-Dinitroaniline	1.00	1.03		mg/Kg		103	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dinitrobenzene	*99*		*83 - 122*

Lab Sample ID: 280-87325-1 MS
Matrix: Solid
Analysis Batch: 342227

Client Sample ID: AC-EXP-EMN
Prep Type: Total/NA
Prep Batch: 341103

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Amino-4,6-dinitrotoluene	ND		0.976	0.941		mg/Kg		96	78 - 120
4-Amino-2,6-dinitrotoluene	ND		0.976	0.828		mg/Kg		85	80 - 120
2,4-Dinitrotoluene	ND		0.976	0.934		mg/Kg		96	80 - 120
2,6-Dinitrotoluene	ND		0.976	0.852		mg/Kg		87	80 - 120
o-Nitrotoluene	ND		0.976	0.995		mg/Kg		102	80 - 124
m-Nitrotoluene	ND		0.976	0.967		mg/Kg		99	80 - 122
Nitrobenzene	ND		0.976	0.945		mg/Kg		97	76 - 122
p-Nitrotoluene	ND		0.976	1.03		mg/Kg		105	80 - 120
1,3,5-Trinitrobenzene	ND		0.976	0.929		mg/Kg		95	80 - 120
1,3-Dinitrobenzene	ND		0.976	0.945		mg/Kg		97	80 - 120
HMX	ND		0.976	0.833		mg/Kg		85	80 - 120
RDX	ND		0.976	0.833		mg/Kg		85	80 - 124
Tetryl	ND		0.976	0.882		mg/Kg		90	80 - 120
2,4,6-Trinitrotoluene	ND		0.976	1.00		mg/Kg		103	80 - 120

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dinitrobenzene	*95*		*83 - 122*

Lab Sample ID: 280-87325-1 MS
Matrix: Solid
Analysis Batch: 342227

Client Sample ID: AC-EXP-EMN
Prep Type: Total/NA
Prep Batch: 341103

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
3,5-Dinitroaniline	ND		0.945	0.999		mg/Kg		106	80 - 120

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dinitrobenzene	*105*		*83 - 122*

Lab Sample ID: 280-87325-1 MSD
Matrix: Solid
Analysis Batch: 342227

Client Sample ID: AC-EXP-EMN
Prep Type: Total/NA
Prep Batch: 341103

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Amino-4,6-dinitrotoluene	ND		0.978	0.937		mg/Kg		96	78 - 120	0	30
4-Amino-2,6-dinitrotoluene	ND		0.978	0.835		mg/Kg		85	80 - 120	1	30
2,4-Dinitrotoluene	ND		0.978	0.936		mg/Kg		96	80 - 120	0	30
2,6-Dinitrotoluene	ND		0.978	0.896		mg/Kg		92	80 - 120	5	30

Method: 8330B - Nitroaromatics and Nitramines (HPLC) (Continued)

Lab Sample ID: 280-87325-1 MSD
Matrix: Solid
Analysis Batch: 342227

Client Sample ID: AC-EXP-EMN
Prep Type: Total/NA
Prep Batch: 341103

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
o-Nitrotoluene	ND		0.978	1.03		mg/Kg		105	80 - 124	3	30
m-Nitrotoluene	ND		0.978	0.968		mg/Kg		99	80 - 122	0	30
Nitrobenzene	ND		0.978	1.04		mg/Kg		106	76 - 122	9	30
p-Nitrotoluene	ND		0.978	1.03		mg/Kg		105	80 - 120	1	30
1,3,5-Trinitrobenzene	ND		0.978	0.926		mg/Kg		95	80 - 120	0	30
1,3-Dinitrobenzene	ND		0.978	1.05		mg/Kg		108	80 - 120	11	30
HMX	ND		0.978	0.848		mg/Kg		87	80 - 120	2	30
RDX	ND		0.978	0.861		mg/Kg		88	80 - 124	3	30
Tetryl	ND		0.978	0.962		mg/Kg		98	80 - 120	9	30
2,4,6-Trinitrotoluene	ND		0.978	0.993		mg/Kg		101	80 - 120	1	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dinitrobenzene	*95*		*83 - 122*

Lab Sample ID: 280-87325-1 MSD
Matrix: Solid
Analysis Batch: 342227

Client Sample ID: AC-EXP-EMN
Prep Type: Total/NA
Prep Batch: 341103

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
3,5-Dinitroaniline	ND		0.959	1.00		mg/Kg		104	80 - 120	0	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dinitrobenzene	*102*		*83 - 122*

Lab Sample ID: 280-87325-2 DU
Matrix: Solid
Analysis Batch: 342227

Client Sample ID: AC-EXP-EMS
Prep Type: Total/NA
Prep Batch: 341103

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
2-Amino-4,6-dinitrotoluene	ND			ND		mg/Kg				NC	
4-Amino-2,6-dinitrotoluene	ND			ND		mg/Kg				NC	
2,4-Dinitrotoluene	ND			ND		mg/Kg				NC	
2,6-Dinitrotoluene	ND			ND		mg/Kg				NC	
o-Nitrotoluene	ND			ND		mg/Kg				NC	
m-Nitrotoluene	ND			ND		mg/Kg				NC	
Nitrobenzene	ND			ND		mg/Kg				NC	
p-Nitrotoluene	ND			ND		mg/Kg				NC	
1,3,5-Trinitrobenzene	ND			ND		mg/Kg				NC	
1,3-Dinitrobenzene	ND			ND		mg/Kg				NC	
HMX	ND			ND		mg/Kg				NC	
RDX	ND			ND		mg/Kg				NC	
Tetryl	ND			ND		mg/Kg				NC	
2,4,6-Trinitrotoluene	ND			ND		mg/Kg				NC	
3,5-Dinitroaniline	ND			ND		mg/Kg				NC	

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
1,2-Dinitrobenzene	*105*		*83 - 122*

Method: 8330B - Nitroaromatics and Nitramines (HPLC) (Continued)

Lab Sample ID: 280-87325-2 TRL
Matrix: Solid
Analysis Batch: 342227

Client Sample ID: TRIP
Prep Type: Total/NA
Prep Batch: 341103

Analyte	Sample Result	Sample Qualifier		TRL Result	TRL Qualifier	Unit	D			RSD	RSD Limit
2-Amino-4,6-dinitrotoluene	ND			ND		mg/Kg				NC	20
4-Amino-2,6-dinitrotoluene	ND			ND		mg/Kg				NC	20
2,4-Dinitrotoluene	ND			ND		mg/Kg				NC	20
2,6-Dinitrotoluene	ND			ND		mg/Kg				NC	20
o-Nitrotoluene	ND			ND		mg/Kg				NC	20
m-Nitrotoluene	ND			ND		mg/Kg				NC	20
Nitrobenzene	ND			ND		mg/Kg				NC	20
p-Nitrotoluene	ND			ND		mg/Kg				NC	20
1,3,5-Trinitrobenzene	ND			ND		mg/Kg				NC	20
1,3-Dinitrobenzene	ND			ND		mg/Kg				NC	20
HMX	ND			ND		mg/Kg				NC	20
RDX	ND			ND		mg/Kg				NC	20
Tetryl	ND			ND		mg/Kg				NC	20
2,4,6-Trinitrotoluene	ND			ND		mg/Kg				NC	20
3,5-Dinitroaniline	ND			ND		mg/Kg				NC	20

Surrogate	*TRL %Recovery*	*TRL Qualifier*	*Limits*
1,2-Dinitrobenzene	*101*		*83 - 122*

QC Association Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-87325-1

HPLC/IC

ISM Prep Batch: 341034

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-87325-1	AC-EXP-EMN	Total/NA	Solid	Increment, prep	
280-87325-2	AC-EXP-EMS	Total/NA	Solid	Increment, prep	
280-87325-1 MS	AC-EXP-EMN	Total/NA	Solid	Increment, prep	
280-87325-1 MSD	AC-EXP-EMN	Total/NA	Solid	Increment, prep	
280-87325-2 DU	AC-EXP-EMS	Total/NA	Solid	Increment, prep	
280-87325-2 TRL	TRIP	Total/NA	Solid	Increment, prep	

Prep Batch: 341103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-87325-1	AC-EXP-EMN	Total/NA	Solid	8330B	341034
280-87325-2	AC-EXP-EMS	Total/NA	Solid	8330B	341034
MB 280-341103/1-A	Method Blank	Total/NA	Solid	8330B	
LCS 280-341103/2-A	Lab Control Sample	Total/NA	Solid	8330B	
LCS 280-341103/3-A	Lab Control Sample	Total/NA	Solid	8330B	
280-87325-1 MS	AC-EXP-EMN	Total/NA	Solid	8330B	341034
280-87325-1 MS	AC-EXP-EMN	Total/NA	Solid	8330B	341034
280-87325-1 MSD	AC-EXP-EMN	Total/NA	Solid	8330B	341034
280-87325-1 MSD	AC-EXP-EMN	Total/NA	Solid	8330B	341034
280-87325-2 DU	AC-EXP-EMS	Total/NA	Solid	8330B	341034
280-87325-2 TRL	TRIP	Total/NA	Solid	8330B	341034

Analysis Batch: 342227

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-87325-1	AC-EXP-EMN	Total/NA	Solid	8330B	341103
280-87325-2	AC-EXP-EMS	Total/NA	Solid	8330B	341103
MB 280-341103/1-A	Method Blank	Total/NA	Solid	8330B	341103
LCS 280-341103/2-A	Lab Control Sample	Total/NA	Solid	8330B	341103
LCS 280-341103/3-A	Lab Control Sample	Total/NA	Solid	8330B	341103
280-87325-1 MS	AC-EXP-EMN	Total/NA	Solid	8330B	341103
280-87325-1 MS	AC-EXP-EMN	Total/NA	Solid	8330B	341103
280-87325-1 MSD	AC-EXP-EMN	Total/NA	Solid	8330B	341103
280-87325-1 MSD	AC-EXP-EMN	Total/NA	Solid	8330B	341103
280-87325-2 DU	AC-EXP-EMS	Total/NA	Solid	8330B	341103
280-87325-2 TRL	TRIP	Total/NA	Solid	8330B	341103

Lab Chronicle

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-87325-1

Client Sample ID: AC-EXP-EMN

Lab Sample ID: 280-87325-1

Date Collected: 08/24/16 09:10

Matrix: Solid

Date Received: 08/25/16 09:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	ISM Prep	Increment, prep					341034	09/07/16 07:29	GLK	TAL DEN
Total/NA	Prep	8330B			10.08 g	40 mL	341103	09/07/16 13:00	GLK	TAL DEN
Total/NA	Analysis	8330B		1			342227	09/15/16 02:02	ACF	TAL DEN

Client Sample ID: AC-EXP-EMS

Lab Sample ID: 280-87325-2

Date Collected: 08/24/16 09:05

Matrix: Solid

Date Received: 08/25/16 09:37

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	ISM Prep	Increment, prep					341034	09/07/16 07:29	GLK	TAL DEN
Total/NA	Prep	8330B			10.35 g	40 mL	341103	09/07/16 13:00	GLK	TAL DEN
Total/NA	Analysis	8330B		1			342227	09/15/16 03:57	ACF	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Certification Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-87325-1

Laboratory: TestAmerica Denver

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Oregon	NELAP	10	4025	01-09-17

Analysis Method	Prep Method	Matrix	Analyte

Chain of Custody Record

Sampler ID _____

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☐

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124-280 (0508)

Client	Project Manager	Date	Chain of Custody Number
Quantum Water and Environmental	John Dellapat	8/24/16	193138
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page _____ of _____**
1746 Cole Blvd. Ste 340	303-524-4294		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	**Analysis (Attach list if more space is needed)**
Lakewood / CO / 80401			RCA 8330B
Project Name and Location (State)	**Carrier/Waybill Number**		**Special Instructions/ Conditions of Receipt**
Adams County, CO			
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	RCA 8330B
AC-EXP-EMN	8/24/16	9:05				2							

280-87325 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other Standard

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Cody Dellapart	9/25/16	9:37	1. Received By: [signature]	8/25/16	0937
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

3.5+0.0 IR#5 Transferred by DW 8/25/16

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Login Sample Receipt Checklist

Client: Quantum Water Consulting

Job Number: 280-87325-1

Login Number: 87325
List Number: 1
Creator: White, Denise E

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
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.	False	Refer to Job Narrative for details.
Is the Field Sampler's name present on COC?	False	Refer to Job Narrative for details.
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Appendix F6 - Laboratory Analysis Reports - Soil Vapor Sampling Results

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Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

LABORATORY REPORT

September 23, 2016

Joe Lammers
Quantum Water & Environment
1746 Cole Boulevard, Suite 340
Golden, CO 80401

RE: Adams County Shooting Range

Dear Joe:

Enclosed are the revised results of the samples submitted to our laboratory on August 30, 2016. Please note this report has been revised to quantify a sub-set of the initial EPA TO-15 compounds reported. No data was altered in this revision, and all revised pages will be denoted with a "Revised Page" footer located in the bottom right-hand corner of each page. For your reference, these analyses have been assigned our service request number P1604198.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

Samantha Henningsen

By Samantha Henningsen at 10:53 am, Sep 23, 2016

Samantha Henningsen
Project Manager

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Simi Valley, CA 93065
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www.alsglobal.com

Client: Quantum Water & Environment
Project: Adams County Shooting Range

Service Request No: P1604198

CASE NARRATIVE

The samples were received intact under chain of custody on August 30, 2016 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Hydrogen Sulfide Analysis

Four of the samples were analyzed for hydrogen sulfide per ASTM D 5504-12 using a gas chromatograph equipped with a sulfur chemiluminescence detector (SCD). This method is included on the laboratory's NELAP scope of accreditation, however it is not part of the DoD-ELAP or AIHA-LAP, LLC accreditation.

Methane Analysis

Four of the samples were analyzed per modified EPA Method TO-3 for methane using a gas chromatograph equipped with a flame ionization detector (FID). This procedure is described in laboratory SOP VOA-TO3C1C6. This method is included on the laboratory's DoD-ELAP scope of accreditation, however it is not part of the NELAP or AIHA-LAP, LLC accreditation.

Volatile Organic Compound Analysis

The samples were also analyzed for volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. This procedure is described in laboratory SOP VOA-TO15. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator. This method is included on the laboratory's NELAP and DoD-ELAP scope of accreditation, however it is not part of the AIHA-LAP, LLC accreditation. Any analytes flagged with an X are not included on the NELAP or DoD-ELAP accreditation.

The containers were cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. Please note, projects which require reporting below the MRL could have results between the MRL and method detection limit (MDL) that are biased high.

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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
AIHA-LAP, LLC	http://www.aihaaccreditedlabs.org	101661
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0694
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2014025
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	977273
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-003
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-16-7
Utah DOH (NELAP)	http://www.health.utah.gov/lab/labimp/certification/index.html	CA016272016-6
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: Quantum Water & Environment
Service Request: P1604198
Project ID: Adams County Shooting Range

Date Received: 8/30/2016
Time Received: 10:10

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	TO-3 Modified - C1C6+ Can	ASTM D 5504-12 - H2S Can	TO-15 - VOC Cans
AC-GMP-2	P1604198-001	Air	8/24/2016	10:50	1BV06793	-1.72	5.62	X	X	X
AC-GMP-4	P1604198-002	Air	8/24/2016	12:10	1BV06807	-2.03	5.36	X	X	X
AC-P2	P1604198-003	Air	8/24/2016	12:40	1BV06802	-2.00	5.23	X	X	X
DUPE-V	P1604198-004	Air	8/24/2016	00:00	1BV06810	-1.88	5.23	X	X	X
Trip Blank	P1604198-005	Air	8/24/2016	00:00	1BV06806	-14.29	5.87			X

ALS Environmental

2665 Park Center Drive, Suite A, Simi Valley, CA 93065
TF: (800) 443-1511 PH: (805)526-7161

Chain-of-Custody

P1604198

Form 202r8

		SAMPLER	Joe Lammers	DATE	8.25.2016	WORKORDER #	
PROJECT NAME	Adams County Shooting Range	SITE ID		TURNAROUND		PAGE	1 of 1
PROJECT No.		EDD FORMAT				DISPOSAL	By Lab or Return to Client
		PURCHASE ORDER					
COMPANY NAME	Quantum Water and Environment	BILL TO COMPANY					
SEND REPORT TO	joe@quantumwaterco.com	INVOICE ATTN TO					
ADDRESS	1746 Cole Boulevard, Suite 340	ADDRESS					
CITY / STATE / ZIP	Lakewood/CO/80401	CITY / STATE / ZIP					
PHONE	720-810-2194	PHONE					
FAX		FAX					
E-MAIL	joe@quantumwaterco.com	E-MAIL					

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	H2S (D5504)	VOCs (T0-15)	Methane (EPA TO-3)	
5 of 19 (1)	AC-GMP-2 (serial 16297)	Air	8.24.2016	1050	1	NA		x	x	x	
(2)	AC-GMP-4 (serial 16292)	Air	8.24.2016	1210	1	NA		x	x	x	
(3)	AC-P2 (Serial 16301)	Air	8.24.2016	1240	1	NA		x	x	x	
(4)	DUPE-V (Serial 16037)	Air	8.24.2016	-	1	NA		x	x	x	
(5)	Trip Blank	Air	8.24.2016	-	1	NA			x		

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:	QC PACKAGE (check below)	
		LEVEL II (Standard QC)
		LEVEL III (Std QC + forms)
		LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	Joe Lammers	Joe Lammers	8.25.2016	700
RECEIVED BY	[signature]	8/30/16 1010		
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

ALS Environmental
Sample Acceptance Check Form

Client: Quantum Water & Environment Work order: P1604198

Project: Adams County Shooting Range

Sample(s) received on: 8/30/16 Date opened: 8/30/16 by: KKELPE

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1604198-001.01	1.0 L Bottle-Vac™					
P1604198-002.01	1.0 L Bottle-Vac™					
P1604198-003.01	1.0 L Bottle-Vac™					
P1604198-004.01	1.0 L Bottle-Vac™					
P1604198-005.01	1.0 L Bottle-Vac™					

Explain any discrepancies: (include lab sample ID numbers):

Short sulfur hold time, analyst notified.

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Quantum Water & Environment**
Client Project ID: **Adams County Shooting Range** ALS Project ID: P1604198

Hydrogen Sulfide

Test Code: ASTM D 5504-12
Instrument ID: Agilent 6890A/GC13/SCD Date(s) Collected: 8/24/16
Analyst: Mike Conejo Date Received: 8/30/16
Sample Type: 1.0 L Bottle-Vac™(s) Date Analyzed: 8/30/16
Test Notes:

Client Sample ID	ALS Sample ID	Canister Dilution Factor	Injection Volume ml(s)	Time Analyzed	**Result µg/m³**	MRL µg/m³	**Result ppbV**	MRL ppbV	Data Qualifier
AC-GMP-2	P1604198-001	1.57	1.0	12:39	ND	11	ND	7.9	
AC-GMP-4	P1604198-002	1.58	1.0	12:26	ND	11	ND	7.9	
AC-P2	P1604198-003	1.57	1.0	13:05	ND	11	ND	7.9	
DUPE-V	P1604198-004	1.55	1.0	12:52	ND	11	ND	7.8	
Method Blank	P160830-MB	1.00	1.0	08:07	ND	7.0	ND	5.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Quantum Water & Environment**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1604198
Client Project ID: **Adams County Shooting Range** ALS Sample ID: P160830-LCS

Test Code: ASTM D 5504-12 Date Collected: NA
Instrument ID: Agilent 6890A/GC13/SCD Date Received: NA
Analyst: Mike Conejo Date Analyzed: 8/30/16
Sample Type: 1.0 L Bottle-Vac™ Volume(s) Analyzed: NA ml(s)
Test Notes:

CAS #	Compound	Spike Amount ppbV	Result ppbV	% Recovery	ALS Acceptance Limits	Data Qualifier
7783-06-4	Hydrogen Sulfide	1,000	**1,060**	**106**	75-148	

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Quantum Water & Environment**
Client Project ID: **Adams County Shooting Range** ALS Project ID: P1604198

Methane

Test Code: EPA TO-3 Modified
Instrument ID: HP5890 II/GC8/FID Date(s) Collected: 8/24/16
Analyst: Adam McAfee Date Received: 8/30/16
Sampling Media: 1.0 L Bottle-Vac™(s) Date Analyzed: 8/30/16
Test Notes:

Client Sample ID	ALS Sample ID	Canister Dilution Factor	Injection Volume ml(s)	Result ppmV	MRL ppmV	Data Qualifier
AC-GMP-2	P1604198-001	1.57	0.10	**140,000**	7.9	
AC-GMP-4	P1604198-002	1.58	0.10	**190**	7.9	
AC-P2	P1604198-003	1.57	0.10	**61**	7.9	
DUPE-V	P1604198-004	1.55	0.10	**110,000**	7.8	
Method Blank	P160830-MB	1.00	1.0	ND	0.50	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Quantum Water & Environment**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1604198
Client Project ID: **Adams County Shooting Range** ALS Sample ID: P160830-LCS

Test Code: EPA TO-3 Modified Date Collected: NA
Instrument ID: HP5890 II/GC8/FID Date Received: NA
Analyst: Adam McAfee Date Analyzed: 8/30/16
Sampling Media: 1.0 L Bottle-Vac™ Volume(s) Analyzed: NA ml(s)
Test Notes:

Compound	Spike Amount ppmV	**Result ppmV**	**% Recovery**	ALS Acceptance Limits	Data Qualifier
Methane	1,010	**1,010**	**100**	79-107	

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Quantum Water & Environment**
Client Sample ID: **AC-GMP-2** ALS Project ID: P1604198
Client Project ID: **Adams County Shooting Range** ALS Sample ID: P1604198-001

Test Code: EPA TO-15 Modified Date Collected: 8/24/16
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 8/30/16
Analyst: Lusine Hakobyan Date Analyzed: 9/2/16
Sample Type: 1.0 L Bottle-Vac™ Volume(s) Analyzed: 0.075 Liter(s)
Test Notes:
Container ID: 1BV06793

Initial Pressure (psig): -1.72 Final Pressure (psig): 5.62

Canister Dilution Factor: 1.57

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	**320**	10	**120**	4.1	
75-35-4	1,1-Dichloroethene	ND	10	ND	2.6	
75-09-2	Methylene Chloride	ND	10	ND	3.0	
75-34-3	1,1-Dichloroethane	ND	10	ND	2.6	
67-66-3	Chloroform	ND	10	ND	2.1	
107-06-2	1,2-Dichloroethane	ND	10	ND	2.6	
71-55-6	1,1,1-Trichloroethane	ND	10	ND	1.9	
71-43-2	Benzene	**76**	10	**24**	3.3	
56-23-5	Carbon Tetrachloride	ND	10	ND	1.7	
78-87-5	1,2-Dichloropropane	ND	10	ND	2.3	
79-01-6	Trichloroethene	**32**	10	**5.9**	1.9	
79-00-5	1,1,2-Trichloroethane	ND	10	ND	1.9	
108-88-3	Toluene	**52**	10	**14**	2.8	
127-18-4	Tetrachloroethene	ND	10	ND	1.5	
108-90-7	Chlorobenzene	ND	10	ND	2.3	
100-41-4	Ethylbenzene	**32**	10	**7.3**	2.4	
179601-23-1	m,p-Xylenes	**54**	21	**12**	4.8	
100-42-5	Styrene	ND	10	ND	2.5	
95-47-6	o-Xylene	**24**	10	**5.6**	2.4	
79-34-5	1,1,2,2-Tetrachloroethane	ND	10	ND	1.5	
106-46-7	1,4-Dichlorobenzene	ND	10	ND	1.7	
95-50-1	1,2-Dichlorobenzene	ND	10	ND	1.7	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Quantum Water & Environment**
Client Sample ID: **AC-GMP-4** ALS Project ID: P1604198
Client Project ID: **Adams County Shooting Range** ALS Sample ID: P1604198-002

Test Code: EPA TO-15 Modified Date Collected: 8/24/16
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 8/30/16
Analyst: Lusine Hakobyan Date Analyzed: 9/2/16
Sample Type: 1.0 L Bottle-Vac™ Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1BV06807

Initial Pressure (psig): -2.03 Final Pressure (psig): 5.36

Canister Dilution Factor: 1.58

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	2.0	ND	0.77	
75-35-4	1,1-Dichloroethene	ND	2.0	ND	0.50	
75-09-2	Methylene Chloride	ND	2.0	ND	0.57	
75-34-3	1,1-Dichloroethane	ND	2.0	ND	0.49	
67-66-3	Chloroform	ND	2.0	ND	0.40	
107-06-2	1,2-Dichloroethane	ND	2.0	ND	0.49	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ND	0.36	
71-43-2	Benzene	**4.7**	2.0	**1.5**	0.62	
56-23-5	Carbon Tetrachloride	ND	2.0	ND	0.31	
78-87-5	1,2-Dichloropropane	ND	2.0	ND	0.43	
79-01-6	Trichloroethene	**2.8**	2.0	**0.51**	0.37	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ND	0.36	
108-88-3	Toluene	**35**	2.0	**9.4**	0.52	
127-18-4	Tetrachloroethene	ND	2.0	ND	0.29	
108-90-7	Chlorobenzene	ND	2.0	ND	0.43	
100-41-4	Ethylbenzene	**19**	2.0	**4.4**	0.45	
179601-23-1	m,p-Xylenes	**75**	4.0	**17**	0.91	
100-42-5	Styrene	ND	2.0	ND	0.46	
95-47-6	o-Xylene	**30**	2.0	**6.8**	0.45	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ND	0.29	
106-46-7	1,4-Dichlorobenzene	ND	2.0	ND	0.33	
95-50-1	1,2-Dichlorobenzene	ND	2.0	ND	0.33	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Quantum Water & Environment**
Client Sample ID: **AC-P2** ALS Project ID: P1604198
Client Project ID: **Adams County Shooting Range** ALS Sample ID: P1604198-003

Test Code: EPA TO-15 Modified Date Collected: 8/24/16
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 8/30/16
Analyst: Lusine Hakobyan Date Analyzed: 9/6/16
Sample Type: 1.0 L Bottle-Vac™ Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1BV06802

Initial Pressure (psig): -2.00 Final Pressure (psig): 5.23

Canister Dilution Factor: 1.57

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	2.0	ND	0.77	
75-35-4	1,1-Dichloroethene	ND	2.0	ND	0.50	
75-09-2	Methylene Chloride	ND	2.0	ND	0.57	
75-34-3	1,1-Dichloroethane	**4.5**	2.0	**1.1**	0.49	
67-66-3	Chloroform	**2.9**	2.0	**0.60**	0.40	
107-06-2	1,2-Dichloroethane	ND	2.0	ND	0.49	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ND	0.36	
71-43-2	Benzene	**3.3**	2.0	**1.0**	0.61	
56-23-5	Carbon Tetrachloride	ND	2.0	ND	0.31	
78-87-5	1,2-Dichloropropane	ND	2.0	ND	0.42	
79-01-6	Trichloroethene	**8.7**	2.0	**1.6**	0.37	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ND	0.36	
108-88-3	Toluene	**33**	2.0	**8.8**	0.52	
127-18-4	Tetrachloroethene	**110**	2.0	**16**	0.29	
108-90-7	Chlorobenzene	ND	2.0	ND	0.43	
100-41-4	Ethylbenzene	**20**	2.0	**4.7**	0.45	
179601-23-1	m,p-Xylenes	**82**	3.9	**19**	0.90	
100-42-5	Styrene	ND	2.0	ND	0.46	
95-47-6	o-Xylene	**32**	2.0	**7.5**	0.45	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ND	0.29	
106-46-7	1,4-Dichlorobenzene	ND	2.0	ND	0.33	
95-50-1	1,2-Dichlorobenzene	ND	2.0	ND	0.33	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Quantum Water & Environment**
Client Sample ID: **DUPE-V** ALS Project ID: P1604198
Client Project ID: **Adams County Shooting Range** ALS Sample ID: P1604198-004

Test Code: EPA TO-15 Modified Date Collected: 8/24/16
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 8/30/16
Analyst: Lusine Hakobyan Date Analyzed: 9/2/16
Sample Type: 1.0 L Bottle-Vac™ Volume(s) Analyzed: 0.075 Liter(s)
Test Notes:
Container ID: 1BV06810

Initial Pressure (psig): -1.88 Final Pressure (psig): 5.23

Canister Dilution Factor: 1.55

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	**490**	10	**190**	4.0	
75-35-4	1,1-Dichloroethene	ND	10	ND	2.6	
75-09-2	Methylene Chloride	ND	10	ND	3.0	
75-34-3	1,1-Dichloroethane	ND	10	ND	2.6	
67-66-3	Chloroform	ND	10	ND	2.1	
107-06-2	1,2-Dichloroethane	ND	10	ND	2.6	
71-55-6	1,1,1-Trichloroethane	ND	10	ND	1.9	
71-43-2	Benzene	**92**	10	**29**	3.2	
56-23-5	Carbon Tetrachloride	ND	10	ND	1.6	
78-87-5	1,2-Dichloropropane	ND	10	ND	2.2	
79-01-6	Trichloroethene	**36**	10	**6.7**	1.9	
79-00-5	1,1,2-Trichloroethane	ND	10	ND	1.9	
108-88-3	Toluene	**60**	10	**16**	2.7	
127-18-4	Tetrachloroethene	ND	10	ND	1.5	
108-90-7	Chlorobenzene	ND	10	ND	2.2	
100-41-4	Ethylbenzene	**61**	10	**14**	2.4	
179601-23-1	m,p-Xylenes	**62**	21	**14**	4.8	
100-42-5	Styrene	ND	10	ND	2.4	
95-47-6	o-Xylene	**30**	10	**7.0**	2.4	
79-34-5	1,1,2,2-Tetrachloroethane	ND	10	ND	1.5	
106-46-7	1,4-Dichlorobenzene	ND	10	ND	1.7	
95-50-1	1,2-Dichlorobenzene	ND	10	ND	1.7	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Quantum Water & Environment**
Client Sample ID: **Trip Blank** ALS Project ID: P1604198
Client Project ID: **Adams County Shooting Range** ALS Sample ID: P1604198-005

Test Code: EPA TO-15 Modified Date Collected: 8/24/16
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 8/30/16
Analyst: Lusine Hakobyan Date Analyzed: 9/2/16
Sample Type: 1.0 L Bottle-Vac™ Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1BV06806

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	1.3	ND	0.49	
75-35-4	1,1-Dichloroethene	ND	1.3	ND	0.32	
75-09-2	Methylene Chloride	ND	1.3	ND	0.36	
75-34-3	1,1-Dichloroethane	ND	1.3	ND	0.31	
67-66-3	Chloroform	ND	1.3	ND	0.26	
107-06-2	1,2-Dichloroethane	ND	1.3	ND	0.31	
71-55-6	1,1,1-Trichloroethane	ND	1.3	ND	0.23	
71-43-2	Benzene	ND	1.3	ND	0.39	
56-23-5	Carbon Tetrachloride	ND	1.3	ND	0.20	
78-87-5	1,2-Dichloropropane	ND	1.3	ND	0.27	
79-01-6	Trichloroethene	ND	1.3	ND	0.23	
79-00-5	1,1,2-Trichloroethane	ND	1.3	ND	0.23	
108-88-3	Toluene	ND	1.3	ND	0.33	
127-18-4	Tetrachloroethene	ND	1.3	ND	0.18	
108-90-7	Chlorobenzene	ND	1.3	ND	0.27	
100-41-4	Ethylbenzene	ND	1.3	ND	0.29	
179601-23-1	m,p-Xylenes	ND	2.5	ND	0.58	
100-42-5	Styrene	ND	1.3	ND	0.29	
95-47-6	o-Xylene	ND	1.3	ND	0.29	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.3	ND	0.18	
106-46-7	1,4-Dichlorobenzene	ND	1.3	ND	0.21	
95-50-1	1,2-Dichlorobenzene	ND	1.3	ND	0.21	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Quantum Water & Environment**
Client Sample ID: **Method Blank** ALS Project ID: P1604198
Client Project ID: **Adams County Shooting Range** ALS Sample ID: P160902-MB

Test Code: EPA TO-15 Modified Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 9/2/16
Sample Type: 1.0 L Bottle-Vac™ Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.50	ND	0.20	
75-35-4	1,1-Dichloroethene	ND	0.50	ND	0.13	
75-09-2	Methylene Chloride	ND	0.50	ND	0.14	
75-34-3	1,1-Dichloroethane	ND	0.50	ND	0.12	
67-66-3	Chloroform	ND	0.50	ND	0.10	
107-06-2	1,2-Dichloroethane	ND	0.50	ND	0.12	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ND	0.092	
71-43-2	Benzene	ND	0.50	ND	0.16	
56-23-5	Carbon Tetrachloride	ND	0.50	ND	0.080	
78-87-5	1,2-Dichloropropane	ND	0.50	ND	0.11	
79-01-6	Trichloroethene	ND	0.50	ND	0.093	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ND	0.092	
108-88-3	Toluene	ND	0.50	ND	0.13	
127-18-4	Tetrachloroethene	ND	0.50	ND	0.074	
108-90-7	Chlorobenzene	ND	0.50	ND	0.11	
100-41-4	Ethylbenzene	ND	0.50	ND	0.12	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
100-42-5	Styrene	ND	0.50	ND	0.12	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ND	0.073	
106-46-7	1,4-Dichlorobenzene	ND	0.50	ND	0.083	
95-50-1	1,2-Dichlorobenzene	ND	0.50	ND	0.083	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Quantum Water & Environment**
Client Sample ID: **Method Blank** ALS Project ID: P1604198
Client Project ID: **Adams County Shooting Range** ALS Sample ID: P160906-MB

Test Code: EPA TO-15 Modified Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 9/6/16
Sample Type: 1.0 L Bottle-Vac™ Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.50	ND	0.20	
75-35-4	1,1-Dichloroethene	ND	0.50	ND	0.13	
75-09-2	Methylene Chloride	ND	0.50	ND	0.14	
75-34-3	1,1-Dichloroethane	ND	0.50	ND	0.12	
67-66-3	Chloroform	ND	0.50	ND	0.10	
107-06-2	1,2-Dichloroethane	ND	0.50	ND	0.12	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ND	0.092	
71-43-2	Benzene	ND	0.50	ND	0.16	
56-23-5	Carbon Tetrachloride	ND	0.50	ND	0.080	
78-87-5	1,2-Dichloropropane	ND	0.50	ND	0.11	
79-01-6	Trichloroethene	ND	0.50	ND	0.093	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ND	0.092	
108-88-3	Toluene	ND	0.50	ND	0.13	
127-18-4	Tetrachloroethene	ND	0.50	ND	0.074	
108-90-7	Chlorobenzene	ND	0.50	ND	0.11	
100-41-4	Ethylbenzene	ND	0.50	ND	0.12	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
100-42-5	Styrene	ND	0.50	ND	0.12	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ND	0.073	
106-46-7	1,4-Dichlorobenzene	ND	0.50	ND	0.083	
95-50-1	1,2-Dichlorobenzene	ND	0.50	ND	0.083	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Quantum Water & Environment**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1604198
Client Project ID: **Adams County Shooting Range** ALS Sample ID: P160902-LCS

Test Code: EPA TO-15 Modified Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 9/2/16
Sample Type: 1.0 L Bottle-Vac™ Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	**Result µg/m³**	**% Recovery**	ALS Acceptance Limits	**Data Qualifier**
75-01-4	Vinyl Chloride	200	**184**	**92**	65-128	
75-35-4	1,1-Dichloroethene	216	**227**	**105**	72-123	
75-09-2	Methylene Chloride	222	**230**	**104**	63-117	
75-34-3	1,1-Dichloroethane	212	**213**	**100**	66-122	
67-66-3	Chloroform	224	**212**	**95**	68-117	
107-06-2	1,2-Dichloroethane	214	**189**	**88**	63-124	
71-55-6	1,1,1-Trichloroethane	210	**203**	**97**	68-120	
71-43-2	Benzene	226	**221**	**98**	61-110	
56-23-5	Carbon Tetrachloride	230	**208**	**90**	65-137	
78-87-5	1,2-Dichloropropane	216	**224**	**104**	67-122	
79-01-6	Trichloroethene	216	**213**	**99**	71-121	
79-00-5	1,1,2-Trichloroethane	216	**225**	**104**	73-121	
108-88-3	Toluene	218	**219**	**100**	67-117	
127-18-4	Tetrachloroethene	202	**217**	**107**	65-126	
108-90-7	Chlorobenzene	220	**227**	**103**	68-120	
100-41-4	Ethylbenzene	218	**225**	**103**	69-123	
179601-23-1	m,p-Xylenes	428	**443**	**104**	67-125	
100-42-5	Styrene	222	**237**	**107**	68-132	
95-47-6	o-Xylene	210	**215**	**102**	67-124	
79-34-5	1,1,2,2-Tetrachloroethane	210	**226**	**108**	72-128	
106-46-7	1,4-Dichlorobenzene	208	**230**	**111**	62-129	
95-50-1	1,2-Dichlorobenzene	220	**239**	**109**	62-134	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Quantum Water & Environment**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1604198
Client Project ID: **Adams County Shooting Range** ALS Sample ID: P160906-LCS

Test Code: EPA TO-15 Modified Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 9/6/16
Sample Type: 1.0 L Bottle-Vac™ Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	**Result µg/m³**	**% Recovery**	ALS Acceptance Limits	**Data Qualifier**
75-01-4	Vinyl Chloride	200	**232**	**116**	65-128	
75-35-4	1,1-Dichloroethene	216	**247**	**114**	72-123	
75-09-2	Methylene Chloride	222	**226**	**102**	63-117	
75-34-3	1,1-Dichloroethane	212	**229**	**108**	66-122	
67-66-3	Chloroform	224	**231**	**103**	68-117	
107-06-2	1,2-Dichloroethane	214	**237**	**111**	63-124	
71-55-6	1,1,1-Trichloroethane	210	**235**	**112**	68-120	
71-43-2	Benzene	226	**209**	**92**	61-110	
56-23-5	Carbon Tetrachloride	230	**247**	**107**	65-137	
78-87-5	1,2-Dichloropropane	216	**235**	**109**	67-122	
79-01-6	Trichloroethene	216	**228**	**106**	71-121	
79-00-5	1,1,2-Trichloroethane	216	**240**	**111**	73-121	
108-88-3	Toluene	218	**226**	**104**	67-117	
127-18-4	Tetrachloroethene	202	**225**	**111**	65-126	
108-90-7	Chlorobenzene	220	**243**	**110**	68-120	
100-41-4	Ethylbenzene	218	**247**	**113**	69-123	
179601-23-1	m,p-Xylenes	428	**497**	**116**	67-125	
100-42-5	Styrene	222	**264**	**119**	68-132	
95-47-6	o-Xylene	210	**239**	**114**	67-124	
79-34-5	1,1,2,2-Tetrachloroethane	210	**249**	**119**	72-128	
106-46-7	1,4-Dichlorobenzene	208	**251**	**121**	62-129	
95-50-1	1,2-Dichlorobenzene	220	**268**	**122**	62-134	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

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LABORATORY REPORT

September 23, 2016

Joe Lammers
Quantum Water & Environment
1746 Cole Boulevard, Suite 340
Golden, CO 80401

RE: Adams County Shooting Range

Dear Joe:

Enclosed are the revised results of the samples submitted to our laboratory on August 30, 2016. Please note this report has been revised to quantify a sub-set of the initial EPA TO-15 compounds reported. No data was altered in this revision, and all revised pages will be denoted with a "Revised Page" footer located in the bottom right-hand corner of each page. For your reference, these analyses have been assigned our service request number P1604198.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

Samantha Henningsen

By Samantha Henningsen at 10:53 am, Sep 23, 2016

Samantha Henningsen
Project Manager

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www.alsglobal.com

Client: Quantum Water & Environment
Project: Adams County Shooting Range

Service Request No: P1604198

CASE NARRATIVE

The samples were received intact under chain of custody on August 30, 2016 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Hydrogen Sulfide Analysis

Four of the samples were analyzed for hydrogen sulfide per ASTM D 5504-12 using a gas chromatograph equipped with a sulfur chemiluminescence detector (SCD). This method is included on the laboratory's NELAP scope of accreditation, however it is not part of the DoD-ELAP or AIHA-LAP, LLC accreditation.

Methane Analysis

Four of the samples were analyzed per modified EPA Method TO-3 for methane using a gas chromatograph equipped with a flame ionization detector (FID). This procedure is described in laboratory SOP VOA-TO3C1C6. This method is included on the laboratory's DoD-ELAP scope of accreditation, however it is not part of the NELAP or AIHA-LAP, LLC accreditation.

Volatile Organic Compound Analysis

The samples were also analyzed for volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. This procedure is described in laboratory SOP VOA-TO15. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator. This method is included on the laboratory's NELAP and DoD-ELAP scope of accreditation, however it is not part of the AIHA-LAP, LLC accreditation. Any analytes flagged with an X are not included on the NELAP or DoD-ELAP accreditation.

The containers were cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. Please note, projects which require reporting below the MRL could have results between the MRL and method detection limit (MDL) that are biased high.

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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
AIHA-LAP, LLC	http://www.aihaaccreditedlabs.org	101661
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0694
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2014025
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	977273
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-003
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-16-7
Utah DOH (NELAP)	http://www.health.utah.gov/lab/labimp/certification/index.html	CA016272016-6
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: Quantum Water & Environment
Service Request: P1604198
Project ID: Adams County Shooting Range

Date Received: 8/30/2016
Time Received: 10:10

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	TO-3 Modified - C1C6+ Can	ASTM D 5504-12 - H2S Can	TO-15 - VOC Cans
AC-GMP-2	P1604198-001	Air	8/24/2016	10:50	1BV06793	-1.72	5.62	X	X	X
AC-GMP-4	P1604198-002	Air	8/24/2016	12:10	1BV06807	-2.03	5.36	X	X	X
AC-P2	P1604198-003	Air	8/24/2016	12:40	1BV06802	-2.00	5.23	X	X	X
DUPE-V	P1604198-004	Air	8/24/2016	00:00	1BV06810	-1.88	5.23	X	X	X
Trip Blank	P1604198-005	Air	8/24/2016	00:00	1BV06806	-14.29	5.87			X

ALS Environmental

2665 Park Center Drive, Suite A, Simi Valley, CA 93065
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Chain-of-Custody

P1604198

Form 202r8

		SAMPLER	Joe Lammers	DATE	8.25.2016	WORKORDER #	
PROJECT NAME	Adams County Shooting Range	SITE ID		TURNAROUND		PAGE	1 of 1
PROJECT No.		EDD FORMAT				DISPOSAL	By Lab or Return to Client
		PURCHASE ORDER					
COMPANY NAME	Quantum Water and Environment	BILL TO COMPANY					
SEND REPORT TO	joe@quantumwaterco.com	INVOICE ATTN TO					
ADDRESS	1746 Cole Boulevard, Suite 340	ADDRESS					
CITY / STATE / ZIP	Lakewood/CO/80401	CITY / STATE / ZIP					
PHONE	720-810-2194	PHONE					
FAX		FAX					
E-MAIL	joe@quantumwaterco.com	E-MAIL					

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	H2S (D5504)	VOCs (T0-15)	Methane (EPA TO-3)	
5 of 19 (1)	AC-GMP-2 (serial 16297)	Air	8.24.2016	1050	1	NA		x	x	x	
(2)	AC-GMP-4 (serial 16292)	Air	8.24.2016	1210	1	NA		x	x	x	
(3)	AC-P2 (Serial 16301)	Air	8.24.2016	1240	1	NA		x	x	x	
(4)	DUPE-V (Serial 16037)	Air	8.24.2016	-	1	NA		x	x	x	
(5)	Trip Blank	Air	8.24.2016	-	1	NA			x		

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:	QC PACKAGE (check below)	
		LEVEL II (Standard QC)
		LEVEL III (Std QC + forms)
		LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	Joe Lammers	Joe Lammers	8.25.2016	700
RECEIVED BY	[signature]	8/30/16 1010		
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

ALS Environmental
Sample Acceptance Check Form

Client: Quantum Water & Environment Work order: P1604198

Project: Adams County Shooting Range

Sample(s) received on: 8/30/16 Date opened: 8/30/16 by: KKELPE

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☐	☒	☐
	Location of seal(s)? _____ Sealing Lid?	☐	☐	☒
	Were signature and date included?	☐	☐	☒
	Were seals intact?	☐	☐	☒
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1604198-001.01	1.0 L Bottle-Vac™					
P1604198-002.01	1.0 L Bottle-Vac™					
P1604198-003.01	1.0 L Bottle-Vac™					
P1604198-004.01	1.0 L Bottle-Vac™					
P1604198-005.01	1.0 L Bottle-Vac™					

Explain any discrepancies: (include lab sample ID numbers):

Short sulfur hold time, analyst notified.

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Quantum Water & Environment**
Client Project ID: **Adams County Shooting Range** ALS Project ID: P1604198

Hydrogen Sulfide

Test Code: ASTM D 5504-12
Instrument ID: Agilent 6890A/GC13/SCD Date(s) Collected: 8/24/16
Analyst: Mike Conejo Date Received: 8/30/16
Sample Type: 1.0 L Bottle-Vac™(s) Date Analyzed: 8/30/16
Test Notes:

Client Sample ID	ALS Sample ID	Canister Dilution Factor	Injection Volume ml(s)	Time Analyzed	**Result µg/m³**	MRL µg/m³	**Result ppbV**	MRL ppbV	Data Qualifier
AC-GMP-2	P1604198-001	1.57	1.0	12:39	ND	11	ND	7.9	
AC-GMP-4	P1604198-002	1.58	1.0	12:26	ND	11	ND	7.9	
AC-P2	P1604198-003	1.57	1.0	13:05	ND	11	ND	7.9	
DUPE-V	P1604198-004	1.55	1.0	12:52	ND	11	ND	7.8	
Method Blank	P160830-MB	1.00	1.0	08:07	ND	7.0	ND	5.0	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Quantum Water & Environment**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1604198
Client Project ID: **Adams County Shooting Range** ALS Sample ID: P160830-LCS

Test Code: ASTM D 5504-12 Date Collected: NA
Instrument ID: Agilent 6890A/GC13/SCD Date Received: NA
Analyst: Mike Conejo Date Analyzed: 8/30/16
Sample Type: 1.0 L Bottle-Vac™ Volume(s) Analyzed: NA ml(s)
Test Notes:

CAS #	Compound	Spike Amount ppbV	Result ppbV	% Recovery	ALS Acceptance Limits	Data Qualifier
7783-06-4	Hydrogen Sulfide	1,000	**1,060**	**106**	75-148	

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Quantum Water & Environment**
Client Project ID: **Adams County Shooting Range** ALS Project ID: P1604198

Methane

Test Code: EPA TO-3 Modified
Instrument ID: HP5890 II/GC8/FID Date(s) Collected: 8/24/16
Analyst: Adam McAfee Date Received: 8/30/16
Sampling Media: 1.0 L Bottle-Vac™(s) Date Analyzed: 8/30/16
Test Notes:

Client Sample ID	ALS Sample ID	Canister Dilution Factor	Injection Volume ml(s)	Result ppmV	MRL ppmV	Data Qualifier
AC-GMP-2	P1604198-001	1.57	0.10	**140,000**	7.9	
AC-GMP-4	P1604198-002	1.58	0.10	**190**	7.9	
AC-P2	P1604198-003	1.57	0.10	**61**	7.9	
DUPE-V	P1604198-004	1.55	0.10	**110,000**	7.8	
Method Blank	P160830-MB	1.00	1.0	ND	0.50	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Quantum Water & Environment**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1604198
Client Project ID: **Adams County Shooting Range** ALS Sample ID: P160830-LCS

Test Code: EPA TO-3 Modified Date Collected: NA
Instrument ID: HP5890 II/GC8/FID Date Received: NA
Analyst: Adam McAfee Date Analyzed: 8/30/16
Sampling Media: 1.0 L Bottle-Vac™ Volume(s) Analyzed: NA ml(s)
Test Notes:

Compound	Spike Amount ppmV	**Result ppmV**	**% Recovery**	ALS Acceptance Limits	Data Qualifier
Methane	1,010	**1,010**	**100**	79-107	

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Quantum Water & Environment**
Client Sample ID: **AC-GMP-2** ALS Project ID: P1604198
Client Project ID: **Adams County Shooting Range** ALS Sample ID: P1604198-001

Test Code: EPA TO-15 Modified Date Collected: 8/24/16
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 8/30/16
Analyst: Lusine Hakobyan Date Analyzed: 9/2/16
Sample Type: 1.0 L Bottle-Vac™ Volume(s) Analyzed: 0.075 Liter(s)
Test Notes:
Container ID: 1BV06793

Initial Pressure (psig): -1.72 Final Pressure (psig): 5.62

Canister Dilution Factor: 1.57

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	**320**	10	**120**	4.1	
75-35-4	1,1-Dichloroethene	ND	10	ND	2.6	
75-09-2	Methylene Chloride	ND	10	ND	3.0	
75-34-3	1,1-Dichloroethane	ND	10	ND	2.6	
67-66-3	Chloroform	ND	10	ND	2.1	
107-06-2	1,2-Dichloroethane	ND	10	ND	2.6	
71-55-6	1,1,1-Trichloroethane	ND	10	ND	1.9	
71-43-2	Benzene	**76**	10	**24**	3.3	
56-23-5	Carbon Tetrachloride	ND	10	ND	1.7	
78-87-5	1,2-Dichloropropane	ND	10	ND	2.3	
79-01-6	Trichloroethene	**32**	10	**5.9**	1.9	
79-00-5	1,1,2-Trichloroethane	ND	10	ND	1.9	
108-88-3	Toluene	**52**	10	**14**	2.8	
127-18-4	Tetrachloroethene	ND	10	ND	1.5	
108-90-7	Chlorobenzene	ND	10	ND	2.3	
100-41-4	Ethylbenzene	**32**	10	**7.3**	2.4	
179601-23-1	m,p-Xylenes	**54**	21	**12**	4.8	
100-42-5	Styrene	ND	10	ND	2.5	
95-47-6	o-Xylene	**24**	10	**5.6**	2.4	
79-34-5	1,1,2,2-Tetrachloroethane	ND	10	ND	1.5	
106-46-7	1,4-Dichlorobenzene	ND	10	ND	1.7	
95-50-1	1,2-Dichlorobenzene	ND	10	ND	1.7	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Quantum Water & Environment**
Client Sample ID: **AC-GMP-4** ALS Project ID: P1604198
Client Project ID: **Adams County Shooting Range** ALS Sample ID: P1604198-002

Test Code: EPA TO-15 Modified Date Collected: 8/24/16
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 8/30/16
Analyst: Lusine Hakobyan Date Analyzed: 9/2/16
Sample Type: 1.0 L Bottle-Vac™ Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1BV06807

Initial Pressure (psig): -2.03 Final Pressure (psig): 5.36

Canister Dilution Factor: 1.58

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	2.0	ND	0.77	
75-35-4	1,1-Dichloroethene	ND	2.0	ND	0.50	
75-09-2	Methylene Chloride	ND	2.0	ND	0.57	
75-34-3	1,1-Dichloroethane	ND	2.0	ND	0.49	
67-66-3	Chloroform	ND	2.0	ND	0.40	
107-06-2	1,2-Dichloroethane	ND	2.0	ND	0.49	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ND	0.36	
71-43-2	Benzene	**4.7**	2.0	**1.5**	0.62	
56-23-5	Carbon Tetrachloride	ND	2.0	ND	0.31	
78-87-5	1,2-Dichloropropane	ND	2.0	ND	0.43	
79-01-6	Trichloroethene	**2.8**	2.0	**0.51**	0.37	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ND	0.36	
108-88-3	Toluene	**35**	2.0	**9.4**	0.52	
127-18-4	Tetrachloroethene	ND	2.0	ND	0.29	
108-90-7	Chlorobenzene	ND	2.0	ND	0.43	
100-41-4	Ethylbenzene	**19**	2.0	**4.4**	0.45	
179601-23-1	m,p-Xylenes	**75**	4.0	**17**	0.91	
100-42-5	Styrene	ND	2.0	ND	0.46	
95-47-6	o-Xylene	**30**	2.0	**6.8**	0.45	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ND	0.29	
106-46-7	1,4-Dichlorobenzene	ND	2.0	ND	0.33	
95-50-1	1,2-Dichlorobenzene	ND	2.0	ND	0.33	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
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ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Quantum Water & Environment**
Client Sample ID: **AC-P2** ALS Project ID: P1604198
Client Project ID: **Adams County Shooting Range** ALS Sample ID: P1604198-003

Test Code: EPA TO-15 Modified Date Collected: 8/24/16
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 8/30/16
Analyst: Lusine Hakobyan Date Analyzed: 9/6/16
Sample Type: 1.0 L Bottle-Vac™ Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1BV06802

Initial Pressure (psig): -2.00 Final Pressure (psig): 5.23

Canister Dilution Factor: 1.57

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	2.0	ND	0.77	
75-35-4	1,1-Dichloroethene	ND	2.0	ND	0.50	
75-09-2	Methylene Chloride	ND	2.0	ND	0.57	
75-34-3	1,1-Dichloroethane	**4.5**	2.0	**1.1**	0.49	
67-66-3	Chloroform	**2.9**	2.0	**0.60**	0.40	
107-06-2	1,2-Dichloroethane	ND	2.0	ND	0.49	
71-55-6	1,1,1-Trichloroethane	ND	2.0	ND	0.36	
71-43-2	Benzene	**3.3**	2.0	**1.0**	0.61	
56-23-5	Carbon Tetrachloride	ND	2.0	ND	0.31	
78-87-5	1,2-Dichloropropane	ND	2.0	ND	0.42	
79-01-6	Trichloroethene	**8.7**	2.0	**1.6**	0.37	
79-00-5	1,1,2-Trichloroethane	ND	2.0	ND	0.36	
108-88-3	Toluene	**33**	2.0	**8.8**	0.52	
127-18-4	Tetrachloroethene	**110**	2.0	**16**	0.29	
108-90-7	Chlorobenzene	ND	2.0	ND	0.43	
100-41-4	Ethylbenzene	**20**	2.0	**4.7**	0.45	
179601-23-1	m,p-Xylenes	**82**	3.9	**19**	0.90	
100-42-5	Styrene	ND	2.0	ND	0.46	
95-47-6	o-Xylene	**32**	2.0	**7.5**	0.45	
79-34-5	1,1,2,2-Tetrachloroethane	ND	2.0	ND	0.29	
106-46-7	1,4-Dichlorobenzene	ND	2.0	ND	0.33	
95-50-1	1,2-Dichlorobenzene	ND	2.0	ND	0.33	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Quantum Water & Environment**
Client Sample ID: **DUPE-V** ALS Project ID: P1604198
Client Project ID: **Adams County Shooting Range** ALS Sample ID: P1604198-004

Test Code: EPA TO-15 Modified Date Collected: 8/24/16
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 8/30/16
Analyst: Lusine Hakobyan Date Analyzed: 9/2/16
Sample Type: 1.0 L Bottle-Vac™ Volume(s) Analyzed: 0.075 Liter(s)
Test Notes:
Container ID: 1BV06810

Initial Pressure (psig): -1.88 Final Pressure (psig): 5.23

Canister Dilution Factor: 1.55

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	**490**	10	**190**	4.0	
75-35-4	1,1-Dichloroethene	ND	10	ND	2.6	
75-09-2	Methylene Chloride	ND	10	ND	3.0	
75-34-3	1,1-Dichloroethane	ND	10	ND	2.6	
67-66-3	Chloroform	ND	10	ND	2.1	
107-06-2	1,2-Dichloroethane	ND	10	ND	2.6	
71-55-6	1,1,1-Trichloroethane	ND	10	ND	1.9	
71-43-2	Benzene	**92**	10	**29**	3.2	
56-23-5	Carbon Tetrachloride	ND	10	ND	1.6	
78-87-5	1,2-Dichloropropane	ND	10	ND	2.2	
79-01-6	Trichloroethene	**36**	10	**6.7**	1.9	
79-00-5	1,1,2-Trichloroethane	ND	10	ND	1.9	
108-88-3	Toluene	**60**	10	**16**	2.7	
127-18-4	Tetrachloroethene	ND	10	ND	1.5	
108-90-7	Chlorobenzene	ND	10	ND	2.2	
100-41-4	Ethylbenzene	**61**	10	**14**	2.4	
179601-23-1	m,p-Xylenes	**62**	21	**14**	4.8	
100-42-5	Styrene	ND	10	ND	2.4	
95-47-6	o-Xylene	**30**	10	**7.0**	2.4	
79-34-5	1,1,2,2-Tetrachloroethane	ND	10	ND	1.5	
106-46-7	1,4-Dichlorobenzene	ND	10	ND	1.7	
95-50-1	1,2-Dichlorobenzene	ND	10	ND	1.7	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Quantum Water & Environment**
Client Sample ID: **Trip Blank** ALS Project ID: P1604198
Client Project ID: **Adams County Shooting Range** ALS Sample ID: P1604198-005

Test Code: EPA TO-15 Modified Date Collected: 8/24/16
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: 8/30/16
Analyst: Lusine Hakobyan Date Analyzed: 9/2/16
Sample Type: 1.0 L Bottle-Vac™ Volume(s) Analyzed: 0.40 Liter(s)
Test Notes:
Container ID: 1BV06806

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	1.3	ND	0.49	
75-35-4	1,1-Dichloroethene	ND	1.3	ND	0.32	
75-09-2	Methylene Chloride	ND	1.3	ND	0.36	
75-34-3	1,1-Dichloroethane	ND	1.3	ND	0.31	
67-66-3	Chloroform	ND	1.3	ND	0.26	
107-06-2	1,2-Dichloroethane	ND	1.3	ND	0.31	
71-55-6	1,1,1-Trichloroethane	ND	1.3	ND	0.23	
71-43-2	Benzene	ND	1.3	ND	0.39	
56-23-5	Carbon Tetrachloride	ND	1.3	ND	0.20	
78-87-5	1,2-Dichloropropane	ND	1.3	ND	0.27	
79-01-6	Trichloroethene	ND	1.3	ND	0.23	
79-00-5	1,1,2-Trichloroethane	ND	1.3	ND	0.23	
108-88-3	Toluene	ND	1.3	ND	0.33	
127-18-4	Tetrachloroethene	ND	1.3	ND	0.18	
108-90-7	Chlorobenzene	ND	1.3	ND	0.27	
100-41-4	Ethylbenzene	ND	1.3	ND	0.29	
179601-23-1	m,p-Xylenes	ND	2.5	ND	0.58	
100-42-5	Styrene	ND	1.3	ND	0.29	
95-47-6	o-Xylene	ND	1.3	ND	0.29	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.3	ND	0.18	
106-46-7	1,4-Dichlorobenzene	ND	1.3	ND	0.21	
95-50-1	1,2-Dichlorobenzene	ND	1.3	ND	0.21	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Quantum Water & Environment**
Client Sample ID: **Method Blank** ALS Project ID: P1604198
Client Project ID: **Adams County Shooting Range** ALS Sample ID: P160902-MB

Test Code: EPA TO-15 Modified Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 9/2/16
Sample Type: 1.0 L Bottle-Vac™ Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.50	ND	0.20	
75-35-4	1,1-Dichloroethene	ND	0.50	ND	0.13	
75-09-2	Methylene Chloride	ND	0.50	ND	0.14	
75-34-3	1,1-Dichloroethane	ND	0.50	ND	0.12	
67-66-3	Chloroform	ND	0.50	ND	0.10	
107-06-2	1,2-Dichloroethane	ND	0.50	ND	0.12	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ND	0.092	
71-43-2	Benzene	ND	0.50	ND	0.16	
56-23-5	Carbon Tetrachloride	ND	0.50	ND	0.080	
78-87-5	1,2-Dichloropropane	ND	0.50	ND	0.11	
79-01-6	Trichloroethene	ND	0.50	ND	0.093	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ND	0.092	
108-88-3	Toluene	ND	0.50	ND	0.13	
127-18-4	Tetrachloroethene	ND	0.50	ND	0.074	
108-90-7	Chlorobenzene	ND	0.50	ND	0.11	
100-41-4	Ethylbenzene	ND	0.50	ND	0.12	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
100-42-5	Styrene	ND	0.50	ND	0.12	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ND	0.073	
106-46-7	1,4-Dichlorobenzene	ND	0.50	ND	0.083	
95-50-1	1,2-Dichlorobenzene	ND	0.50	ND	0.083	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **Quantum Water & Environment**
Client Sample ID: **Method Blank** ALS Project ID: P1604198
Client Project ID: **Adams County Shooting Range** ALS Sample ID: P160906-MB

Test Code: EPA TO-15 Modified Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 9/6/16
Sample Type: 1.0 L Bottle-Vac™ Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.50	ND	0.20	
75-35-4	1,1-Dichloroethene	ND	0.50	ND	0.13	
75-09-2	Methylene Chloride	ND	0.50	ND	0.14	
75-34-3	1,1-Dichloroethane	ND	0.50	ND	0.12	
67-66-3	Chloroform	ND	0.50	ND	0.10	
107-06-2	1,2-Dichloroethane	ND	0.50	ND	0.12	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ND	0.092	
71-43-2	Benzene	ND	0.50	ND	0.16	
56-23-5	Carbon Tetrachloride	ND	0.50	ND	0.080	
78-87-5	1,2-Dichloropropane	ND	0.50	ND	0.11	
79-01-6	Trichloroethene	ND	0.50	ND	0.093	
79-00-5	1,1,2-Trichloroethane	ND	0.50	ND	0.092	
108-88-3	Toluene	ND	0.50	ND	0.13	
127-18-4	Tetrachloroethene	ND	0.50	ND	0.074	
108-90-7	Chlorobenzene	ND	0.50	ND	0.11	
100-41-4	Ethylbenzene	ND	0.50	ND	0.12	
179601-23-1	m,p-Xylenes	ND	1.0	ND	0.23	
100-42-5	Styrene	ND	0.50	ND	0.12	
95-47-6	o-Xylene	ND	0.50	ND	0.12	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ND	0.073	
106-46-7	1,4-Dichlorobenzene	ND	0.50	ND	0.083	
95-50-1	1,2-Dichlorobenzene	ND	0.50	ND	0.083	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Quantum Water & Environment**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1604198
Client Project ID: **Adams County Shooting Range** ALS Sample ID: P160902-LCS

Test Code: EPA TO-15 Modified Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 9/2/16
Sample Type: 1.0 L Bottle-Vac™ Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	**Result µg/m³**	**% Recovery**	ALS Acceptance Limits	**Data Qualifier**
75-01-4	Vinyl Chloride	200	**184**	**92**	65-128	
75-35-4	1,1-Dichloroethene	216	**227**	**105**	72-123	
75-09-2	Methylene Chloride	222	**230**	**104**	63-117	
75-34-3	1,1-Dichloroethane	212	**213**	**100**	66-122	
67-66-3	Chloroform	224	**212**	**95**	68-117	
107-06-2	1,2-Dichloroethane	214	**189**	**88**	63-124	
71-55-6	1,1,1-Trichloroethane	210	**203**	**97**	68-120	
71-43-2	Benzene	226	**221**	**98**	61-110	
56-23-5	Carbon Tetrachloride	230	**208**	**90**	65-137	
78-87-5	1,2-Dichloropropane	216	**224**	**104**	67-122	
79-01-6	Trichloroethene	216	**213**	**99**	71-121	
79-00-5	1,1,2-Trichloroethane	216	**225**	**104**	73-121	
108-88-3	Toluene	218	**219**	**100**	67-117	
127-18-4	Tetrachloroethene	202	**217**	**107**	65-126	
108-90-7	Chlorobenzene	220	**227**	**103**	68-120	
100-41-4	Ethylbenzene	218	**225**	**103**	69-123	
179601-23-1	m,p-Xylenes	428	**443**	**104**	67-125	
100-42-5	Styrene	222	**237**	**107**	68-132	
95-47-6	o-Xylene	210	**215**	**102**	67-124	
79-34-5	1,1,2,2-Tetrachloroethane	210	**226**	**108**	72-128	
106-46-7	1,4-Dichlorobenzene	208	**230**	**111**	62-129	
95-50-1	1,2-Dichlorobenzene	220	**239**	**109**	62-134	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **Quantum Water & Environment**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1604198
Client Project ID: **Adams County Shooting Range** ALS Sample ID: P160906-LCS

Test Code: EPA TO-15 Modified Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/6890N/MS16 Date Received: NA
Analyst: Lusine Hakobyan Date Analyzed: 9/6/16
Sample Type: 1.0 L Bottle-Vac™ Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	**Result µg/m³**	**% Recovery**	ALS Acceptance Limits	**Data Qualifier**
75-01-4	Vinyl Chloride	200	**232**	**116**	65-128	
75-35-4	1,1-Dichloroethene	216	**247**	**114**	72-123	
75-09-2	Methylene Chloride	222	**226**	**102**	63-117	
75-34-3	1,1-Dichloroethane	212	**229**	**108**	66-122	
67-66-3	Chloroform	224	**231**	**103**	68-117	
107-06-2	1,2-Dichloroethane	214	**237**	**111**	63-124	
71-55-6	1,1,1-Trichloroethane	210	**235**	**112**	68-120	
71-43-2	Benzene	226	**209**	**92**	61-110	
56-23-5	Carbon Tetrachloride	230	**247**	**107**	65-137	
78-87-5	1,2-Dichloropropane	216	**235**	**109**	67-122	
79-01-6	Trichloroethene	216	**228**	**106**	71-121	
79-00-5	1,1,2-Trichloroethane	216	**240**	**111**	73-121	
108-88-3	Toluene	218	**226**	**104**	67-117	
127-18-4	Tetrachloroethene	202	**225**	**111**	65-126	
108-90-7	Chlorobenzene	220	**243**	**110**	68-120	
100-41-4	Ethylbenzene	218	**247**	**113**	69-123	
179601-23-1	m,p-Xylenes	428	**497**	**116**	67-125	
100-42-5	Styrene	222	**264**	**119**	68-132	
95-47-6	o-Xylene	210	**239**	**114**	67-124	
79-34-5	1,1,2,2-Tetrachloroethane	210	**249**	**119**	72-128	
106-46-7	1,4-Dichlorobenzene	208	**251**	**121**	62-129	
95-50-1	1,2-Dichlorobenzene	220	**268**	**122**	62-134	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

Appendix F7 - Laboratory Analysis Report - Spring Sampling (And First AC-MW3 Sample)

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

TestAmerica Job ID: 280-88651-1
Client Project/Site: Adams County Shooting Range

For:
Quantum Water Consulting
1746 Cole Blvd
Suite 340
Lakewood, Colorado 80401

Attn: Mr. John Dellaport

Stephanie Rothmeyer

Authorized for release by:
10/13/2016 3:18:24 PM

Stephanie Rothmeyer, Project Manager I
(303)736-0182
stephanie.rothmeyer@testamericainc.com

Table of Contents

Definitions/Glossary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-88651-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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: 280-88651-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: Quantum Water Consulting

Project: Adams County Shooting Range

Report Number: 280-88651-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 9/27/2016 at 11:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.1° C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)
Samples AC-SPRING (280-88651-1) and AC-MW-03 (280-88651-2) were analyzed for volatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 10/05/2016.

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

TOTAL METALS
Sample AC-SPRING (280-88651-1) was analyzed for total metals in accordance with EPA SW-846 Method 6010B. The samples were prepared and analyzed on 09/29/2016.

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

TOTAL METALS (ICPMS)
Sample AC-SPRING (280-88651-1) was analyzed for total metals (ICPMS) in accordance with SW846 6020A. The samples were prepared and analyzed on 09/29/2016.

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

ALKALINITY
Sample AC-SPRING (280-88651-1) was analyzed for Alkalinity in accordance with SM20 2320B. The samples were analyzed on 10/04/2016.

Alkalinity and Bicarbonate Alkalinity as CaCO3 were detected in method blank MB 280-345123/6 at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

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

ANIONS (28 DAYS)
Sample AC-SPRING (280-88651-1) was analyzed for anions (28 days) in accordance with EPA Method 300.0. The samples were analyzed

Job ID: 280-88651-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

on 09/27/2016.

Samples AC-SPRING (280-88651-1)[100X] and AC-SPRING (280-88651-1)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

ANIONS (48 HOURS)

Sample AC-SPRING (280-88651-1) was analyzed for anions (48 hours) in accordance with EPA Method 300.0. The samples were analyzed on 09/27/2016.

Sample AC-SPRING (280-88651-1)[5X] required dilution prior to analysis due to the Matrix Conductivity Threshold (MCT) of the instrument. The reporting limits have been adjusted accordingly.

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

Detection Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-88651-1

Client Sample ID: AC-SPRING — Lab Sample ID: 280-88651-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	9.4	J	10	1.9	ug/L	1		8260B	Total/NA
Calcium	450000		200	35	ug/L	1		6010B	Total/NA
Magnesium	320000		200	11	ug/L	1		6010B	Total/NA
Potassium	5600		3000	240	ug/L	1		6010B	Total/NA
Sodium	3900000		1000	92	ug/L	1		6010B	Total/NA
Antimony	0.73	J	2.0	0.40	ug/L	1		6020A	Total/NA
Arsenic	2.5	J	5.0	0.33	ug/L	1		6020A	Total/NA
Barium	22		1.0	0.29	ug/L	1		6020A	Total/NA
Cobalt	1.1		1.0	0.054	ug/L	1		6020A	Total/NA
Copper	3.5		2.0	0.56	ug/L	1		6020A	Total/NA
Lead	0.40	J	1.0	0.18	ug/L	1		6020A	Total/NA
Nickel	6.6		2.0	0.30	ug/L	1		6020A	Total/NA
Selenium	2.8	J	5.0	0.70	ug/L	1		6020A	Total/NA
Silver	0.062	J	5.0	0.033	ug/L	1		6020A	Total/NA
Vanadium	2.8	J	5.0	0.50	ug/L	1		6020A	Total/NA
Zinc	8.9	J	10	2.0	ug/L	1		6020A	Total/NA
Chloride	780		15	1.3	mg/L	5		300.0	Total/NA
Sulfate	8900		500	23	mg/L	100		300.0	Total/NA
Alkalinity	410	B	5.0	1.1	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	410	B	5.0	1.1	mg/L	1		SM 2320B	Total/NA

Client Sample ID: AC-MW-03 — Lab Sample ID: 280-88651-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	10		10	1.9	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-88651-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL DEN
6010B	Metals (ICP)	SW846	TAL DEN
6020A	Metals (ICP/MS)	SW846	TAL DEN
300.0	Anions, Ion Chromatography	MCAWW	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN

Protocol References:

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",
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-88651-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-88651-1	AC-SPRING	Water	09/26/16 16:10	09/27/16 11:30
280-88651-2	AC-MW-03	Water	09/26/16 15:25	09/27/16 11:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: AC-SPRING
Date Collected: 09/26/16 16:10
Date Received: 09/27/16 11:30

Lab Sample ID: 280-88651-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**9.4**	**J**	10	1.9	ug/L			10/05/16 23:38	1
Benzene	ND		1.0	0.16	ug/L			10/05/16 23:38	1
Bromoform	ND		1.0	0.19	ug/L			10/05/16 23:38	1
Bromomethane	ND		2.0	0.21	ug/L			10/05/16 23:38	1
2-Butanone (MEK)	ND		6.0	2.0	ug/L			10/05/16 23:38	1
Acrylonitrile	ND		20	1.4	ug/L			10/05/16 23:38	1
Carbon tetrachloride	ND		1.0	0.19	ug/L			10/05/16 23:38	1
Chlorobenzene	ND		1.0	0.17	ug/L			10/05/16 23:38	1
Chlorobromomethane	ND		1.0	0.10	ug/L			10/05/16 23:38	1
Chlorodibromomethane	ND		1.0	0.17	ug/L			10/05/16 23:38	1
Chloroethane	ND		2.0	0.41	ug/L			10/05/16 23:38	1
Chloroform	ND		1.0	0.16	ug/L			10/05/16 23:38	1
Chloromethane	ND		2.0	0.30	ug/L			10/05/16 23:38	1
cis-1,2-Dichloroethene	ND		1.0	0.15	ug/L			10/05/16 23:38	1
cis-1,3-Dichloropropene	ND		1.0	0.16	ug/L			10/05/16 23:38	1
1,2-Dibromo-3-Chloropropane	ND		5.0	0.47	ug/L			10/05/16 23:38	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			10/05/16 23:38	1
Dibromomethane	ND		1.0	0.17	ug/L			10/05/16 23:38	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			10/05/16 23:38	1
1,4-Dichlorobenzene	ND		1.0	0.16	ug/L			10/05/16 23:38	1
Dichlorobromomethane	ND		1.0	0.17	ug/L			10/05/16 23:38	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			10/05/16 23:38	1
1,2-Dichloroethane	ND		1.0	0.13	ug/L			10/05/16 23:38	1
1,1-Dichloroethene	ND		1.0	0.23	ug/L			10/05/16 23:38	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			10/05/16 23:38	1
Carbon disulfide	ND		2.0	0.45	ug/L			10/05/16 23:38	1
Ethylbenzene	ND		1.0	0.16	ug/L			10/05/16 23:38	1
2-Hexanone	ND		5.0	1.7	ug/L			10/05/16 23:38	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.98	ug/L			10/05/16 23:38	1
m-Xylene & p-Xylene	ND		2.0	0.34	ug/L			10/05/16 23:38	1
o-Xylene	ND		1.0	0.19	ug/L			10/05/16 23:38	1
Styrene	ND		1.0	0.17	ug/L			10/05/16 23:38	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.21	ug/L			10/05/16 23:38	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			10/05/16 23:38	1
Tetrachloroethene	ND		1.0	0.20	ug/L			10/05/16 23:38	1
Toluene	ND		1.0	0.17	ug/L			10/05/16 23:38	1
trans-1,2-Dichloroethene	ND		1.0	0.15	ug/L			10/05/16 23:38	1
trans-1,3-Dichloropropene	ND		3.0	0.19	ug/L			10/05/16 23:38	1
1,1,1-Trichloroethane	ND		1.0	0.16	ug/L			10/05/16 23:38	1
1,1,2-Trichloroethane	ND		1.0	0.27	ug/L			10/05/16 23:38	1
Trichloroethene	ND		1.0	0.16	ug/L			10/05/16 23:38	1
Trichlorofluoromethane	ND		2.0	0.29	ug/L			10/05/16 23:38	1
1,2,3-Trichloropropane	ND		2.5	0.33	ug/L			10/05/16 23:38	1
Vinyl chloride	ND		1.0	0.10	ug/L			10/05/16 23:38	1
Xylenes, Total	ND		2.0	0.19	ug/L			10/05/16 23:38	1
trans-1,4-Dichloro-2-butene	ND		3.0	0.80	ug/L			10/05/16 23:38	1
Iodomethane	ND		1.0	0.23	ug/L			10/05/16 23:38	1
Vinyl acetate	ND		3.0	0.94	ug/L			10/05/16 23:38	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*94*		*78 - 120*		*10/05/16 23:38*	*1*
Dibromofluoromethane (Surr)	*100*		*77 - 120*		*10/05/16 23:38*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*70 - 127*		*10/05/16 23:38*	*1*
Toluene-d8 (Surr)	*108*		*80 - 125*		*10/05/16 23:38*	*1*

Client Sample ID: AC-MW-03
Date Collected: 09/26/16 15:25
Date Received: 09/27/16 11:30

Lab Sample ID: 280-88651-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**10**		10	1.9	ug/L			10/05/16 03:37	1
Benzene	ND		1.0	0.16	ug/L			10/05/16 03:37	1
Bromoform	ND		1.0	0.19	ug/L			10/05/16 03:37	1
Bromomethane	ND		2.0	0.21	ug/L			10/05/16 03:37	1
2-Butanone (MEK)	ND		6.0	2.0	ug/L			10/05/16 03:37	1
Acrylonitrile	ND		20	1.4	ug/L			10/05/16 03:37	1
Carbon tetrachloride	ND		1.0	0.19	ug/L			10/05/16 03:37	1
Chlorobenzene	ND		1.0	0.17	ug/L			10/05/16 03:37	1
Chlorobromomethane	ND		1.0	0.10	ug/L			10/05/16 03:37	1
Chlorodibromomethane	ND		1.0	0.17	ug/L			10/05/16 03:37	1
Chloroethane	ND		2.0	0.41	ug/L			10/05/16 03:37	1
Chloroform	ND		1.0	0.16	ug/L			10/05/16 03:37	1
Chloromethane	ND		2.0	0.30	ug/L			10/05/16 03:37	1
cis-1,2-Dichloroethene	ND		1.0	0.15	ug/L			10/05/16 03:37	1
cis-1,3-Dichloropropene	ND		1.0	0.16	ug/L			10/05/16 03:37	1
1,2-Dibromo-3-Chloropropane	ND		5.0	0.47	ug/L			10/05/16 03:37	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			10/05/16 03:37	1
Dibromomethane	ND		1.0	0.17	ug/L			10/05/16 03:37	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			10/05/16 03:37	1
1,4-Dichlorobenzene	ND		1.0	0.16	ug/L			10/05/16 03:37	1
Dichlorobromomethane	ND		1.0	0.17	ug/L			10/05/16 03:37	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			10/05/16 03:37	1
1,2-Dichloroethane	ND		1.0	0.13	ug/L			10/05/16 03:37	1
1,1-Dichloroethene	ND		1.0	0.23	ug/L			10/05/16 03:37	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			10/05/16 03:37	1
Carbon disulfide	ND		2.0	0.45	ug/L			10/05/16 03:37	1
Ethylbenzene	ND		1.0	0.16	ug/L			10/05/16 03:37	1
2-Hexanone	ND		5.0	1.7	ug/L			10/05/16 03:37	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.98	ug/L			10/05/16 03:37	1
m-Xylene & p-Xylene	ND		2.0	0.34	ug/L			10/05/16 03:37	1
o-Xylene	ND		1.0	0.19	ug/L			10/05/16 03:37	1
Styrene	ND		1.0	0.17	ug/L			10/05/16 03:37	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.21	ug/L			10/05/16 03:37	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			10/05/16 03:37	1
Tetrachloroethene	ND		1.0	0.20	ug/L			10/05/16 03:37	1
Toluene	ND		1.0	0.17	ug/L			10/05/16 03:37	1
trans-1,2-Dichloroethene	ND		1.0	0.15	ug/L			10/05/16 03:37	1
trans-1,3-Dichloropropene	ND		3.0	0.19	ug/L			10/05/16 03:37	1
1,1,1-Trichloroethane	ND		1.0	0.16	ug/L			10/05/16 03:37	1
1,1,2-Trichloroethane	ND		1.0	0.27	ug/L			10/05/16 03:37	1
Trichloroethene	ND		1.0	0.16	ug/L			10/05/16 03:37	1
Trichlorofluoromethane	ND		2.0	0.29	ug/L			10/05/16 03:37	1
1,2,3-Trichloropropane	ND		2.5	0.33	ug/L			10/05/16 03:37	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: AC-MW-03
Date Collected: 09/26/16 15:25
Date Received: 09/27/16 11:30

Lab Sample ID: 280-88651-2
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		1.0	0.10	ug/L			10/05/16 03:37	1
Xylenes, Total	ND		2.0	0.19	ug/L			10/05/16 03:37	1
trans-1,4-Dichloro-2-butene	ND		3.0	0.80	ug/L			10/05/16 03:37	1
Iodomethane	ND		1.0	0.23	ug/L			10/05/16 03:37	1
Vinyl acetate	ND		3.0	0.94	ug/L			10/05/16 03:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*78 - 120*		*10/05/16 03:37*	*1*
Dibromofluoromethane (Surr)	*93*		*77 - 120*		*10/05/16 03:37*	*1*
1,2-Dichloroethane-d4 (Surr)	*80*		*70 - 127*		*10/05/16 03:37*	*1*
Toluene-d8 (Surr)	*112*		*80 - 125*		*10/05/16 03:37*	*1*

Method: 6010B - Metals (ICP)

Client Sample ID: AC-SPRING
Date Collected: 09/26/16 16:10
Date Received: 09/27/16 11:30

Lab Sample ID: 280-88651-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**450000**		200	35	ug/L		09/29/16 08:00	09/29/16 23:15	1
Magnesium	**320000**		200	11	ug/L		09/29/16 08:00	09/29/16 23:15	1
Potassium	**5600**		3000	240	ug/L		09/29/16 08:00	09/29/16 23:15	1
Sodium	**3900000**		1000	92	ug/L		09/29/16 08:00	09/29/16 23:15	1

Method: 6020A - Metals (ICP/MS)

Client Sample ID: AC-SPRING
Date Collected: 09/26/16 16:10
Date Received: 09/27/16 11:30

Lab Sample ID: 280-88651-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.73**	**J**	2.0	0.40	ug/L		09/29/16 08:00	09/29/16 16:19	1
Arsenic	**2.5**	**J**	5.0	0.33	ug/L		09/29/16 08:00	09/29/16 16:19	1
Barium	**22**		1.0	0.29	ug/L		09/29/16 08:00	09/29/16 16:19	1
Beryllium	ND		1.0	0.080	ug/L		09/29/16 08:00	09/29/16 16:19	1
Cadmium	ND		1.0	0.27	ug/L		09/29/16 08:00	09/29/16 16:19	1
Chromium	ND		2.0	0.50	ug/L		09/29/16 08:00	09/29/16 16:19	1
Cobalt	**1.1**		1.0	0.054	ug/L		09/29/16 08:00	09/29/16 16:19	1
Copper	**3.5**		2.0	0.56	ug/L		09/29/16 08:00	09/29/16 16:19	1
Lead	**0.40**	**J**	1.0	0.18	ug/L		09/29/16 08:00	09/29/16 16:19	1
Nickel	**6.6**		2.0	0.30	ug/L		09/29/16 08:00	09/29/16 16:19	1
Selenium	**2.8**	**J**	5.0	0.70	ug/L		09/29/16 08:00	09/29/16 16:19	1
Silver	**0.062**	**J**	5.0	0.033	ug/L		09/29/16 08:00	09/29/16 16:19	1
Thallium	ND		1.0	0.050	ug/L		09/29/16 08:00	09/29/16 16:19	1
Vanadium	**2.8**	**J**	5.0	0.50	ug/L		09/29/16 08:00	09/29/16 16:19	1
Zinc	**8.9**	**J**	10	2.0	ug/L		09/29/16 08:00	09/29/16 16:19	1

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-88651-1

General Chemistry

Client Sample ID: AC-SPRING
Date Collected: 09/26/16 16:10
Date Received: 09/27/16 11:30

Lab Sample ID: 280-88651-1
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**780**		15	1.3	mg/L			09/27/16 22:04	5
Nitrate as N	ND		2.5	0.21	mg/L			09/27/16 22:04	5
Nitrite as N	ND		2.5	0.25	mg/L			09/27/16 22:04	5
Sulfate	**8900**		500	23	mg/L			09/27/16 22:22	100
Alkalinity	**410**	**B**	5.0	1.1	mg/L			10/04/16 12:36	1
Bicarbonate Alkalinity as CaCO3	**410**	**B**	5.0	1.1	mg/L			10/04/16 12:36	1
Carbonate Alkalinity as CaCO3	ND		5.0	1.1	mg/L			10/04/16 12:36	1

Surrogate Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-88651-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	12DCE	TOL
Lab Sample ID	Client Sample ID	(78-120)	(77-120)	(70-127)	(80-125)
280-88651-1	AC-SPRING	94	100	90	108
280-88651-2	AC-MW-03	102	93	80	112
LCS 280-345049/4	Lab Control Sample	106	94	80	113
LCS 280-345209/6	Lab Control Sample	99	104	93	111
LCSD 280-345049/5	Lab Control Sample Dup	105	95	84	110
LCSD 280-345209/7	Lab Control Sample Dup	95	103	92	106
MB 280-345049/8	Method Blank	102	92	79	108
MB 280-345209/8	Method Blank	96	105	93	111

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 280-345049/8
Matrix: Water
Analysis Batch: 345049

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	1.9	ug/L			10/04/16 21:04	1
Benzene	ND		1.0	0.16	ug/L			10/04/16 21:04	1
Bromoform	ND		1.0	0.19	ug/L			10/04/16 21:04	1
Bromomethane	ND		2.0	0.21	ug/L			10/04/16 21:04	1
2-Butanone (MEK)	ND		6.0	2.0	ug/L			10/04/16 21:04	1
Acrylonitrile	ND		20	1.4	ug/L			10/04/16 21:04	1
Carbon tetrachloride	ND		1.0	0.19	ug/L			10/04/16 21:04	1
Chlorobenzene	ND		1.0	0.17	ug/L			10/04/16 21:04	1
Chlorobromomethane	ND		1.0	0.10	ug/L			10/04/16 21:04	1
Chlorodibromomethane	ND		1.0	0.17	ug/L			10/04/16 21:04	1
Chloroethane	ND		2.0	0.41	ug/L			10/04/16 21:04	1
Chloroform	ND		1.0	0.16	ug/L			10/04/16 21:04	1
Chloromethane	ND		2.0	0.30	ug/L			10/04/16 21:04	1
cis-1,2-Dichloroethene	ND		1.0	0.15	ug/L			10/04/16 21:04	1
cis-1,3-Dichloropropene	ND		1.0	0.16	ug/L			10/04/16 21:04	1
1,2-Dibromo-3-Chloropropane	ND		5.0	0.47	ug/L			10/04/16 21:04	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			10/04/16 21:04	1
Dibromomethane	ND		1.0	0.17	ug/L			10/04/16 21:04	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			10/04/16 21:04	1
1,4-Dichlorobenzene	ND		1.0	0.16	ug/L			10/04/16 21:04	1
Dichlorobromomethane	ND		1.0	0.17	ug/L			10/04/16 21:04	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			10/04/16 21:04	1
1,2-Dichloroethane	ND		1.0	0.13	ug/L			10/04/16 21:04	1
1,1-Dichloroethene	ND		1.0	0.23	ug/L			10/04/16 21:04	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			10/04/16 21:04	1
Carbon disulfide	ND		2.0	0.45	ug/L			10/04/16 21:04	1
Ethylbenzene	ND		1.0	0.16	ug/L			10/04/16 21:04	1
2-Hexanone	ND		5.0	1.7	ug/L			10/04/16 21:04	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.98	ug/L			10/04/16 21:04	1
m-Xylene & p-Xylene	ND		2.0	0.34	ug/L			10/04/16 21:04	1
o-Xylene	ND		1.0	0.19	ug/L			10/04/16 21:04	1
Styrene	ND		1.0	0.17	ug/L			10/04/16 21:04	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.21	ug/L			10/04/16 21:04	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			10/04/16 21:04	1
Tetrachloroethene	ND		1.0	0.20	ug/L			10/04/16 21:04	1
Toluene	ND		1.0	0.17	ug/L			10/04/16 21:04	1
trans-1,2-Dichloroethene	ND		1.0	0.15	ug/L			10/04/16 21:04	1
trans-1,3-Dichloropropene	ND		3.0	0.19	ug/L			10/04/16 21:04	1
1,1,1-Trichloroethane	ND		1.0	0.16	ug/L			10/04/16 21:04	1
1,1,2-Trichloroethane	ND		1.0	0.27	ug/L			10/04/16 21:04	1
Trichloroethene	ND		1.0	0.16	ug/L			10/04/16 21:04	1
Trichlorofluoromethane	ND		2.0	0.29	ug/L			10/04/16 21:04	1
1,2,3-Trichloropropane	ND		2.5	0.33	ug/L			10/04/16 21:04	1
Vinyl chloride	ND		1.0	0.10	ug/L			10/04/16 21:04	1
Xylenes, Total	ND		2.0	0.19	ug/L			10/04/16 21:04	1
trans-1,4-Dichloro-2-butene	ND		3.0	0.80	ug/L			10/04/16 21:04	1
Iodomethane	ND		1.0	0.23	ug/L			10/04/16 21:04	1
Vinyl acetate	ND		3.0	0.94	ug/L			10/04/16 21:04	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*102*		*78 - 120*		*10/04/16 21:04*	*1*
Dibromofluoromethane (Surr)	*92*		*77 - 120*		*10/04/16 21:04*	*1*
1,2-Dichloroethane-d4 (Surr)	*79*		*70 - 127*		*10/04/16 21:04*	*1*
Toluene-d8 (Surr)	*108*		*80 - 125*		*10/04/16 21:04*	*1*

Lab Sample ID: LCS 280-345049/4
Matrix: Water
Analysis Batch: 345049

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	20.0	21.1		ug/L		105	39 - 156
Benzene	5.00	5.43		ug/L		109	65 - 135
Bromoform	5.00	4.77		ug/L		95	62 - 135
Bromomethane	5.00	5.05		ug/L		101	45 - 135
2-Butanone (MEK)	20.0	23.9		ug/L		120	44 - 177
Carbon tetrachloride	5.00	4.41		ug/L		88	65 - 135
Chlorobenzene	5.00	5.09		ug/L		102	65 - 135
Chlorobromomethane	5.00	4.97		ug/L		99	65 - 135
Chlorodibromomethane	5.00	5.09		ug/L		102	65 - 135
Chloroethane	5.00	5.21		ug/L		104	46 - 136
Chloroform	5.00	4.78		ug/L		96	65 - 135
Chloromethane	5.00	6.20		ug/L		124	34 - 145
cis-1,2-Dichloroethene	5.00	5.26		ug/L		105	65 - 135
cis-1,3-Dichloropropene	5.00	5.69		ug/L		114	65 - 135
1,2-Dibromo-3-Chloropropane	5.00	5.01		ug/L		100	57 - 135
1,2-Dibromoethane	5.00	5.10		ug/L		102	65 - 135
Dibromomethane	5.00	4.75		ug/L		95	65 - 135
1,2-Dichlorobenzene	5.00	5.13		ug/L		103	65 - 135
1,4-Dichlorobenzene	5.00	5.18		ug/L		104	65 - 135
Dichlorobromomethane	5.00	4.74		ug/L		95	65 - 135
1,1-Dichloroethane	5.00	5.42		ug/L		108	65 - 135
1,2-Dichloroethane	5.00	4.34		ug/L		87	65 - 135
1,1-Dichloroethene	5.00	5.30		ug/L		106	65 - 136
1,2-Dichloropropane	5.00	5.48		ug/L		110	64 - 135
Carbon disulfide	5.00	5.69		ug/L		114	55 - 143
Ethylbenzene	5.00	5.29		ug/L		106	65 - 135
2-Hexanone	20.0	23.0		ug/L		115	57 - 139
4-Methyl-2-pentanone (MIBK)	20.0	21.3		ug/L		106	60 - 150
m-Xylene & p-Xylene	5.00	5.34		ug/L		107	65 - 135
o-Xylene	5.00	5.54		ug/L		111	65 - 135
Styrene	5.00	5.25		ug/L		105	65 - 135
1,1,1,2-Tetrachloroethane	5.00	4.99		ug/L		100	65 - 135
1,1,2,2-Tetrachloroethane	5.00	5.40		ug/L		108	58 - 135
Tetrachloroethene	5.00	5.15		ug/L		103	65 - 135
Toluene	5.00	5.22		ug/L		104	65 - 135
trans-1,2-Dichloroethene	5.00	5.21		ug/L		104	65 - 135
trans-1,3-Dichloropropene	5.00	4.44		ug/L		89	65 - 135
1,1,1-Trichloroethane	5.00	4.54		ug/L		91	65 - 135
1,1,2-Trichloroethane	5.00	4.75		ug/L		95	64 - 135
Trichloroethene	5.00	4.92		ug/L		98	65 - 135
Trichlorofluoromethane	5.00	4.64		ug/L		93	53 - 137
1,2,3-Trichloropropane	5.00	5.09		ug/L		102	65 - 135
Vinyl chloride	5.00	5.89		ug/L		118	40 - 137
Xylenes, Total	10.0	10.9		ug/L		109	65 - 135

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 280-345049/4
Matrix: Water
Analysis Batch: 345049

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Vinyl acetate			10.0	12.2		ug/L		122	11 - 187		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*106*		*78 - 120*
Dibromofluoromethane (Surr)	*94*		*77 - 120*
1,2-Dichloroethane-d4 (Surr)	*80*		*70 - 127*
Toluene-d8 (Surr)	*113*		*80 - 125*

Lab Sample ID: LCSD 280-345049/5
Matrix: Water
Analysis Batch: 345049

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone			20.0	22.9		ug/L		114	39 - 156	8	23
Benzene			5.00	5.07		ug/L		101	65 - 135	7	20
Bromoform			5.00	4.37		ug/L		87	62 - 135	9	27
Bromomethane			5.00	5.53		ug/L		111	45 - 135	9	33
2-Butanone (MEK)			20.0	24.8		ug/L		124	44 - 177	4	32
Carbon tetrachloride			5.00	4.29		ug/L		86	65 - 135	3	21
Chlorobenzene			5.00	4.83		ug/L		97	65 - 135	5	20
Chlorobromomethane			5.00	4.66		ug/L		93	65 - 135	7	29
Chlorodibromomethane			5.00	4.65		ug/L		93	65 - 135	9	20
Chloroethane			5.00	5.80		ug/L		116	46 - 136	11	25
Chloroform			5.00	4.61		ug/L		92	65 - 135	4	20
Chloromethane			5.00	6.66		ug/L		133	34 - 145	7	24
cis-1,2-Dichloroethene			5.00	4.97		ug/L		99	65 - 135	6	20
cis-1,3-Dichloropropene			5.00	5.33		ug/L		107	65 - 135	6	26
1,2-Dibromo-3-Chloropropane			5.00	4.77	J	ug/L		95	57 - 135	5	22
1,2-Dibromoethane			5.00	4.80		ug/L		96	65 - 135	6	27
Dibromomethane			5.00	4.35		ug/L		87	65 - 135	9	26
1,2-Dichlorobenzene			5.00	4.60		ug/L		92	65 - 135	11	20
1,4-Dichlorobenzene			5.00	4.73		ug/L		95	65 - 135	9	23
Dichlorobromomethane			5.00	4.45		ug/L		89	65 - 135	6	20
1,1-Dichloroethane			5.00	5.26		ug/L		105	65 - 135	3	21
1,2-Dichloroethane			5.00	4.24		ug/L		85	65 - 135	2	20
1,1-Dichloroethene			5.00	5.01		ug/L		100	65 - 136	6	20
1,2-Dichloropropane			5.00	5.15		ug/L		103	64 - 135	6	20
Carbon disulfide			5.00	5.52		ug/L		110	55 - 143	3	20
Ethylbenzene			5.00	4.90		ug/L		98	65 - 135	8	20
2-Hexanone			20.0	23.7		ug/L		118	57 - 139	3	25
4-Methyl-2-pentanone (MIBK)			20.0	22.3		ug/L		112	60 - 150	5	22
m-Xylene & p-Xylene			5.00	4.99		ug/L		100	65 - 135	7	20
o-Xylene			5.00	5.12		ug/L		102	65 - 135	8	20
Styrene			5.00	4.90		ug/L		98	65 - 135	7	26
1,1,1,2-Tetrachloroethane			5.00	4.73		ug/L		95	65 - 135	5	20
1,1,2,2-Tetrachloroethane			5.00	5.16		ug/L		103	58 - 135	5	20
Tetrachloroethene			5.00	4.80		ug/L		96	65 - 135	7	20
Toluene			5.00	4.83		ug/L		97	65 - 135	8	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 280-345049/5
Matrix: Water
Analysis Batch: 345049

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
trans-1,2-Dichloroethene			5.00	4.89		ug/L		98	65 - 135	7	24
trans-1,3-Dichloropropene			5.00	4.14		ug/L		83	65 - 135	7	26
1,1,1-Trichloroethane			5.00	4.48		ug/L		90	65 - 135	1	20
1,1,2-Trichloroethane			5.00	4.47		ug/L		89	64 - 135	6	27
Trichloroethene			5.00	4.59		ug/L		92	65 - 135	7	20
Trichlorofluoromethane			5.00	4.97		ug/L		99	53 - 137	7	27
1,2,3-Trichloropropane			5.00	4.61		ug/L		92	65 - 135	10	23
Vinyl chloride			5.00	6.26		ug/L		125	40 - 137	6	24
Xylenes, Total			10.0	10.1		ug/L		101	65 - 135	7	20
Vinyl acetate			10.0	13.8		ug/L		138	11 - 187	12	24

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*105*		*78 - 120*
Dibromofluoromethane (Surr)	*95*		*77 - 120*
1,2-Dichloroethane-d4 (Surr)	*84*		*70 - 127*
Toluene-d8 (Surr)	*110*		*80 - 125*

Lab Sample ID: MB 280-345209/8
Matrix: Water
Analysis Batch: 345209

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		10	1.9	ug/L			10/05/16 22:36	1
Benzene	ND		1.0	0.16	ug/L			10/05/16 22:36	1
Bromoform	ND		1.0	0.19	ug/L			10/05/16 22:36	1
Bromomethane	ND		2.0	0.21	ug/L			10/05/16 22:36	1
2-Butanone (MEK)	ND		6.0	2.0	ug/L			10/05/16 22:36	1
Acrylonitrile	ND		20	1.4	ug/L			10/05/16 22:36	1
Carbon tetrachloride	ND		1.0	0.19	ug/L			10/05/16 22:36	1
Chlorobenzene	ND		1.0	0.17	ug/L			10/05/16 22:36	1
Chlorobromomethane	ND		1.0	0.10	ug/L			10/05/16 22:36	1
Chlorodibromomethane	ND		1.0	0.17	ug/L			10/05/16 22:36	1
Chloroethane	ND		2.0	0.41	ug/L			10/05/16 22:36	1
Chloroform	ND		1.0	0.16	ug/L			10/05/16 22:36	1
Chloromethane	ND		2.0	0.30	ug/L			10/05/16 22:36	1
cis-1,2-Dichloroethene	ND		1.0	0.15	ug/L			10/05/16 22:36	1
cis-1,3-Dichloropropene	ND		1.0	0.16	ug/L			10/05/16 22:36	1
1,2-Dibromo-3-Chloropropane	ND		5.0	0.47	ug/L			10/05/16 22:36	1
1,2-Dibromoethane	ND		1.0	0.18	ug/L			10/05/16 22:36	1
Dibromomethane	ND		1.0	0.17	ug/L			10/05/16 22:36	1
1,2-Dichlorobenzene	ND		1.0	0.15	ug/L			10/05/16 22:36	1
1,4-Dichlorobenzene	ND		1.0	0.16	ug/L			10/05/16 22:36	1
Dichlorobromomethane	ND		1.0	0.17	ug/L			10/05/16 22:36	1
1,1-Dichloroethane	ND		1.0	0.22	ug/L			10/05/16 22:36	1
1,2-Dichloroethane	ND		1.0	0.13	ug/L			10/05/16 22:36	1
1,1-Dichloroethene	ND		1.0	0.23	ug/L			10/05/16 22:36	1
1,2-Dichloropropane	ND		1.0	0.18	ug/L			10/05/16 22:36	1
Carbon disulfide	ND		2.0	0.45	ug/L			10/05/16 22:36	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 280-345209/8
Matrix: Water
Analysis Batch: 345209

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.0	0.16	ug/L			10/05/16 22:36	1
2-Hexanone	ND		5.0	1.7	ug/L			10/05/16 22:36	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	0.98	ug/L			10/05/16 22:36	1
m-Xylene & p-Xylene	ND		2.0	0.34	ug/L			10/05/16 22:36	1
o-Xylene	ND		1.0	0.19	ug/L			10/05/16 22:36	1
Styrene	ND		1.0	0.17	ug/L			10/05/16 22:36	1
1,1,1,2-Tetrachloroethane	ND		1.0	0.21	ug/L			10/05/16 22:36	1
1,1,2,2-Tetrachloroethane	ND		1.0	0.21	ug/L			10/05/16 22:36	1
Tetrachloroethene	ND		1.0	0.20	ug/L			10/05/16 22:36	1
Toluene	ND		1.0	0.17	ug/L			10/05/16 22:36	1
trans-1,2-Dichloroethene	ND		1.0	0.15	ug/L			10/05/16 22:36	1
trans-1,3-Dichloropropene	ND		3.0	0.19	ug/L			10/05/16 22:36	1
1,1,1-Trichloroethane	ND		1.0	0.16	ug/L			10/05/16 22:36	1
1,1,2-Trichloroethane	ND		1.0	0.27	ug/L			10/05/16 22:36	1
Trichloroethene	ND		1.0	0.16	ug/L			10/05/16 22:36	1
Trichlorofluoromethane	ND		2.0	0.29	ug/L			10/05/16 22:36	1
1,2,3-Trichloropropane	ND		2.5	0.33	ug/L			10/05/16 22:36	1
Vinyl chloride	ND		1.0	0.10	ug/L			10/05/16 22:36	1
Xylenes, Total	ND		2.0	0.19	ug/L			10/05/16 22:36	1
trans-1,4-Dichloro-2-butene	ND		3.0	0.80	ug/L			10/05/16 22:36	1
Iodomethane	ND		1.0	0.23	ug/L			10/05/16 22:36	1
Vinyl acetate	ND		3.0	0.94	ug/L			10/05/16 22:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*78 - 120*		*10/05/16 22:36*	*1*
Dibromofluoromethane (Surr)	*105*		*77 - 120*		*10/05/16 22:36*	*1*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 127*		*10/05/16 22:36*	*1*
Toluene-d8 (Surr)	*111*		*80 - 125*		*10/05/16 22:36*	*1*

Lab Sample ID: LCS 280-345209/6
Matrix: Water
Analysis Batch: 345209

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	20.0	20.7		ug/L		104	39 - 156
Benzene	5.00	4.99		ug/L		100	65 - 135
Bromoform	5.00	4.72		ug/L		94	62 - 135
Bromomethane	5.00	5.26		ug/L		105	45 - 135
2-Butanone (MEK)	20.0	22.3		ug/L		112	44 - 177
Carbon tetrachloride	5.00	4.74		ug/L		95	65 - 135
Chlorobenzene	5.00	4.81		ug/L		96	65 - 135
Chlorobromomethane	5.00	5.12		ug/L		102	65 - 135
Chlorodibromomethane	5.00	4.82		ug/L		96	65 - 135
Chloroethane	5.00	4.88		ug/L		98	46 - 136
Chloroform	5.00	4.84		ug/L		97	65 - 135
Chloromethane	5.00	5.50		ug/L		110	34 - 145
cis-1,2-Dichloroethene	5.00	5.01		ug/L		100	65 - 135
cis-1,3-Dichloropropene	5.00	4.75		ug/L		95	65 - 135

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 280-345209/6
Matrix: Water
Analysis Batch: 345209

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromo-3-Chloropropane	5.00	4.97	J	ug/L		99	57 - 135
1,2-Dibromoethane	5.00	4.62		ug/L		92	65 - 135
Dibromomethane	5.00	4.75		ug/L		95	65 - 135
1,2-Dichlorobenzene	5.00	5.16		ug/L		103	65 - 135
1,4-Dichlorobenzene	5.00	4.90		ug/L		98	65 - 135
Dichlorobromomethane	5.00	4.85		ug/L		97	65 - 135
1,1-Dichloroethane	5.00	5.01		ug/L		100	65 - 135
1,2-Dichloroethane	5.00	4.66		ug/L		93	65 - 135
1,1-Dichloroethene	5.00	4.92		ug/L		98	65 - 136
1,2-Dichloropropane	5.00	4.91		ug/L		98	64 - 135
Carbon disulfide	5.00	4.91		ug/L		98	55 - 143
Ethylbenzene	5.00	4.81		ug/L		96	65 - 135
2-Hexanone	20.0	20.1		ug/L		100	57 - 139
4-Methyl-2-pentanone (MIBK)	20.0	20.5		ug/L		103	60 - 150
m-Xylene & p-Xylene	5.00	4.76		ug/L		95	65 - 135
o-Xylene	5.00	5.06		ug/L		101	65 - 135
Styrene	5.00	5.01		ug/L		100	65 - 135
1,1,1,2-Tetrachloroethane	5.00	4.74		ug/L		95	65 - 135
1,1,2,2-Tetrachloroethane	5.00	4.58		ug/L		92	58 - 135
Tetrachloroethene	5.00	5.07		ug/L		101	65 - 135
Toluene	5.00	5.09		ug/L		102	65 - 135
trans-1,2-Dichloroethene	5.00	4.91		ug/L		98	65 - 135
trans-1,3-Dichloropropene	5.00	4.55		ug/L		91	65 - 135
1,1,1-Trichloroethane	5.00	4.80		ug/L		96	65 - 135
1,1,2-Trichloroethane	5.00	4.75		ug/L		95	64 - 135
Trichloroethene	5.00	4.77		ug/L		95	65 - 135
Trichlorofluoromethane	5.00	4.79		ug/L		96	53 - 137
1,2,3-Trichloropropane	5.00	4.82		ug/L		96	65 - 135
Vinyl chloride	5.00	5.32		ug/L		106	40 - 137
Xylenes, Total	10.0	9.82		ug/L		98	65 - 135
Vinyl acetate	10.0	11.6		ug/L		116	11 - 187

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*78 - 120*
Dibromofluoromethane (Surr)	*104*		*77 - 120*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 127*
Toluene-d8 (Surr)	*111*		*80 - 125*

Lab Sample ID: LCSD 280-345209/7
Matrix: Water
Analysis Batch: 345209

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	20.0	20.5		ug/L		102	39 - 156	1	23
Benzene	5.00	5.07		ug/L		101	65 - 135	2	20
Bromoform	5.00	4.86		ug/L		97	62 - 135	3	27
Bromomethane	5.00	5.05		ug/L		101	45 - 135	4	33
2-Butanone (MEK)	20.0	21.7		ug/L		108	44 - 177	3	32

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 280-345209/7
Matrix: Water
Analysis Batch: 345209

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Carbon tetrachloride			5.00	4.82		ug/L		96	65 - 135	2	21
Chlorobenzene			5.00	4.83		ug/L		97	65 - 135	0	20
Chlorobromomethane			5.00	5.22		ug/L		104	65 - 135	2	29
Chlorodibromomethane			5.00	4.92		ug/L		98	65 - 135	2	20
Chloroethane			5.00	4.78		ug/L		96	46 - 136	2	25
Chloroform			5.00	4.83		ug/L		97	65 - 135	0	20
Chloromethane			5.00	5.32		ug/L		106	34 - 145	3	24
cis-1,2-Dichloroethene			5.00	5.05		ug/L		101	65 - 135	1	20
cis-1,3-Dichloropropene			5.00	4.84		ug/L		97	65 - 135	2	26
1,2-Dibromo-3-Chloropropane			5.00	4.82	J	ug/L		96	57 - 135	3	22
1,2-Dibromoethane			5.00	5.00		ug/L		100	65 - 135	8	27
Dibromomethane			5.00	4.85		ug/L		97	65 - 135	2	26
1,2-Dichlorobenzene			5.00	4.73		ug/L		95	65 - 135	9	20
1,4-Dichlorobenzene			5.00	4.88		ug/L		98	65 - 135	0	23
Dichlorobromomethane			5.00	4.84		ug/L		97	65 - 135	0	20
1,1-Dichloroethane			5.00	5.06		ug/L		101	65 - 135	1	21
1,2-Dichloroethane			5.00	4.63		ug/L		93	65 - 135	1	20
1,1-Dichloroethene			5.00	5.30		ug/L		106	65 - 136	7	20
1,2-Dichloropropane			5.00	4.95		ug/L		99	64 - 135	1	20
Carbon disulfide			5.00	5.22		ug/L		104	55 - 143	6	20
Ethylbenzene			5.00	4.79		ug/L		96	65 - 135	0	20
2-Hexanone			20.0	18.7		ug/L		94	57 - 139	7	25
4-Methyl-2-pentanone (MIBK)			20.0	19.6		ug/L		98	60 - 150	5	22
m-Xylene & p-Xylene			5.00	4.86		ug/L		97	65 - 135	2	20
o-Xylene			5.00	5.01		ug/L		100	65 - 135	1	20
Styrene			5.00	4.91		ug/L		98	65 - 135	2	26
1,1,1,2-Tetrachloroethane			5.00	4.79		ug/L		96	65 - 135	1	20
1,1,2,2-Tetrachloroethane			5.00	4.58		ug/L		92	58 - 135	0	20
Tetrachloroethene			5.00	5.05		ug/L		101	65 - 135	0	20
Toluene			5.00	5.12		ug/L		102	65 - 135	1	20
trans-1,2-Dichloroethene			5.00	5.14		ug/L		103	65 - 135	4	24
trans-1,3-Dichloropropene			5.00	4.50		ug/L		90	65 - 135	1	26
1,1,1-Trichloroethane			5.00	4.75		ug/L		95	65 - 135	1	20
1,1,2-Trichloroethane			5.00	4.78		ug/L		96	64 - 135	1	27
Trichloroethene			5.00	4.80		ug/L		96	65 - 135	1	20
Trichlorofluoromethane			5.00	4.70		ug/L		94	53 - 137	2	27
1,2,3-Trichloropropane			5.00	4.63		ug/L		93	65 - 135	4	23
Vinyl chloride			5.00	5.05		ug/L		101	40 - 137	5	24
Xylenes, Total			10.0	9.87		ug/L		99	65 - 135	1	20
Vinyl acetate			10.0	11.5		ug/L		115	11 - 187	1	24

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*78 - 120*
Dibromofluoromethane (Surr)	*103*		*77 - 120*
1,2-Dichloroethane-d4 (Surr)	*92*		*70 - 127*
Toluene-d8 (Surr)	*106*		*80 - 125*

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 280-344160/1-A
Matrix: Water
Analysis Batch: 344465

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 344160

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		200	35	ug/L		09/29/16 08:00	09/29/16 22:32	1
Magnesium	ND		200	11	ug/L		09/29/16 08:00	09/29/16 22:32	1
Potassium	ND		3000	240	ug/L		09/29/16 08:00	09/29/16 22:32	1
Sodium	ND		1000	92	ug/L		09/29/16 08:00	09/29/16 22:32	1

Lab Sample ID: LCS 280-344160/2-A
Matrix: Water
Analysis Batch: 344465

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 344160

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	50000	49600		ug/L		99	90 - 111
Magnesium	50000	48500		ug/L		97	90 - 113
Potassium	50000	51200		ug/L		102	89 - 114
Sodium	50000	52400		ug/L		105	90 - 115

Lab Sample ID: LCSD 280-344160/3-A
Matrix: Water
Analysis Batch: 344465

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 344160

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Calcium	50000	47900		ug/L		96	90 - 111	3	20
Magnesium	50000	47100		ug/L		94	90 - 113	3	20
Potassium	50000	49600		ug/L		99	89 - 114	3	20
Sodium	50000	50600		ug/L		101	90 - 115	4	20

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 280-344051/1-A
Matrix: Water
Analysis Batch: 344521

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 344051

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.0	0.40	ug/L		09/29/16 08:00	09/29/16 16:01	1
Arsenic	ND		5.0	0.33	ug/L		09/29/16 08:00	09/29/16 16:01	1
Barium	ND		1.0	0.29	ug/L		09/29/16 08:00	09/29/16 16:01	1
Beryllium	ND		1.0	0.080	ug/L		09/29/16 08:00	09/29/16 16:01	1
Cadmium	ND		1.0	0.27	ug/L		09/29/16 08:00	09/29/16 16:01	1
Chromium	ND		2.0	0.50	ug/L		09/29/16 08:00	09/29/16 16:01	1
Cobalt	ND		1.0	0.054	ug/L		09/29/16 08:00	09/29/16 16:01	1
Copper	ND		2.0	0.56	ug/L		09/29/16 08:00	09/29/16 16:01	1
Lead	ND		1.0	0.18	ug/L		09/29/16 08:00	09/29/16 16:01	1
Nickel	ND		2.0	0.30	ug/L		09/29/16 08:00	09/29/16 16:01	1
Selenium	ND		5.0	0.70	ug/L		09/29/16 08:00	09/29/16 16:01	1
Silver	ND		5.0	0.033	ug/L		09/29/16 08:00	09/29/16 16:01	1
Thallium	ND		1.0	0.050	ug/L		09/29/16 08:00	09/29/16 16:01	1
Vanadium	ND		5.0	0.50	ug/L		09/29/16 08:00	09/29/16 16:01	1
Zinc	ND		10	2.0	ug/L		09/29/16 08:00	09/29/16 16:01	1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 280-344051/2-A
Matrix: Water
Analysis Batch: 344521

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 344051

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	40.0	40.7		ug/L		102	85 - 115
Arsenic	40.0	40.1		ug/L		100	85 - 117
Barium	40.0	40.6		ug/L		102	85 - 118
Beryllium	40.0	40.3		ug/L		101	80 - 125
Cadmium	40.0	41.1		ug/L		103	85 - 115
Chromium	40.0	41.7		ug/L		104	84 - 121
Cobalt	40.0	41.7		ug/L		104	85 - 120
Copper	40.0	40.4		ug/L		101	85 - 119
Lead	40.0	42.1		ug/L		105	85 - 118
Nickel	40.0	40.9		ug/L		102	85 - 119
Selenium	40.0	40.7		ug/L		102	77 - 122
Silver	40.0	41.2		ug/L		103	85 - 115
Thallium	40.0	41.3		ug/L		103	85 - 118
Vanadium	40.0	41.2		ug/L		103	85 - 120
Zinc	40.0	43.1		ug/L		108	83 - 122

Lab Sample ID: 280-88651-1 MS
Matrix: Water
Analysis Batch: 344521

Client Sample ID: AC-SPRING
Prep Type: Total/NA
Prep Batch: 344051

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.73	J	40.0	43.4		ug/L		107	85 - 115
Arsenic	2.5	J	40.0	43.0		ug/L		101	85 - 117
Barium	22		40.0	62.1		ug/L		100	85 - 118
Beryllium	ND		40.0	42.9		ug/L		107	80 - 125
Cadmium	ND		40.0	36.6		ug/L		92	85 - 115
Chromium	ND		40.0	39.3		ug/L		98	84 - 121
Cobalt	1.1		40.0	39.9		ug/L		97	85 - 120
Copper	3.5		40.0	40.1		ug/L		91	85 - 119
Lead	0.40	J	40.0	37.8		ug/L		93	85 - 118
Nickel	6.6		40.0	44.4		ug/L		95	85 - 119
Selenium	2.8	J	40.0	49.1		ug/L		116	77 - 122
Silver	0.062	J	40.0	35.6		ug/L		89	85 - 115
Thallium	ND		40.0	37.2		ug/L		93	85 - 118
Vanadium	2.8	J	40.0	45.4		ug/L		107	85 - 120
Zinc	8.9	J	40.0	47.3		ug/L		96	83 - 122

Lab Sample ID: 280-88651-1 MSD
Matrix: Water
Analysis Batch: 344521

Client Sample ID: AC-SPRING
Prep Type: Total/NA
Prep Batch: 344051

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	0.73	J	40.0	43.5		ug/L		107	85 - 115	0	20
Arsenic	2.5	J	40.0	43.4		ug/L		102	85 - 117	1	20
Barium	22		40.0	63.9		ug/L		105	85 - 118	3	20
Beryllium	ND		40.0	42.7		ug/L		107	80 - 125	0	20
Cadmium	ND		40.0	38.2		ug/L		96	85 - 115	4	20
Chromium	ND		40.0	39.3		ug/L		98	84 - 121	0	20

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: 280-88651-1 MSD
Matrix: Water
Analysis Batch: 344521

Client Sample ID: AC-SPRING
Prep Type: Total/NA
Prep Batch: 344051

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cobalt	1.1		40.0	40.2		ug/L		98	85 - 120	1	20
Copper	3.5		40.0	40.8		ug/L		93	85 - 119	2	20
Lead	0.40	J	40.0	37.4		ug/L		93	85 - 118	1	20
Nickel	6.6		40.0	44.4		ug/L		95	85 - 119	0	20
Selenium	2.8	J	40.0	47.9		ug/L		113	77 - 122	3	20
Silver	0.062	J	40.0	36.2		ug/L		90	85 - 115	2	20
Thallium	ND		40.0	36.8		ug/L		92	85 - 118	1	20
Vanadium	2.8	J	40.0	45.0		ug/L		106	85 - 120	1	20
Zinc	8.9	J	40.0	46.6		ug/L		94	83 - 122	1	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 280-343900/6
Matrix: Water
Analysis Batch: 343900

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.50	0.042	mg/L			09/27/16 11:07	1
Nitrite as N	ND		0.50	0.049	mg/L			09/27/16 11:07	1

Lab Sample ID: LCS 280-343900/4
Matrix: Water
Analysis Batch: 343900

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	5.00	5.04		mg/L		101	90 - 110
Nitrite as N	5.00	5.04		mg/L		101	90 - 110

Lab Sample ID: LCSD 280-343900/5
Matrix: Water
Analysis Batch: 343900

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	5.00	5.05		mg/L		101	90 - 110	0	10
Nitrite as N	5.00	5.05		mg/L		101	90 - 110	0	10

Lab Sample ID: MRL 280-343900/3
Matrix: Water
Analysis Batch: 343900

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.200	0.208	J	mg/L		104	50 - 150
Nitrite as N	0.200	0.185	J	mg/L		92	50 - 150

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 280-343901/6
Matrix: Water
Analysis Batch: 343901

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		3.0	0.25	mg/L			09/27/16 11:07	1
Sulfate	ND		5.0	0.23	mg/L			09/27/16 11:07	1

Lab Sample ID: LCS 280-343901/4
Matrix: Water
Analysis Batch: 343901

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	100	99.4		mg/L		99	90 - 110
Sulfate	100	99.9		mg/L		100	90 - 110

Lab Sample ID: LCSD 280-343901/5
Matrix: Water
Analysis Batch: 343901

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	100	99.4		mg/L		99	90 - 110	0	10
Sulfate	100	99.8		mg/L		100	90 - 110	0	10

Lab Sample ID: MRL 280-343901/3
Matrix: Water
Analysis Batch: 343901

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.50	2.54	J	mg/L		102	50 - 150
Sulfate	2.50	2.48	J	mg/L		99	50 - 150

Method: SM 2320B - Alkalinity

Lab Sample ID: MB 280-345123/6
Matrix: Water
Analysis Batch: 345123

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	2.27	J	5.0	1.1	mg/L			10/04/16 11:34	1
Bicarbonate Alkalinity as CaCO3	1.21	J	5.0	1.1	mg/L			10/04/16 11:34	1
Carbonate Alkalinity as CaCO3	ND		5.0	1.1	mg/L			10/04/16 11:34	1

Lab Sample ID: LCS 280-345123/4
Matrix: Water
Analysis Batch: 345123

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	200	196		mg/L		98	90 - 110

Method: SM 2320B - Alkalinity (Continued)

Lab Sample ID: LCSD 280-345123/5
Matrix: Water
Analysis Batch: 345123

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

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity			200	199		mg/L		99	90 - 110	1	10

QC Association Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-88651-1

GC/MS VOA

Analysis Batch: 345049

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-88651-2	AC-MW-03	Total/NA	Water	8260B	
MB 280-345049/8	Method Blank	Total/NA	Water	8260B	
LCS 280-345049/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 280-345049/5	Lab Control Sample Dup	Total/NA	Water	8260B	

Analysis Batch: 345209

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-88651-1	AC-SPRING	Total/NA	Water	8260B	
MB 280-345209/8	Method Blank	Total/NA	Water	8260B	
LCS 280-345209/6	Lab Control Sample	Total/NA	Water	8260B	
LCSD 280-345209/7	Lab Control Sample Dup	Total/NA	Water	8260B	

Metals

Prep Batch: 344051

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-88651-1	AC-SPRING	Total/NA	Water	3020A	
MB 280-344051/1-A	Method Blank	Total/NA	Water	3020A	
LCS 280-344051/2-A	Lab Control Sample	Total/NA	Water	3020A	
280-88651-1 MS	AC-SPRING	Total/NA	Water	3020A	
280-88651-1 MSD	AC-SPRING	Total/NA	Water	3020A	

Prep Batch: 344160

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-88651-1	AC-SPRING	Total/NA	Water	3010A	
MB 280-344160/1-A	Method Blank	Total/NA	Water	3010A	
LCS 280-344160/2-A	Lab Control Sample	Total/NA	Water	3010A	
LCSD 280-344160/3-A	Lab Control Sample Dup	Total/NA	Water	3010A	

Analysis Batch: 344465

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-88651-1	AC-SPRING	Total/NA	Water	6010B	344160
MB 280-344160/1-A	Method Blank	Total/NA	Water	6010B	344160
LCS 280-344160/2-A	Lab Control Sample	Total/NA	Water	6010B	344160
LCSD 280-344160/3-A	Lab Control Sample Dup	Total/NA	Water	6010B	344160

Analysis Batch: 344521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-88651-1	AC-SPRING	Total/NA	Water	6020A	344051
MB 280-344051/1-A	Method Blank	Total/NA	Water	6020A	344051
LCS 280-344051/2-A	Lab Control Sample	Total/NA	Water	6020A	344051
280-88651-1 MS	AC-SPRING	Total/NA	Water	6020A	344051
280-88651-1 MSD	AC-SPRING	Total/NA	Water	6020A	344051

General Chemistry

Analysis Batch: 343900

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-88651-1	AC-SPRING	Total/NA	Water	300.0	
MB 280-343900/6	Method Blank	Total/NA	Water	300.0	

General Chemistry (Continued)

Analysis Batch: 343900 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 280-343900/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 280-343900/5	Lab Control Sample Dup	Total/NA	Water	300.0	
MRL 280-343900/3	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 343901

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-88651-1	AC-SPRING	Total/NA	Water	300.0	
280-88651-1	AC-SPRING	Total/NA	Water	300.0	
MB 280-343901/6	Method Blank	Total/NA	Water	300.0	
LCS 280-343901/4	Lab Control Sample	Total/NA	Water	300.0	
LCSD 280-343901/5	Lab Control Sample Dup	Total/NA	Water	300.0	
MRL 280-343901/3	Lab Control Sample	Total/NA	Water	300.0	

Analysis Batch: 345123

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-88651-1	AC-SPRING	Total/NA	Water	SM 2320B	
MB 280-345123/6	Method Blank	Total/NA	Water	SM 2320B	
LCS 280-345123/4	Lab Control Sample	Total/NA	Water	SM 2320B	
LCSD 280-345123/5	Lab Control Sample Dup	Total/NA	Water	SM 2320B	

Lab Chronicle

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-88651-1

Client Sample ID: AC-SPRING

Lab Sample ID: 280-88651-1

Date Collected: 09/26/16 16:10

Matrix: Water

Date Received: 09/27/16 11:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	345209	10/05/16 23:38	RSN	TAL DEN
Total/NA	Prep	3010A			50 mL	50 mL	344160	09/29/16 08:00	SUR	TAL DEN
Total/NA	Analysis	6010B		1			344465	09/29/16 23:15	CMK	TAL DEN
Total/NA	Prep	3020A			50 mL	50 mL	344051	09/29/16 08:00	SUR	TAL DEN
Total/NA	Analysis	6020A		1			344521	09/29/16 16:19	JM	TAL DEN
Total/NA	Analysis	300.0		5	5 mL	5 mL	343900	09/27/16 22:04	AFB	TAL DEN
Total/NA	Analysis	300.0		5	5 mL	5 mL	343901	09/27/16 22:04	AFB	TAL DEN
Total/NA	Analysis	300.0		100	5 mL	5 mL	343901	09/27/16 22:22	AFB	TAL DEN
Total/NA	Analysis	SM 2320B		1			345123	10/04/16 12:36	CCJ	TAL DEN

Client Sample ID: AC-MW-03

Lab Sample ID: 280-88651-2

Date Collected: 09/26/16 15:25

Matrix: Water

Date Received: 09/27/16 11:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	345049	10/05/16 03:37	RSN	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Certification Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range

TestAmerica Job ID: 280-88651-1

Laboratory: TestAmerica Denver

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Oregon	NELAP	10	4025	01-09-17

The following analytes are included in this report, but are not certified under this certification:

Analysis Method	Prep Method	Matrix	Analyte
SM 2320B		Water	Carbonate Alkalinity as CaCO3

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Chris Krajicek	Lab PM: Kupper, Stephanie K	Carrier Tracking No(s):	COC No: 280-55183-19671.1
Client Contact: Mr. John Dellaport	Phone: 303-589-4847	E-Mail: stephanie.kupper@testamericainc.com		Page:
Company: Quantum Water & Environment				Job #: 132E-15
Address: 1746 Cole Boulevard, Suite 340	Due Date Requested: 10/11/16			
City: Lakewood	TAT Requested (days): Standard 2 week			
State, Zip: CO, 80401				
Phone: 720-524-4294(Tel)	PO #: Purchase Order Requested			
Email: John@quantumwaterco.com	WO #:			
Project Name: Adams County Shooting Range	Project #: 28014702			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - ph 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260	6010+6020	300 Nitrate Nitrite	300 Chloride Sulfate	2320B Alkalinity	Total Number of containers	Special Instructions/Note:
			Preservation Code:										
AC-SPRING	9-26-16	16:10	G	W	N	N	X	X	X	X	XX		
AC-MW-03	9-26-16	15:25	G	W	N	N	X						

280-88651 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 9.27-11:30	Company	Received by: Reed FedEx	Date/Time: 9-27-16 1130	Company FED
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 5.1+0.0 IR#5 Transfered by FW 9/27/16

10/13/2016

Login Sample Receipt Checklist

Client: Quantum Water Consulting

Job Number: 280-88651-1

Login Number: 88651
List Number: 1
Creator: White, Denise E

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
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.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Appendix F8 - Laboratory Analysis Report - Sludge Sampling

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

TestAmerica Job ID: 280-88706-1
Client Project/Site: Adams County Shooting Range - Soils

For:
Quantum Water Consulting
1746 Cole Blvd
Suite 340
Lakewood, Colorado 80401

Attn: Mr. Chris Krajicek

Stephanie Rothmeyer

Authorized for release by:
10/20/2016 12:19:27 PM

Stephanie Rothmeyer, Project Manager I
(303)736-0182
stephanie.rothmeyer@testamericainc.com

Table of Contents

Definitions/Glossary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range - Soils

TestAmerica Job ID: 280-88706-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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: 280-88706-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: Quantum Water Consulting

Project: Adams County Shooting Range - Soils

Report Number: 280-88706-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 9/27/2016 at 11:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.9º C.

Two of three 4 oz soil jar container labels for the following sample did not match the information listed on the Chain-of-Custody (COC): AC-SB-46 (4-8) (280-88706-3). The container labels list AC-SB-46, while the COC lists AC-SB-46 (4-8) (280-88706-3). The sample was logged per the COC.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples AC-SB-45-51 (280-88706-1) and AC-SB-46 (4-8) (280-88706-3) were analyzed for volatile organic compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 09/30/2016 and 10/01/2016.

1,2-Dichlorobenzene and Methylene Chloride were detected in method blank MB 280-344602/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Several analytes failed the recovery criteria low for the MS of sample AC-SB-45-51 (280-88706-1) in batch 280-344606. 1,1-Dichloroethene failed the recovery criteria high. Several analytes failed the recovery criteria low for the MSD of sample AC-SB-45-51 (280-88706-1) in batch 280-344606. Several analytes exceeded the RPD limit. Refer to the QC report for details.

The following compound was outside control limits in the continuing calibration verification (CCV): Chloromethane. This compound is not classified as Calibration Check Compounds (CCCs) in the reference method.

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

SEMIVOLATILE ORGANIC COMPOUNDS - SELECTED ION MODE (SIM)

Samples AC-SB-45-51 (280-88706-1) and AC-SB-47 (4-8) (280-88706-2) were analyzed for Semivolatile organic compounds - Selected Ion Mode (SIM) in accordance with EPA SW-846 Method 8270C SIM. The samples were prepared on 10/03/2016 and analyzed on 10/06/2016.

Terphenyl-d14 failed the surrogate recovery criteria low for AC-SB-45-51 (280-88706-1) and AC-SB-47 (4-8) (280-88706-2). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

Job ID: 280-88706-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

TOTAL METALS (ICP)

Samples AC-SB-45-51 (280-88706-1) and AC-SB-46 (4-8) (280-88706-3) were analyzed for Total Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 10/03/2016 and analyzed on 10/04/2016.

Aluminum and Barium were detected in method blank MB 280-344406/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Chromium failed the recovery criteria low for the MS and MSD of sample AC-SB-45-51 (280-88706-1) in batch 280-344902. Aluminum failed the recovery criteria high. The presence of the '4' qualifier indicates analytes where the concentration in the unspiked sample exceeded four times the spiking amount. Refer to the QC report for details.

Sample AC-SB-45-51 (280-88706-1)[2X] required dilution prior to analysis due to the presence of Mn which interferes with Se. The reporting limits have been adjusted accordingly.

The continuing calibration verification (CCV) associated with batch 280-344902 recovered above the upper control limit for Al. The MB and LCS associated with this CCV were within control limits for the affected analyte; therefore, the data have been reported.

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

TOTAL MERCURY (CVAA)

Samples AC-SB-45-51 (280-88706-1) and AC-SB-46 (4-8) (280-88706-3) were analyzed for total mercury (CVAA) in accordance with EPA SW-846 Method 7471B. The samples were prepared and analyzed on 10/04/2016.

The following sample could not be thoroughly homogenized before sub-sampling was performed due to sample matrix: AC-SB-46 (4-8) (280-88706-3). The sample could not be completely removed from its container due to its consistency.

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

FLASHPOINT

Samples AC-SB-45-51 (280-88706-1) and AC-SB-47 (4-8) (280-88706-2) were analyzed for flashpoint in accordance with EPA SW-846 Method 1020A. The samples were analyzed on 10/05/2016.

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

TOTAL CYANIDE

Samples AC-SB-45-51 (280-88706-1) and AC-SB-47 (4-8) (280-88706-2) were analyzed for total cyanide in accordance with EPA SW-846 Method 9012B. The samples were prepared and analyzed on 10/04/2016.

Cyanide, Total was detected in method blank MB 280-344892/4-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

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

TOTAL SULFIDE

Samples AC-SB-45-51 (280-88706-1) and AC-SB-47 (4-8) (280-88706-2) were analyzed for total sulfide in accordance with EPA SW-846 Method 9034. The samples were prepared and analyzed on 09/30/2016.

Sulfide failed the recovery criteria low for the MS and MSD of sample AC-SB-47 (4-8) (280-88706-2) in batch 280-344598. Sulfide exceeded the RPD limit. Refer to the QC report for details.

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

Job ID: 280-88706-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

PH (CORROSIVITY)

Samples AC-SB-45-51 (280-88706-1) and AC-SB-47 (4-8) (280-88706-2) were analyzed for pH (corrosivity) in accordance with EPA SW-846 Method 9045D. The samples were leached on 10/04/2016 and analyzed on 10/04/2016.

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

PAINT FILTER

Samples AC-SB-45-51 (280-88706-1) and AC-SB-47 (4-8) (280-88706-2) were analyzed for paint filter in accordance with EPA SW-846 Method 9095. The samples were analyzed on 09/29/2016.

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

PERCENT SOLIDS

Samples AC-SB-45-51 (280-88706-1), AC-SB-47 (4-8) (280-88706-2) and AC-SB-46 (4-8) (280-88706-3) were analyzed for percent solids in accordance with ASTM D2216-90. The samples were analyzed on 10/04/2016.

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

Detection Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range - Soils

TestAmerica Job ID: 280-88706-1

Client Sample ID: AC-SB-45-51 — Lab Sample ID: 280-88706-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone (MEK)	17	J	30	2.8	ug/Kg	1	☼	8260B	Total/NA
Chloroform	0.56	J	15	0.44	ug/Kg	1	☼	8260B	Total/NA
trans-1,2-Dichloroethene	1.0	J	3.8	0.59	ug/Kg	1	☼	8260B	Total/NA
Methylene Chloride	3.6	J B	7.6	2.4	ug/Kg	1	☼	8260B	Total/NA
Trichloroethene	3.4	J	7.6	0.35	ug/Kg	1	☼	8260B	Total/NA
Tetrachloroethene	3.3	J	7.6	0.90	ug/Kg	1	☼	8260B	Total/NA
Phenanthrene	6.7	J	7.2	1.6	ug/Kg	1	☼	8270C SIM	Total/NA
Anthracene	1.2	J	7.2	1.0	ug/Kg	1	☼	8270C SIM	Total/NA
Acenaphthene	3.1	J	7.2	0.23	ug/Kg	1	☼	8270C SIM	Total/NA
Acenaphthylene	3.5	J	7.2	0.25	ug/Kg	1	☼	8270C SIM	Total/NA
Fluorene	1.4	J	7.2	0.68	ug/Kg	1	☼	8270C SIM	Total/NA
Pyrene	1.9	J	7.2	1.6	ug/Kg	1	☼	8270C SIM	Total/NA
2-Methylnaphthalene	17		7.2	0.45	ug/Kg	1	☼	8270C SIM	Total/NA
Naphthalene	47		7.2	0.47	ug/Kg	1	☼	8270C SIM	Total/NA
Aluminum	14000	B	14	2.1	mg/Kg	1	☼	6010C	Total/NA
Arsenic	4.8		2.8	0.91	mg/Kg	1	☼	6010C	Total/NA
Barium	190	B	1.4	0.10	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.50	J	0.69	0.057	mg/Kg	1	☼	6010C	Total/NA
Chromium	18	F1	2.1	0.080	mg/Kg	1	☼	6010C	Total/NA
Lead	12		1.2	0.37	mg/Kg	1	☼	6010C	Total/NA
Selenium	3.4	J	4.1	2.4	mg/Kg	2	☼	6010C	Total/NA
Mercury	18	J	27	8.9	ug/Kg	1	☼	7471B	Total/NA
Flashpoint	>211				Degrees F	1		1020A	Total/NA
Free Liquid	yes				mg/L	1		9095A	Total/NA
pH adj. to 25 deg C	8.4	HF	0.1	0.1	SU	1		9045D	Soluble
Temperature	22.1	HF	1.0	1.0	Degrees C	1		9045D	Soluble

Client Sample ID: AC-SB-47 (4-8) — Lab Sample ID: 280-88706-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Phenanthrene	3.5	J	8.6	1.9	ug/Kg	1	☼	8270C SIM	Total/NA
Acenaphthene	0.94	J	8.6	0.28	ug/Kg	1	☼	8270C SIM	Total/NA
Acenaphthylene	1.2	J	8.6	0.29	ug/Kg	1	☼	8270C SIM	Total/NA
2-Methylnaphthalene	4.4	J	8.6	0.53	ug/Kg	1	☼	8270C SIM	Total/NA
Naphthalene	20		8.6	0.56	ug/Kg	1	☼	8270C SIM	Total/NA
Flashpoint	>211				Degrees F	1		1020A	Total/NA
Cyanide, Total	0.49	J B	0.83	0.17	mg/Kg	1	☼	9012B	Total/NA
Free Liquid	no				mg/L	1		9095A	Total/NA
pH adj. to 25 deg C	8.7	HF	0.1	0.1	SU	1		9045D	Soluble
Temperature	22.1	HF	1.0	1.0	Degrees C	1		9045D	Soluble

Client Sample ID: AC-SB-46 (4-8) — Lab Sample ID: 280-88706-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methylene Chloride	2.5	J B	6.5	2.1	ug/Kg	1	☼	8260B	Total/NA
Aluminum	22000	B	11	1.8	mg/Kg	1	☼	6010C	Total/NA
Arsenic	5.3		2.3	0.75	mg/Kg	1	☼	6010C	Total/NA
Barium	270	B	1.1	0.086	mg/Kg	1	☼	6010C	Total/NA
Cadmium	0.23	J	0.56	0.046	mg/Kg	1	☼	6010C	Total/NA
Chromium	16		1.7	0.066	mg/Kg	1	☼	6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range - Soils

TestAmerica Job ID: 280-88706-1

Client Sample ID: AC-SB-46 (4-8) (Continued)

Lab Sample ID: 280-88706-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	12		1.0	0.31	mg/Kg	1	☼	6010C	Total/NA
Mercury	23	J	24	7.8	ug/Kg	1	☼	7471B	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range - Soils

TestAmerica Job ID: 280-88706-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL DEN
8270C SIM	Semivolatile Organic Compounds (GC/MS SIM)	SW846	TAL DEN
6010C	Metals (ICP)	SW846	TAL DEN
7471B	Mercury (CVAA)	SW846	TAL DEN
1020A	Ignitability, Setaflash Closed-Cup Method	SW846	TAL SEA
9012B	Cyanide, Total andor Amenable	SW846	TAL DEN
9034	Sulfide, Acid Soluble and Insoluble (Titrimetric)	SW846	TAL DEN
9045D	pH	SW846	TAL DEN
9095A	Paint Filter	SW846	TAL DEN
Moisture	Percent Moisture	EPA	TAL DEN

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Sample Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range - Soils

TestAmerica Job ID: 280-88706-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-88706-1	AC-SB-45-51	Solid	09/26/16 12:40	09/27/16 11:30
280-88706-2	AC-SB-47 (4-8)	Solid	09/26/16 11:04	09/27/16 11:30
280-88706-3	AC-SB-46 (4-8)	Solid	09/26/16 10:22	09/27/16 11:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: AC-SB-45-51
Date Collected: 09/26/16 12:40
Date Received: 09/27/16 11:30

Lab Sample ID: 280-88706-1
Matrix: Solid
Percent Solids: 67.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		30	8.2	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
2-Butanone (MEK)	**17**	**J**	30	2.8	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
Benzene	ND		7.6	0.71	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
Chlorobenzene	ND	F1	7.6	0.82	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
Carbon disulfide	ND		7.6	0.64	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
Carbon tetrachloride	ND		7.6	0.96	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
Cyclohexane	ND		7.6	0.61	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
1,2-Dibromo-3-Chloropropane	ND	F1	15	0.91	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
Bromomethane	ND		15	0.76	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
Bromoform	ND	F1	7.6	0.35	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
Chloroethane	ND		15	1.4	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
Chloroform	**0.56**	**J**	15	0.44	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
Chlorobromomethane	ND		7.6	0.46	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
Dichlorobromomethane	ND		7.6	0.33	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
Chlorodibromomethane	ND		7.6	0.87	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
Isopropylbenzene	ND		7.6	0.90	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
2-Hexanone	ND	F1	30	7.4	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
Chloromethane	ND		15	1.2	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
Dichlorodifluoromethane	ND		15	0.79	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
trans-1,2-Dichloroethene	**1.0**	**J**	3.8	0.59	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
trans-1,3-Dichloropropene	ND	F1	7.6	1.0	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
Methylene Chloride	**3.6**	**J B**	7.6	2.4	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
Methyl acetate	ND		15	4.2	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
Methyl tert-butyl ether	ND		30	0.52	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
4-Methyl-2-pentanone (MIBK)	ND		30	6.6	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
Methylcyclohexane	ND		7.6	0.64	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
Styrene	ND	F1 F2	7.6	0.96	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
1,1,2,2-Tetrachloroethane	ND		7.6	0.93	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
1,2,3-Trichlorobenzene	ND	F1 F2	7.6	1.1	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
1,2,4-Trichlorobenzene	ND	F1 F2	7.6	1.1	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
Toluene	ND		7.6	1.0	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
1,1,1-Trichloroethane	ND		7.6	0.79	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
1,1,2-Trichloroethane	ND		7.6	1.3	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
Trichloroethene	**3.4**	**J**	7.6	0.35	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
1,1,2-Trichlorotrifluoroethane	ND		30	0.68	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
Vinyl chloride	ND		7.6	2.0	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
m-Xylene & p-Xylene	ND	F1	3.8	1.6	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
o-Xylene	ND	F1	3.8	0.93	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
Tetrachloroethene	**3.3**	**J**	7.6	0.90	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
1,2-Dichlorobenzene	ND	F1 F2	7.6	0.68	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
1,3-Dichlorobenzene	ND	F1 F2	7.6	0.73	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
1,4-Dichlorobenzene	ND	F1 F2	7.6	1.2	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
cis-1,2-Dichloroethene	ND		3.8	0.85	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
cis-1,3-Dichloropropene	ND		7.6	2.0	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
1,1-Dichloroethane	ND		7.6	0.32	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
1,1-Dichloroethene	ND	F1	7.6	0.90	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
1,2-Dichloroethane	ND		7.6	1.1	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
1,2-Dichloropropane	ND		7.6	0.84	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
1,4-Dioxane	ND		760	85	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: AC-SB-45-51
Date Collected: 09/26/16 12:40
Date Received: 09/27/16 11:30

Lab Sample ID: 280-88706-1
Matrix: Solid
Percent Solids: 67.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		7.6	1.0	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
1,2-Dibromoethane	ND		7.6	0.79	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1
Trichlorofluoromethane	ND		15	1.6	ug/Kg	☼	09/30/16 12:00	09/30/16 23:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*58 - 140*	*09/30/16 12:00*	*09/30/16 23:47*	*1*
Toluene-d8 (Surr)	*95*		*80 - 126*	*09/30/16 12:00*	*09/30/16 23:47*	*1*
4-Bromofluorobenzene (Surr)	*102*		*76 - 127*	*09/30/16 12:00*	*09/30/16 23:47*	*1*
Dibromofluoromethane (Surr)	*103*		*75 - 121*	*09/30/16 12:00*	*09/30/16 23:47*	*1*

Client Sample ID: AC-SB-46 (4-8)
Date Collected: 09/26/16 10:22
Date Received: 09/27/16 11:30

Lab Sample ID: 280-88706-3
Matrix: Solid
Percent Solids: 75.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		26	7.0	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
2-Butanone (MEK)	ND		26	2.4	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
Benzene	ND		6.5	0.61	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
Chlorobenzene	ND		6.5	0.70	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
Carbon disulfide	ND		6.5	0.55	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
Carbon tetrachloride	ND		6.5	0.82	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
Cyclohexane	ND		6.5	0.52	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
1,2-Dibromo-3-Chloropropane	ND		13	0.78	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
Bromomethane	ND		13	0.65	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
Bromoform	ND		6.5	0.30	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
Chloroethane	ND		13	1.2	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
Chloroform	ND		13	0.38	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
Chlorobromomethane	ND		6.5	0.39	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
Dichlorobromomethane	ND		6.5	0.29	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
Chlorodibromomethane	ND		6.5	0.74	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
Isopropylbenzene	ND		6.5	0.77	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
2-Hexanone	ND		26	6.3	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
Chloromethane	ND		13	1.0	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
Dichlorodifluoromethane	ND		13	0.67	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
trans-1,2-Dichloroethene	ND		3.2	0.51	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
trans-1,3-Dichloropropene	ND		6.5	0.87	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
Methylene Chloride	**2.5**	**J B**	6.5	2.1	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
Methyl acetate	ND		13	3.6	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
Methyl tert-butyl ether	ND		26	0.44	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
4-Methyl-2-pentanone (MIBK)	ND		26	5.7	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
Methylcyclohexane	ND		6.5	0.55	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
Styrene	ND		6.5	0.82	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
1,1,2,2-Tetrachloroethane	ND		6.5	0.79	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
1,2,3-Trichlorobenzene	ND		6.5	0.97	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
1,2,4-Trichlorobenzene	ND		6.5	0.95	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
Toluene	ND		6.5	0.90	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
1,1,1-Trichloroethane	ND		6.5	0.67	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
1,1,2-Trichloroethane	ND		6.5	1.1	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
Trichloroethene	ND		6.5	0.30	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
1,1,2-Trichlorotrifluoroethane	ND		26	0.58	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
Vinyl chloride	ND		6.5	1.7	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: AC-SB-46 (4-8)
Date Collected: 09/26/16 10:22
Date Received: 09/27/16 11:30

Lab Sample ID: 280-88706-3
Matrix: Solid
Percent Solids: 75.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m-Xylene & p-Xylene	ND		3.2	1.3	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
o-Xylene	ND		3.2	0.79	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
Tetrachloroethene	ND		6.5	0.77	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
1,2-Dichlorobenzene	ND		6.5	0.58	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
1,3-Dichlorobenzene	ND		6.5	0.62	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
1,4-Dichlorobenzene	ND		6.5	1.0	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
cis-1,2-Dichloroethene	ND		3.2	0.73	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
cis-1,3-Dichloropropene	ND		6.5	1.7	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
1,1-Dichloroethane	ND		6.5	0.27	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
1,1-Dichloroethene	ND		6.5	0.77	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
1,2-Dichloroethane	ND		6.5	0.91	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
1,2-Dichloropropane	ND		6.5	0.71	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
1,4-Dioxane	ND		650	73	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
Ethylbenzene	ND		6.5	0.87	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
1,2-Dibromoethane	ND		6.5	0.67	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1
Trichlorofluoromethane	ND		13	1.3	ug/Kg	☼	09/30/16 12:00	10/01/16 00:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*58 - 140*	*09/30/16 12:00*	*10/01/16 00:54*	*1*
Toluene-d8 (Surr)	*105*		*80 - 126*	*09/30/16 12:00*	*10/01/16 00:54*	*1*
4-Bromofluorobenzene (Surr)	*108*		*76 - 127*	*09/30/16 12:00*	*10/01/16 00:54*	*1*
Dibromofluoromethane (Surr)	*112*		*75 - 121*	*09/30/16 12:00*	*10/01/16 00:54*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Client Sample ID: AC-SB-45-51
Date Collected: 09/26/16 12:40
Date Received: 09/27/16 11:30

Lab Sample ID: 280-88706-1
Matrix: Solid
Percent Solids: 67.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[b]fluoranthene	ND		7.2	1.7	ug/Kg	☼	10/03/16 13:11	10/06/16 14:38	1
Benzo[a]pyrene	ND		7.2	1.1	ug/Kg	☼	10/03/16 13:11	10/06/16 14:38	1
Benzo[a]anthracene	ND		7.2	1.3	ug/Kg	☼	10/03/16 13:11	10/06/16 14:38	1
Benzo[k]fluoranthene	ND		7.2	1.4	ug/Kg	☼	10/03/16 13:11	10/06/16 14:38	1
Benzo[g,h,i]perylene	ND		7.2	1.6	ug/Kg	☼	10/03/16 13:11	10/06/16 14:38	1
Phenanthrene	**6.7**	**J**	7.2	1.6	ug/Kg	☼	10/03/16 13:11	10/06/16 14:38	1
Anthracene	**1.2**	**J**	7.2	1.0	ug/Kg	☼	10/03/16 13:11	10/06/16 14:38	1
Dibenz(a,h)anthracene	ND		7.2	1.9	ug/Kg	☼	10/03/16 13:11	10/06/16 14:38	1
Chrysene	ND		7.2	1.4	ug/Kg	☼	10/03/16 13:11	10/06/16 14:38	1
Acenaphthene	**3.1**	**J**	7.2	0.23	ug/Kg	☼	10/03/16 13:11	10/06/16 14:38	1
Acenaphthylene	**3.5**	**J**	7.2	0.25	ug/Kg	☼	10/03/16 13:11	10/06/16 14:38	1
Fluoranthene	ND		7.2	1.4	ug/Kg	☼	10/03/16 13:11	10/06/16 14:38	1
Fluorene	**1.4**	**J**	7.2	0.68	ug/Kg	☼	10/03/16 13:11	10/06/16 14:38	1
Pyrene	**1.9**	**J**	7.2	1.6	ug/Kg	☼	10/03/16 13:11	10/06/16 14:38	1
Indeno[1,2,3-cd]pyrene	ND		7.2	1.6	ug/Kg	☼	10/03/16 13:11	10/06/16 14:38	1
2-Methylnaphthalene	**17**		7.2	0.45	ug/Kg	☼	10/03/16 13:11	10/06/16 14:38	1
Naphthalene	**47**		7.2	0.47	ug/Kg	☼	10/03/16 13:11	10/06/16 14:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*54*		*39 - 120*	*10/03/16 13:11*	*10/06/16 14:38*	*1*
Nitrobenzene-d5	*66*		*42 - 120*	*10/03/16 13:11*	*10/06/16 14:38*	*1*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Client Sample ID: AC-SB-45-51
Date Collected: 09/26/16 12:40
Date Received: 09/27/16 11:30

Lab Sample ID: 280-88706-1
Matrix: Solid
Percent Solids: 67.5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*26*	*X*	*35 - 124*	*10/03/16 13:11*	*10/06/16 14:38*	*1*

Client Sample ID: AC-SB-47 (4-8)
Date Collected: 09/26/16 11:04
Date Received: 09/27/16 11:30

Lab Sample ID: 280-88706-2
Matrix: Solid
Percent Solids: 58.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[b]fluoranthene	ND		8.6	2.1	ug/Kg	☼	10/03/16 13:11	10/06/16 15:04	1
Benzo[a]pyrene	ND		8.6	1.3	ug/Kg	☼	10/03/16 13:11	10/06/16 15:04	1
Benzo[a]anthracene	ND		8.6	1.6	ug/Kg	☼	10/03/16 13:11	10/06/16 15:04	1
Benzo[k]fluoranthene	ND		8.6	1.7	ug/Kg	☼	10/03/16 13:11	10/06/16 15:04	1
Benzo[g,h,i]perylene	ND		8.6	1.9	ug/Kg	☼	10/03/16 13:11	10/06/16 15:04	1
Phenanthrene	**3.5**	**J**	8.6	1.9	ug/Kg	☼	10/03/16 13:11	10/06/16 15:04	1
Anthracene	ND		8.6	1.2	ug/Kg	☼	10/03/16 13:11	10/06/16 15:04	1
Dibenz(a,h)anthracene	ND		8.6	2.2	ug/Kg	☼	10/03/16 13:11	10/06/16 15:04	1
Chrysene	ND		8.6	1.7	ug/Kg	☼	10/03/16 13:11	10/06/16 15:04	1
Acenaphthene	**0.94**	**J**	8.6	0.28	ug/Kg	☼	10/03/16 13:11	10/06/16 15:04	1
Acenaphthylene	**1.2**	**J**	8.6	0.29	ug/Kg	☼	10/03/16 13:11	10/06/16 15:04	1
Fluoranthene	ND		8.6	1.7	ug/Kg	☼	10/03/16 13:11	10/06/16 15:04	1
Fluorene	ND		8.6	0.81	ug/Kg	☼	10/03/16 13:11	10/06/16 15:04	1
Pyrene	ND		8.6	1.9	ug/Kg	☼	10/03/16 13:11	10/06/16 15:04	1
Indeno[1,2,3-cd]pyrene	ND		8.6	1.9	ug/Kg	☼	10/03/16 13:11	10/06/16 15:04	1
2-Methylnaphthalene	**4.4**	**J**	8.6	0.53	ug/Kg	☼	10/03/16 13:11	10/06/16 15:04	1
Naphthalene	**20**		8.6	0.56	ug/Kg	☼	10/03/16 13:11	10/06/16 15:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*42*		*39 - 120*	*10/03/16 13:11*	*10/06/16 15:04*	*1*
Nitrobenzene-d5	*50*		*42 - 120*	*10/03/16 13:11*	*10/06/16 15:04*	*1*
Terphenyl-d14	*24*	*X*	*35 - 124*	*10/03/16 13:11*	*10/06/16 15:04*	*1*

Method: 6010C - Metals (ICP)

Client Sample ID: AC-SB-45-51
Date Collected: 09/26/16 12:40
Date Received: 09/27/16 11:30

Lab Sample ID: 280-88706-1
Matrix: Solid
Percent Solids: 67.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**14000**	**B**	14	2.1	mg/Kg	☼	10/03/16 14:40	10/04/16 00:28	1
Arsenic	**4.8**		2.8	0.91	mg/Kg	☼	10/03/16 14:40	10/04/16 00:28	1
Barium	**190**	**B**	1.4	0.10	mg/Kg	☼	10/03/16 14:40	10/04/16 00:28	1
Cadmium	**0.50**	**J**	0.69	0.057	mg/Kg	☼	10/03/16 14:40	10/04/16 00:28	1
Chromium	**18**	**F1**	2.1	0.080	mg/Kg	☼	10/03/16 14:40	10/04/16 00:28	1
Lead	**12**		1.2	0.37	mg/Kg	☼	10/03/16 14:40	10/04/16 00:28	1
Selenium	**3.4**	**J**	4.1	2.4	mg/Kg	☼	10/03/16 14:40	10/04/16 14:18	2
Silver	ND		1.4	0.22	mg/Kg	☼	10/03/16 14:40	10/04/16 00:28	1

Client Sample ID: AC-SB-46 (4-8)
Date Collected: 09/26/16 10:22
Date Received: 09/27/16 11:30

Lab Sample ID: 280-88706-3
Matrix: Solid
Percent Solids: 75.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**22000**	**B**	11	1.8	mg/Kg	☼	10/03/16 14:40	10/04/16 00:44	1
Arsenic	**5.3**		2.3	0.75	mg/Kg	☼	10/03/16 14:40	10/04/16 00:44	1

Method: 6010C - Metals (ICP) (Continued)

Client Sample ID: AC-SB-46 (4-8)
Date Collected: 09/26/16 10:22
Date Received: 09/27/16 11:30

Lab Sample ID: 280-88706-3
Matrix: Solid
Percent Solids: 75.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	**270**	**B**	1.1	0.086	mg/Kg	☼	10/03/16 14:40	10/04/16 00:44	1
Cadmium	**0.23**	**J**	0.56	0.046	mg/Kg	☼	10/03/16 14:40	10/04/16 00:44	1
Chromium	**16**		1.7	0.066	mg/Kg	☼	10/03/16 14:40	10/04/16 00:44	1
Lead	**12**		1.0	0.31	mg/Kg	☼	10/03/16 14:40	10/04/16 00:44	1
Selenium	ND		1.7	0.97	mg/Kg	☼	10/03/16 14:40	10/04/16 14:33	1
Silver	ND		1.1	0.18	mg/Kg	☼	10/03/16 14:40	10/04/16 00:44	1

Method: 7471B - Mercury (CVAA)

Client Sample ID: AC-SB-45-51
Date Collected: 09/26/16 12:40
Date Received: 09/27/16 11:30

Lab Sample ID: 280-88706-1
Matrix: Solid
Percent Solids: 67.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**18**	**J**	27	8.9	ug/Kg	☼	10/04/16 12:25	10/04/16 19:05	1

Client Sample ID: AC-SB-46 (4-8)
Date Collected: 09/26/16 10:22
Date Received: 09/27/16 11:30

Lab Sample ID: 280-88706-3
Matrix: Solid
Percent Solids: 75.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**23**	**J**	24	7.8	ug/Kg	☼	10/04/16 12:25	10/04/16 19:07	1

General Chemistry

Client Sample ID: AC-SB-45-51
Date Collected: 09/26/16 12:40
Date Received: 09/27/16 11:30

Lab Sample ID: 280-88706-1
Matrix: Solid
Percent Solids: 67.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Flashpoint	**>211**				Degrees F			10/05/16 09:45	1
Cyanide, Total	ND		0.68	0.14	mg/Kg	☼	10/04/16 06:10	10/04/16 12:45	1
Sulfide	ND		7.4	3.6	mg/Kg	☼	09/30/16 16:46	09/30/16 19:34	1
Free Liquid	**yes**				mg/L			09/29/16 15:49	1
Percent Moisture	**32.5**		0.1	0.1	%			10/04/16 05:17	1
Percent Solids	**67.5**		0.1	0.1	%			10/04/16 05:17	1

Client Sample ID: AC-SB-47 (4-8)
Date Collected: 09/26/16 11:04
Date Received: 09/27/16 11:30

Lab Sample ID: 280-88706-2
Matrix: Solid
Percent Solids: 58.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Flashpoint	**>211**				Degrees F			10/05/16 09:45	1
Cyanide, Total	**0.49**	**J B**	0.83	0.17	mg/Kg	☼	10/04/16 06:10	10/04/16 13:20	1
Sulfide	ND	F1 F2	8.6	4.1	mg/Kg	☼	09/30/16 16:46	09/30/16 19:34	1
Free Liquid	**no**				mg/L			09/29/16 15:49	1
Percent Moisture	**41.9**		0.1	0.1	%			10/04/16 05:17	1
Percent Solids	**58.1**		0.1	0.1	%			10/04/16 05:17	1

Client Sample ID: AC-SB-46 (4-8)
Date Collected: 09/26/16 10:22
Date Received: 09/27/16 11:30

Lab Sample ID: 280-88706-3
Matrix: Solid
Percent Solids: 75.8

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**24.2**		0.1	0.1	%			10/04/16 05:17	1
Percent Solids	**75.8**		0.1	0.1	%			10/04/16 05:17	1

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range - Soils

TestAmerica Job ID: 280-88706-1

General Chemistry - Soluble

Client Sample ID: AC-SB-45-51
Date Collected: 09/26/16 12:40
Date Received: 09/27/16 11:30

Lab Sample ID: 280-88706-1
Matrix: Solid
Percent Solids: 67.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	8.4	HF	0.1	0.1	SU			10/04/16 14:56	1
Temperature	22.1	HF	1.0	1.0	Degrees C			10/04/16 14:56	1

Client Sample ID: AC-SB-47 (4-8)
Date Collected: 09/26/16 11:04
Date Received: 09/27/16 11:30

Lab Sample ID: 280-88706-2
Matrix: Solid
Percent Solids: 58.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH adj. to 25 deg C	8.7	HF	0.1	0.1	SU			10/04/16 14:56	1
Temperature	22.1	HF	1.0	1.0	Degrees C			10/04/16 14:56	1

Surrogate Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range - Soils

TestAmerica Job ID: 280-88706-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		12DCE	TOL	BFB	DBFM
Lab Sample ID	Client Sample ID	(58-140)	(80-126)	(76-127)	(75-121)
280-88706-1	AC-SB-45-51	97	95	102	103
280-88706-1 MS	AC-SB-45-51	96	100	93	109
280-88706-1 MSD	AC-SB-45-51	103	97	95	110
280-88706-3	AC-SB-46 (4-8)	104	105	108	112
LCS 280-344602/2-A	Lab Control Sample	101	93	89	109
MB 280-344602/1-A	Method Blank	100	95	97	104

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		FBP	NBZ	TPH
Lab Sample ID	Client Sample ID	(39-120)	(42-120)	(35-124)
280-88706-1	AC-SB-45-51	54	66	26 X
280-88706-2	AC-SB-47 (4-8)	42	50	24 X
LCS 280-344767/2-A	Lab Control Sample	82	75	86
MB 280-344767/1-A	Method Blank	81	72	87

Surrogate Legend

FBP = 2-Fluorobiphenyl
NBZ = Nitrobenzene-d5
TPH = Terphenyl-d14

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 280-344602/1-A
Matrix: Solid
Analysis Batch: 344606

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 344602

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		20	5.4	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
2-Butanone (MEK)	ND		20	1.8	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
Benzene	ND		5.0	0.47	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
Chlorobenzene	ND		5.0	0.54	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
Carbon disulfide	ND		5.0	0.42	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
Carbon tetrachloride	ND		5.0	0.63	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
Cyclohexane	ND		5.0	0.40	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
1,2-Dibromo-3-Chloropropane	ND		10	0.60	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
Bromomethane	ND		10	0.50	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
Bromoform	ND		5.0	0.23	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
Chloroethane	ND		10	0.89	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
Chloroform	ND		10	0.29	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
Chlorobromomethane	ND		5.0	0.30	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
Dichlorobromomethane	ND		5.0	0.22	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
Chlorodibromomethane	ND		5.0	0.57	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
Isopropylbenzene	ND		5.0	0.59	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
2-Hexanone	ND		20	4.9	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
Chloromethane	ND		10	0.77	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
Dichlorodifluoromethane	ND		10	0.52	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
trans-1,2-Dichloroethene	ND		2.5	0.39	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
trans-1,3-Dichloropropene	ND		5.0	0.67	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
Methylene Chloride	1.96	J	5.0	1.6	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
Methyl acetate	ND		10	2.8	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
Methyl tert-butyl ether	ND		20	0.34	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
4-Methyl-2-pentanone (MIBK)	ND		20	4.4	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
Methylcyclohexane	ND		5.0	0.42	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
Styrene	ND		5.0	0.63	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
1,1,2,2-Tetrachloroethane	ND		5.0	0.61	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
1,2,3-Trichlorobenzene	ND		5.0	0.75	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
1,2,4-Trichlorobenzene	ND		5.0	0.73	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
Toluene	ND		5.0	0.69	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
1,1,1-Trichloroethane	ND		5.0	0.52	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
1,1,2-Trichloroethane	ND		5.0	0.88	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
Trichloroethene	ND		5.0	0.23	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
1,1,2-Trichlorotrifluoroethane	ND		20	0.45	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
Vinyl chloride	ND		5.0	1.3	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
m-Xylene & p-Xylene	ND		2.5	1.0	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
o-Xylene	ND		2.5	0.61	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
Tetrachloroethene	ND		5.0	0.59	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
1,2-Dichlorobenzene	2.20	J	5.0	0.45	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
1,3-Dichlorobenzene	ND		5.0	0.48	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
1,4-Dichlorobenzene	ND		5.0	0.78	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
cis-1,2-Dichloroethene	ND		2.5	0.56	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
cis-1,3-Dichloropropene	ND		5.0	1.3	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
1,1-Dichloroethane	ND		5.0	0.21	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
1,1-Dichloroethene	ND		5.0	0.59	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
1,2-Dichloroethane	ND		5.0	0.70	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
1,2-Dichloropropane	ND		5.0	0.55	ug/Kg		09/30/16 12:00	09/30/16 18:29	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 280-344602/1-A
Matrix: Solid
Analysis Batch: 344606

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 344602

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		500	56	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
Ethylbenzene	ND		5.0	0.67	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
1,2-Dibromoethane	ND		5.0	0.52	ug/Kg		09/30/16 12:00	09/30/16 18:29	1
Trichlorofluoromethane	ND		10	1.0	ug/Kg		09/30/16 12:00	09/30/16 18:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*58 - 140*	*09/30/16 12:00*	*09/30/16 18:29*	*1*
Toluene-d8 (Surr)	*95*		*80 - 126*	*09/30/16 12:00*	*09/30/16 18:29*	*1*
4-Bromofluorobenzene (Surr)	*97*		*76 - 127*	*09/30/16 12:00*	*09/30/16 18:29*	*1*
Dibromofluoromethane (Surr)	*104*		*75 - 121*	*09/30/16 12:00*	*09/30/16 18:29*	*1*

Lab Sample ID: LCS 280-344602/2-A
Matrix: Solid
Analysis Batch: 344606

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 344602

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	200	207		ug/Kg		103	65 - 150
2-Butanone (MEK)	200	204		ug/Kg		102	45 - 177
Benzene	50.0	49.1		ug/Kg		98	75 - 135
Chlorobenzene	50.0	45.6		ug/Kg		91	78 - 135
Carbon disulfide	50.0	49.5		ug/Kg		99	45 - 150
Carbon tetrachloride	50.0	54.3		ug/Kg		109	69 - 138
1,2-Dibromo-3-Chloropropane	50.0	47.4		ug/Kg		95	66 - 150
Bromomethane	50.0	34.8		ug/Kg		70	52 - 135
Bromoform	50.0	47.5		ug/Kg		95	77 - 135
Chloroethane	50.0	32.8		ug/Kg		66	51 - 145
Chloroform	50.0	52.6		ug/Kg		105	73 - 123
Chlorobromomethane	50.0	46.1		ug/Kg		92	74 - 135
Dichlorobromomethane	50.0	48.5		ug/Kg		97	73 - 135
Chlorodibromomethane	50.0	45.8		ug/Kg		92	77 - 135
Isopropylbenzene	50.0	45.1		ug/Kg		90	74 - 137
2-Hexanone	200	171		ug/Kg		86	67 - 150
Chloromethane	50.0	29.7		ug/Kg		59	41 - 138
Dichlorodifluoromethane	50.0	43.4		ug/Kg		87	32 - 152
trans-1,2-Dichloroethene	50.0	48.3		ug/Kg		97	77 - 135
trans-1,3-Dichloropropene	50.0	44.6		ug/Kg		89	71 - 135
Methylene Chloride	50.0	49.0		ug/Kg		98	76 - 136
Methyl acetate	250	226		ug/Kg		90	50 - 150
Methyl tert-butyl ether	50.0	46.8		ug/Kg		94	71 - 141
4-Methyl-2-pentanone (MIBK)	200	173		ug/Kg		86	69 - 150
Methylcyclohexane	50.0	47.2		ug/Kg		94	50 - 150
Styrene	50.0	43.4		ug/Kg		87	76 - 135
1,1,2,2-Tetrachloroethane	50.0	47.8		ug/Kg		96	65 - 135
1,2,3-Trichlorobenzene	50.0	43.2		ug/Kg		86	62 - 135
1,2,4-Trichlorobenzene	50.0	43.8		ug/Kg		88	65 - 135
Toluene	50.0	51.3		ug/Kg		103	77 - 122
1,1,1-Trichloroethane	50.0	52.9		ug/Kg		106	70 - 135
1,1,2-Trichloroethane	50.0	45.0		ug/Kg		90	78 - 135

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 280-344602/2-A
Matrix: Solid
Analysis Batch: 344606

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 344602

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichloroethene	50.0	47.7		ug/Kg		95	77 - 135
1,1,2-Trichlorotrifluoroethane	50.0	49.7		ug/Kg		99	50 - 150
Vinyl chloride	50.0	34.2		ug/Kg		68	43 - 145
m-Xylene & p-Xylene	50.0	44.0		ug/Kg		88	77 - 135
o-Xylene	50.0	48.4		ug/Kg		97	75 - 135
Tetrachloroethene	50.0	45.0		ug/Kg		90	76 - 135
1,2-Dichlorobenzene	50.0	45.3		ug/Kg		91	73 - 135
1,3-Dichlorobenzene	50.0	49.1		ug/Kg		98	69 - 135
1,4-Dichlorobenzene	50.0	49.8		ug/Kg		100	73 - 135
cis-1,2-Dichloroethene	50.0	51.6		ug/Kg		103	76 - 135
cis-1,3-Dichloropropene	50.0	48.3		ug/Kg		97	71 - 135
1,1-Dichloroethane	50.0	48.9		ug/Kg		98	70 - 135
1,1-Dichloroethene	50.0	54.4		ug/Kg		109	79 - 135
1,2-Dichloroethane	50.0	53.1		ug/Kg		106	69 - 135
1,2-Dichloropropane	50.0	48.1		ug/Kg		96	72 - 121
1,4-Dioxane	1000	1080		ug/Kg		108	52 - 135
Ethylbenzene	50.0	49.4		ug/Kg		99	73 - 125
1,2-Dibromoethane	50.0	47.1		ug/Kg		94	76 - 135
Trichlorofluoromethane	50.0	45.0		ug/Kg		90	48 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*101*		*58 - 140*
Toluene-d8 (Surr)	*93*		*80 - 126*
4-Bromofluorobenzene (Surr)	*89*		*76 - 127*
Dibromofluoromethane (Surr)	*109*		*75 - 121*

Lab Sample ID: 280-88706-1 MS
Matrix: Solid
Analysis Batch: 344606

Client Sample ID: AC-SB-45-51
Prep Type: Total/NA
Prep Batch: 344602

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	ND		329	241		ug/Kg	☼	73	65 - 150
2-Butanone (MEK)	17	J	329	499		ug/Kg	☼	147	45 - 177
Benzene	ND		82.2	85.9		ug/Kg	☼	104	75 - 135
Chlorobenzene	ND	F1	82.2	57.9	F1	ug/Kg	☼	70	78 - 135
Carbon disulfide	ND		82.2	71.3		ug/Kg	☼	87	45 - 150
Carbon tetrachloride	ND		82.2	99.9		ug/Kg	☼	121	69 - 138
1,2-Dibromo-3-Chloropropane	ND	F1	82.2	61.8		ug/Kg	☼	75	66 - 150
Bromomethane	ND		82.2	53.9		ug/Kg	☼	66	52 - 135
Bromoform	ND	F1	82.2	70.1		ug/Kg	☼	85	77 - 135
Chloroethane	ND		82.2	55.5		ug/Kg	☼	67	51 - 145
Chloroform	0.56	J	82.2	101		ug/Kg	☼	122	73 - 123
Chlorobromomethane	ND		82.2	89.4		ug/Kg	☼	109	74 - 135
Dichlorobromomethane	ND		82.2	84.6		ug/Kg	☼	103	73 - 135
Chlorodibromomethane	ND		82.2	79.4		ug/Kg	☼	97	77 - 135
Isopropylbenzene	ND		82.2	77.8		ug/Kg	☼	95	74 - 137
2-Hexanone	ND	F1	329	214	F1	ug/Kg	☼	65	67 - 150
Chloromethane	ND		82.2	52.7		ug/Kg	☼	64	41 - 138

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 280-88706-1 MS
Matrix: Solid
Analysis Batch: 344606

Client Sample ID: AC-SB-45-51
Prep Type: Total/NA
Prep Batch: 344602

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dichlorodifluoromethane	ND		82.2	64.5		ug/Kg	☼	78	32 - 152
trans-1,2-Dichloroethene	1.0	J	82.2	87.3		ug/Kg	☼	105	77 - 135
trans-1,3-Dichloropropene	ND	F1	82.2	65.1		ug/Kg	☼	79	71 - 135
Methylene Chloride	3.6	J B	82.2	94.9		ug/Kg	☼	111	76 - 136
Methyl acetate	ND		411	464		ug/Kg	☼	113	50 - 150
Methyl tert-butyl ether	ND		82.2	89.6		ug/Kg	☼	109	71 - 141
4-Methyl-2-pentanone (MIBK)	ND		329	236		ug/Kg	☼	72	69 - 150
Methylcyclohexane	ND		82.2	89.5		ug/Kg	☼	109	50 - 150
Styrene	ND	F1 F2	82.2	48.2	F1	ug/Kg	☼	59	76 - 135
1,1,2,2-Tetrachloroethane	ND		82.2	82.0		ug/Kg	☼	100	65 - 135
1,2,3-Trichlorobenzene	ND	F1 F2	82.2	26.8	F1	ug/Kg	☼	33	62 - 135
1,2,4-Trichlorobenzene	ND	F1 F2	82.2	27.9	F1	ug/Kg	☼	34	65 - 135
Toluene	ND		82.2	76.0		ug/Kg	☼	92	77 - 122
1,1,1-Trichloroethane	ND		82.2	99.9		ug/Kg	☼	122	70 - 135
1,1,2-Trichloroethane	ND		82.2	80.9		ug/Kg	☼	98	78 - 135
Trichloroethene	3.4	J	82.2	85.3		ug/Kg	☼	100	77 - 135
1,1,2-Trichlorotrifluoroethane	ND		82.2	109		ug/Kg	☼	133	50 - 150
Vinyl chloride	ND		82.2	57.8		ug/Kg	☼	70	43 - 145
m-Xylene & p-Xylene	ND	F1	82.2	61.4	F1	ug/Kg	☼	75	77 - 135
o-Xylene	ND	F1	82.2	70.6		ug/Kg	☼	86	75 - 135
Tetrachloroethene	3.3	J	82.2	81.6		ug/Kg	☼	95	76 - 135
1,2-Dichlorobenzene	ND	F1 F2	82.2	45.7	F1	ug/Kg	☼	56	73 - 135
1,3-Dichlorobenzene	ND	F1 F2	82.2	49.3	F1	ug/Kg	☼	60	69 - 135
1,4-Dichlorobenzene	ND	F1 F2	82.2	42.4	F1	ug/Kg	☼	52	73 - 135
cis-1,2-Dichloroethene	ND		82.2	93.6		ug/Kg	☼	114	76 - 135
cis-1,3-Dichloropropene	ND		82.2	78.5		ug/Kg	☼	95	71 - 135
1,1-Dichloroethane	ND		82.2	106		ug/Kg	☼	129	70 - 135
1,1-Dichloroethene	ND	F1	82.2	116	F1	ug/Kg	☼	141	79 - 135
1,2-Dichloroethane	ND		82.2	95.8		ug/Kg	☼	116	69 - 135
1,2-Dichloropropane	ND		82.2	91.4		ug/Kg	☼	111	72 - 121
1,4-Dioxane	ND		1640	1850		ug/Kg	☼	112	52 - 135
Ethylbenzene	ND		82.2	75.0		ug/Kg	☼	91	73 - 125
1,2-Dibromoethane	ND		82.2	74.3		ug/Kg	☼	90	76 - 135
Trichlorofluoromethane	ND		82.2	63.6		ug/Kg	☼	77	48 - 150

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*58 - 140*
Toluene-d8 (Surr)	*100*		*80 - 126*
4-Bromofluorobenzene (Surr)	*93*		*76 - 127*
Dibromofluoromethane (Surr)	*109*		*75 - 121*

Lab Sample ID: 280-88706-1 MSD
Matrix: Solid
Analysis Batch: 344606

Client Sample ID: AC-SB-45-51
Prep Type: Total/NA
Prep Batch: 344602

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	ND		338	273		ug/Kg	☼	81	65 - 150	13	28
2-Butanone (MEK)	17	J	338	563		ug/Kg	☼	162	45 - 177	12	32

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 280-88706-1 MSD
Matrix: Solid
Analysis Batch: 344606

Client Sample ID: AC-SB-45-51
Prep Type: Total/NA
Prep Batch: 344602

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	ND		84.5	77.8		ug/Kg	☼	92	75 - 135	10	20
Chlorobenzene	ND	F1	84.5	48.0	F1	ug/Kg	☼	57	78 - 135	19	20
Carbon disulfide	ND		84.5	67.1		ug/Kg	☼	79	45 - 150	6	24
Carbon tetrachloride	ND		84.5	95.9		ug/Kg	☼	114	69 - 138	4	20
1,2-Dibromo-3-Chloropropane	ND	F1	84.5	52.6	F1	ug/Kg	☼	62	66 - 150	16	28
Bromomethane	ND		84.5	58.7		ug/Kg	☼	70	52 - 135	9	22
Bromoform	ND	F1	84.5	57.9	F1	ug/Kg	☼	69	77 - 135	19	20
Chloroethane	ND		84.5	61.9		ug/Kg	☼	73	51 - 145	11	22
Chloroform	0.56	J	84.5	93.3		ug/Kg	☼	110	73 - 123	8	20
Chlorobromomethane	ND		84.5	80.2		ug/Kg	☼	95	74 - 135	11	21
Dichlorobromomethane	ND		84.5	74.9		ug/Kg	☼	89	73 - 135	12	20
Chlorodibromomethane	ND		84.5	67.3		ug/Kg	☼	80	77 - 135	16	20
Isopropylbenzene	ND		84.5	72.3		ug/Kg	☼	86	74 - 137	7	20
2-Hexanone	ND	F1	338	232		ug/Kg	☼	69	67 - 150	8	29
Chloromethane	ND		84.5	61.7		ug/Kg	☼	73	41 - 138	16	25
Dichlorodifluoromethane	ND		84.5	71.3		ug/Kg	☼	84	32 - 152	10	28
trans-1,2-Dichloroethene	1.0	J	84.5	79.1		ug/Kg	☼	92	77 - 135	10	20
trans-1,3-Dichloropropene	ND	F1	84.5	54.4	F1	ug/Kg	☼	64	71 - 135	18	20
Methylene Chloride	3.6	J B	84.5	89.0		ug/Kg	☼	101	76 - 136	7	21
Methyl acetate	ND		422	431		ug/Kg	☼	102	50 - 150	7	30
Methyl tert-butyl ether	ND		84.5	82.1		ug/Kg	☼	97	71 - 141	9	20
4-Methyl-2-pentanone (MIBK)	ND		338	268		ug/Kg	☼	79	69 - 150	13	25
Methylcyclohexane	ND		84.5	86.8		ug/Kg	☼	103	50 - 150	3	30
Styrene	ND	F1 F2	84.5	36.1	F1 F2	ug/Kg	☼	43	76 - 135	29	20
1,1,2,2-Tetrachloroethane	ND		84.5	73.8		ug/Kg	☼	87	65 - 135	10	21
1,2,3-Trichlorobenzene	ND	F1 F2	84.5	17.4	F1 F2	ug/Kg	☼	21	62 - 135	43	31
1,2,4-Trichlorobenzene	ND	F1 F2	84.5	17.7	F1 F2	ug/Kg	☼	21	65 - 135	44	26
Toluene	ND		84.5	67.8		ug/Kg	☼	80	77 - 122	11	20
1,1,1-Trichloroethane	ND		84.5	96.0		ug/Kg	☼	114	70 - 135	4	20
1,1,2-Trichloroethane	ND		84.5	70.5		ug/Kg	☼	83	78 - 135	14	20
Trichloroethene	3.4	J	84.5	77.1		ug/Kg	☼	87	77 - 135	10	20
1,1,2-Trichlorotrifluoroethane	ND		84.5	106		ug/Kg	☼	125	50 - 150	3	20
Vinyl chloride	ND		84.5	66.1		ug/Kg	☼	78	43 - 145	13	24
m-Xylene & p-Xylene	ND	F1	84.5	53.6	F1	ug/Kg	☼	63	77 - 135	13	20
o-Xylene	ND	F1	84.5	59.2	F1	ug/Kg	☼	70	75 - 135	18	20
Tetrachloroethene	3.3	J	84.5	73.7		ug/Kg	☼	83	76 - 135	10	20
1,2-Dichlorobenzene	ND	F1 F2	84.5	32.7	F1 F2	ug/Kg	☼	39	73 - 135	33	20
1,3-Dichlorobenzene	ND	F1 F2	84.5	36.1	F1 F2	ug/Kg	☼	43	69 - 135	31	20
1,4-Dichlorobenzene	ND	F1 F2	84.5	30.0	F1 F2	ug/Kg	☼	35	73 - 135	34	22
cis-1,2-Dichloroethene	ND		84.5	86.2		ug/Kg	☼	102	76 - 135	8	20
cis-1,3-Dichloropropene	ND		84.5	68.7		ug/Kg	☼	81	71 - 135	13	20
1,1-Dichloroethane	ND		84.5	97.1		ug/Kg	☼	115	70 - 135	9	20
1,1-Dichloroethene	ND	F1	84.5	113		ug/Kg	☼	133	79 - 135	3	20
1,2-Dichloroethane	ND		84.5	85.3		ug/Kg	☼	101	69 - 135	12	20
1,2-Dichloropropane	ND		84.5	83.4		ug/Kg	☼	99	72 - 121	9	20
1,4-Dioxane	ND		1690	2030		ug/Kg	☼	120	52 - 135	9	30
Ethylbenzene	ND		84.5	67.7		ug/Kg	☼	80	73 - 125	10	20
1,2-Dibromoethane	ND		84.5	63.8		ug/Kg	☼	76	76 - 135	15	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 280-88706-1 MSD
Matrix: Solid
Analysis Batch: 344606

Client Sample ID: AC-SB-45-51
Prep Type: Total/NA
Prep Batch: 344602

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Trichlorofluoromethane	ND		84.5	69.3		ug/Kg	☼	82	48 - 150	9	33

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*58 - 140*
Toluene-d8 (Surr)	*97*		*80 - 126*
4-Bromofluorobenzene (Surr)	*95*		*76 - 127*
Dibromofluoromethane (Surr)	*110*		*75 - 121*

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 280-344767/1-A
Matrix: Solid
Analysis Batch: 345306

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 344767

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[b]fluoranthene	ND		5.0	1.2	ug/Kg		10/03/16 13:11	10/06/16 10:45	1
Benzo[a]pyrene	ND		5.0	0.74	ug/Kg		10/03/16 13:11	10/06/16 10:45	1
Benzo[a]anthracene	ND		5.0	0.90	ug/Kg		10/03/16 13:11	10/06/16 10:45	1
Benzo[k]fluoranthene	ND		5.0	1.0	ug/Kg		10/03/16 13:11	10/06/16 10:45	1
Benzo[g,h,i]perylene	ND		5.0	1.1	ug/Kg		10/03/16 13:11	10/06/16 10:45	1
Phenanthrene	ND		5.0	1.1	ug/Kg		10/03/16 13:11	10/06/16 10:45	1
Anthracene	ND		5.0	0.72	ug/Kg		10/03/16 13:11	10/06/16 10:45	1
Dibenz(a,h)anthracene	ND		5.0	1.3	ug/Kg		10/03/16 13:11	10/06/16 10:45	1
Chrysene	ND		5.0	1.0	ug/Kg		10/03/16 13:11	10/06/16 10:45	1
Acenaphthene	ND		5.0	0.16	ug/Kg		10/03/16 13:11	10/06/16 10:45	1
Acenaphthylene	ND		5.0	0.17	ug/Kg		10/03/16 13:11	10/06/16 10:45	1
Fluoranthene	ND		5.0	1.0	ug/Kg		10/03/16 13:11	10/06/16 10:45	1
Fluorene	ND		5.0	0.47	ug/Kg		10/03/16 13:11	10/06/16 10:45	1
Pyrene	ND		5.0	1.1	ug/Kg		10/03/16 13:11	10/06/16 10:45	1
Indeno[1,2,3-cd]pyrene	ND		5.0	1.1	ug/Kg		10/03/16 13:11	10/06/16 10:45	1
2-Methylnaphthalene	ND		5.0	0.31	ug/Kg		10/03/16 13:11	10/06/16 10:45	1
Naphthalene	ND		5.0	0.33	ug/Kg		10/03/16 13:11	10/06/16 10:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*81*		*39 - 120*	*10/03/16 13:11*	*10/06/16 10:45*	*1*
Nitrobenzene-d5	*72*		*42 - 120*	*10/03/16 13:11*	*10/06/16 10:45*	*1*
Terphenyl-d14	*87*		*35 - 124*	*10/03/16 13:11*	*10/06/16 10:45*	*1*

Lab Sample ID: LCS 280-344767/2-A
Matrix: Solid
Analysis Batch: 345306

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 344767

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[b]fluoranthene	30.0	30.7		ug/Kg		102	37 - 120
Benzo[a]pyrene	30.0	31.6		ug/Kg		105	20 - 120
Benzo[a]anthracene	30.0	28.5		ug/Kg		95	36 - 120
Benzo[k]fluoranthene	30.0	29.9		ug/Kg		100	46 - 120

Method: 8270C SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: LCS 280-344767/2-A
Matrix: Solid
Analysis Batch: 345306

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 344767

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[g,h,i]perylene	30.0	25.9		ug/Kg		86	20 - 123
Phenanthrene	30.0	26.8		ug/Kg		89	44 - 120
Anthracene	30.0	28.1		ug/Kg		94	43 - 120
Dibenz(a,h)anthracene	30.0	29.8		ug/Kg		99	20 - 120
Chrysene	30.0	29.1		ug/Kg		97	34 - 120
Acenaphthene	30.0	25.0		ug/Kg		83	35 - 120
Acenaphthylene	30.0	23.4		ug/Kg		78	41 - 120
Fluoranthene	30.0	27.6		ug/Kg		92	45 - 120
Fluorene	30.0	25.9		ug/Kg		86	44 - 120
Pyrene	30.0	27.5		ug/Kg		92	43 - 120
Indeno[1,2,3-cd]pyrene	30.0	28.6		ug/Kg		95	20 - 127
Naphthalene	30.0	25.0		ug/Kg		83	44 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*82*		*39 - 120*
Nitrobenzene-d5	*75*		*42 - 120*
Terphenyl-d14	*86*		*35 - 124*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 280-344406/1-A
Matrix: Solid
Analysis Batch: 344902

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 344406

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	1.96	J ^	10	1.6	mg/Kg		10/03/16 14:40	10/04/16 00:23	1
Arsenic	ND		2.0	0.66	mg/Kg		10/03/16 14:40	10/04/16 00:23	1
Barium	0.169	J	1.0	0.076	mg/Kg		10/03/16 14:40	10/04/16 00:23	1
Cadmium	ND		0.50	0.041	mg/Kg		10/03/16 14:40	10/04/16 00:23	1
Chromium	ND		1.5	0.058	mg/Kg		10/03/16 14:40	10/04/16 00:23	1
Lead	ND		0.90	0.27	mg/Kg		10/03/16 14:40	10/04/16 00:23	1
Selenium	ND		1.5	0.86	mg/Kg		10/03/16 14:40	10/04/16 00:23	1
Silver	ND		1.0	0.16	mg/Kg		10/03/16 14:40	10/04/16 00:23	1

Lab Sample ID: LCS 280-344406/2-A
Matrix: Solid
Analysis Batch: 344902

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 344406

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	200	205	^	mg/Kg		102	82 - 116
Arsenic	100	99.2		mg/Kg		99	85 - 110
Barium	200	193		mg/Kg		97	87 - 112
Cadmium	10.0	9.80		mg/Kg		98	87 - 110
Chromium	20.0	19.9		mg/Kg		100	84 - 114
Lead	50.0	49.7		mg/Kg		99	86 - 110
Selenium	200	197		mg/Kg		98	83 - 110
Silver	5.00	5.36		mg/Kg		107	87 - 114

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 280-88706-1 MS
Matrix: Solid
Analysis Batch: 344902

Client Sample ID: AC-SB-45-51
Prep Type: Total/NA
Prep Batch: 344406

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	14000	B	208	17600	4	mg/Kg	☼	1890	50 - 200
Arsenic	4.8		104	113		mg/Kg	☼	104	76 - 111
Barium	190	B	208	416		mg/Kg	☼	107	52 - 159
Cadmium	0.50	J	10.4	11.2		mg/Kg	☼	102	40 - 130
Chromium	18	F1	20.8	27.7	F1	mg/Kg	☼	48	70 - 200
Lead	12		52.0	51.4		mg/Kg	☼	76	70 - 200
Silver	ND		5.20	6.57		mg/Kg	☼	126	75 - 141

Lab Sample ID: 280-88706-1 MS
Matrix: Solid
Analysis Batch: 345120

Client Sample ID: AC-SB-45-51
Prep Type: Total/NA
Prep Batch: 344406

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Selenium	3.4	J	208	197		mg/Kg	☼	93	76 - 104

Lab Sample ID: 280-88706-1 MSD
Matrix: Solid
Analysis Batch: 344902

Client Sample ID: AC-SB-45-51
Prep Type: Total/NA
Prep Batch: 344406

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	14000	B	217	17100	4	mg/Kg	☼	1588	50 - 200	3	20
Arsenic	4.8		108	117		mg/Kg	☼	103	76 - 111	3	20
Barium	190	B	217	418		mg/Kg	☼	104	52 - 159	1	20
Cadmium	0.50	J	10.8	11.4		mg/Kg	☼	101	40 - 130	2	20
Chromium	18	F1	21.7	30.2	F1	mg/Kg	☼	58	70 - 200	9	20
Lead	12		54.2	53.7		mg/Kg	☼	78	70 - 200	4	20
Silver	ND		5.42	6.75		mg/Kg	☼	125	75 - 141	3	20

Lab Sample ID: 280-88706-1 MSD
Matrix: Solid
Analysis Batch: 345120

Client Sample ID: AC-SB-45-51
Prep Type: Total/NA
Prep Batch: 344406

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Selenium	3.4	J	217	205		mg/Kg	☼	93	76 - 104	4	20

Method: 7471B - Mercury (CVAA)

Lab Sample ID: MB 280-344944/1-A
Matrix: Solid
Analysis Batch: 345116

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 344944

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		17	5.5	ug/Kg		10/04/16 12:25	10/04/16 18:17	1

Method: 7471B - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 280-344944/2-A
Matrix: Solid
Analysis Batch: 345116

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 344944

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	417	434		ug/Kg		104	87 - 111

Method: 9012B - Cyanide, Total andor Amenable

Lab Sample ID: MB 280-344892/4-A
Matrix: Solid
Analysis Batch: 344989

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 344892

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.157	J	0.50	0.10	mg/Kg		10/04/16 06:10	10/04/16 12:25	1

Lab Sample ID: HLCS 280-344892/1-A
Matrix: Solid
Analysis Batch: 344989

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 344892

Analyte	Spike Added	HLCS Result	HLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	20.0	19.7		mg/Kg		98	90 - 110

Lab Sample ID: LCS 280-344892/3-A
Matrix: Solid
Analysis Batch: 344989

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 344892

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	5.00	5.20		mg/Kg		104	90 - 110

Lab Sample ID: LLCS 280-344892/2-A
Matrix: Solid
Analysis Batch: 344989

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 344892

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	5.00	4.99		mg/Kg		100	51 - 150

Method: 9034 - Sulfide, Acid Soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 280-344589/2-A
Matrix: Solid
Analysis Batch: 344598

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 344589

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	ND		5.0	2.4	mg/Kg		09/30/16 16:46	09/30/16 19:34	1

Lab Sample ID: LCS 280-344589/1-A
Matrix: Solid
Analysis Batch: 344598

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 344589

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	99.2	69.6		mg/Kg		70	38 - 104

Method: 9034 - Sulfide, Acid Soluble and Insoluble (Titrimetric) (Continued)

Lab Sample ID: 280-88706-2 MS
Matrix: Solid
Analysis Batch: 344598

Client Sample ID: AC-SB-47 (4-8)
Prep Type: Total/NA
Prep Batch: 344589

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	ND	F1 F2	171	9.65	F1	mg/Kg	☼	6	38 - 104

Lab Sample ID: 280-88706-2 MSD
Matrix: Solid
Analysis Batch: 344598

Client Sample ID: AC-SB-47 (4-8)
Prep Type: Total/NA
Prep Batch: 344589

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfide	ND	F1 F2	170	16.5	F1 F2	mg/Kg	☼	10	38 - 104	52	35

Method: 9045D - pH

Lab Sample ID: LCS 280-344969/1-A
Matrix: Solid
Analysis Batch: 345001

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH adj. to 25 deg C	7.00	6.9		SU		99	97 - 103

Method: 9095A - Paint Filter

Lab Sample ID: 280-88706-1 DU
Matrix: Solid
Analysis Batch: 344375

Client Sample ID: AC-SB-45-51
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Free Liquid	yes		yes		mg/L		NC	

GC/MS VOA

Prep Batch: 344602

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-88706-1	AC-SB-45-51	Total/NA	Solid	5030B	
280-88706-3	AC-SB-46 (4-8)	Total/NA	Solid	5030B	
MB 280-344602/1-A	Method Blank	Total/NA	Solid	5030B	
LCS 280-344602/2-A	Lab Control Sample	Total/NA	Solid	5030B	
280-88706-1 MS	AC-SB-45-51	Total/NA	Solid	5030B	
280-88706-1 MSD	AC-SB-45-51	Total/NA	Solid	5030B	

Analysis Batch: 344606

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-88706-1	AC-SB-45-51	Total/NA	Solid	8260B	344602
280-88706-3	AC-SB-46 (4-8)	Total/NA	Solid	8260B	344602
MB 280-344602/1-A	Method Blank	Total/NA	Solid	8260B	344602
LCS 280-344602/2-A	Lab Control Sample	Total/NA	Solid	8260B	344602
280-88706-1 MS	AC-SB-45-51	Total/NA	Solid	8260B	344602
280-88706-1 MSD	AC-SB-45-51	Total/NA	Solid	8260B	344602

GC/MS Semi VOA

Prep Batch: 344767

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-88706-1	AC-SB-45-51	Total/NA	Solid	3546	
280-88706-2	AC-SB-47 (4-8)	Total/NA	Solid	3546	
MB 280-344767/1-A	Method Blank	Total/NA	Solid	3546	
LCS 280-344767/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 345306

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-88706-1	AC-SB-45-51	Total/NA	Solid	8270C SIM	344767
280-88706-2	AC-SB-47 (4-8)	Total/NA	Solid	8270C SIM	344767
MB 280-344767/1-A	Method Blank	Total/NA	Solid	8270C SIM	344767
LCS 280-344767/2-A	Lab Control Sample	Total/NA	Solid	8270C SIM	344767

Metals

Prep Batch: 344406

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-88706-1	AC-SB-45-51	Total/NA	Solid	3050B	
280-88706-3	AC-SB-46 (4-8)	Total/NA	Solid	3050B	
MB 280-344406/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 280-344406/2-A	Lab Control Sample	Total/NA	Solid	3050B	
280-88706-1 MS	AC-SB-45-51	Total/NA	Solid	3050B	
280-88706-1 MSD	AC-SB-45-51	Total/NA	Solid	3050B	

Analysis Batch: 344902

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-88706-1	AC-SB-45-51	Total/NA	Solid	6010C	344406
280-88706-3	AC-SB-46 (4-8)	Total/NA	Solid	6010C	344406
MB 280-344406/1-A	Method Blank	Total/NA	Solid	6010C	344406
LCS 280-344406/2-A	Lab Control Sample	Total/NA	Solid	6010C	344406
280-88706-1 MS	AC-SB-45-51	Total/NA	Solid	6010C	344406

Metals (Continued)

Analysis Batch: 344902 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-88706-1 MSD	AC-SB-45-51	Total/NA	Solid	6010C	344406

Prep Batch: 344944

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-88706-1	AC-SB-45-51	Total/NA	Solid	7471B	
280-88706-3	AC-SB-46 (4-8)	Total/NA	Solid	7471B	
MB 280-344944/1-A	Method Blank	Total/NA	Solid	7471B	
LCS 280-344944/2-A	Lab Control Sample	Total/NA	Solid	7471B	

Analysis Batch: 345116

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-88706-1	AC-SB-45-51	Total/NA	Solid	7471B	344944
280-88706-3	AC-SB-46 (4-8)	Total/NA	Solid	7471B	344944
MB 280-344944/1-A	Method Blank	Total/NA	Solid	7471B	344944
LCS 280-344944/2-A	Lab Control Sample	Total/NA	Solid	7471B	344944

Analysis Batch: 345120

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-88706-1	AC-SB-45-51	Total/NA	Solid	6010C	344406
280-88706-3	AC-SB-46 (4-8)	Total/NA	Solid	6010C	344406
280-88706-1 MS	AC-SB-45-51	Total/NA	Solid	6010C	344406
280-88706-1 MSD	AC-SB-45-51	Total/NA	Solid	6010C	344406

General Chemistry

Analysis Batch: 229072

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-88706-1	AC-SB-45-51	Total/NA	Solid	1020A	
280-88706-2	AC-SB-47 (4-8)	Total/NA	Solid	1020A	
LCS 580-229072/1	Lab Control Sample	Total/NA	Solid	1020A	
LCSD 580-229072/2	Lab Control Sample Dup	Total/NA	Solid	1020A	

Analysis Batch: 344375

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-88706-1	AC-SB-45-51	Total/NA	Solid	9095A	
280-88706-2	AC-SB-47 (4-8)	Total/NA	Solid	9095A	
280-88706-1 DU	AC-SB-45-51	Total/NA	Solid	9095A	

Prep Batch: 344589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-88706-1	AC-SB-45-51	Total/NA	Solid	9030B	
280-88706-2	AC-SB-47 (4-8)	Total/NA	Solid	9030B	
MB 280-344589/2-A	Method Blank	Total/NA	Solid	9030B	
LCS 280-344589/1-A	Lab Control Sample	Total/NA	Solid	9030B	
280-88706-2 MS	AC-SB-47 (4-8)	Total/NA	Solid	9030B	
280-88706-2 MSD	AC-SB-47 (4-8)	Total/NA	Solid	9030B	

Analysis Batch: 344598

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-88706-1	AC-SB-45-51	Total/NA	Solid	9034	344589

General Chemistry (Continued)

Analysis Batch: 344598 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-88706-2	AC-SB-47 (4-8)	Total/NA	Solid	9034	344589
MB 280-344589/2-A	Method Blank	Total/NA	Solid	9034	344589
LCS 280-344589/1-A	Lab Control Sample	Total/NA	Solid	9034	344589
280-88706-2 MS	AC-SB-47 (4-8)	Total/NA	Solid	9034	344589
280-88706-2 MSD	AC-SB-47 (4-8)	Total/NA	Solid	9034	344589

Analysis Batch: 344870

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-88706-1	AC-SB-45-51	Total/NA	Solid	Moisture	
280-88706-2	AC-SB-47 (4-8)	Total/NA	Solid	Moisture	
280-88706-3	AC-SB-46 (4-8)	Total/NA	Solid	Moisture	

Prep Batch: 344892

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-88706-1	AC-SB-45-51	Total/NA	Solid	9012B	
280-88706-2	AC-SB-47 (4-8)	Total/NA	Solid	9012B	
MB 280-344892/4-A	Method Blank	Total/NA	Solid	9012B	
HLCS 280-344892/1-A	Lab Control Sample	Total/NA	Solid	9012B	
LCS 280-344892/3-A	Lab Control Sample	Total/NA	Solid	9012B	
LLCS 280-344892/2-A	Lab Control Sample	Total/NA	Solid	9012B	

Leach Batch: 344969

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-88706-1	AC-SB-45-51	Soluble	Solid	DI Leach	
280-88706-2	AC-SB-47 (4-8)	Soluble	Solid	DI Leach	
LCS 280-344969/1-A	Lab Control Sample	Soluble	Solid	DI Leach	

Analysis Batch: 344989

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-88706-1	AC-SB-45-51	Total/NA	Solid	9012B	344892
280-88706-2	AC-SB-47 (4-8)	Total/NA	Solid	9012B	344892
MB 280-344892/4-A	Method Blank	Total/NA	Solid	9012B	344892
HLCS 280-344892/1-A	Lab Control Sample	Total/NA	Solid	9012B	344892
LCS 280-344892/3-A	Lab Control Sample	Total/NA	Solid	9012B	344892
LLCS 280-344892/2-A	Lab Control Sample	Total/NA	Solid	9012B	344892

Analysis Batch: 345001

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-88706-1	AC-SB-45-51	Soluble	Solid	9045D	344969
280-88706-2	AC-SB-47 (4-8)	Soluble	Solid	9045D	344969
LCS 280-344969/1-A	Lab Control Sample	Soluble	Solid	9045D	344969

Lab Chronicle

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range - Soils

TestAmerica Job ID: 280-88706-1

Client Sample ID: AC-SB-45-51

Lab Sample ID: 280-88706-1
Date Collected: 09/26/16 12:40
Matrix: Solid
Date Received: 09/27/16 11:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	1020A		1			229072	10/05/16 09:45	RSB	TAL SEA
Soluble	Leach	DI Leach			40.11 g	40 mL	344969	10/04/16 10:06	IEU	TAL DEN
Soluble	Analysis	9045D		1	1 mL	1 mL	345001	10/04/16 14:56	IEU	TAL DEN
Total/NA	Analysis	9095A		1			344375	09/29/16 15:49	RSM	TAL DEN
Total/NA	Analysis	Moisture		1			344870	10/04/16 05:17	IEU	TAL DEN

Client Sample ID: AC-SB-45-51

Lab Sample ID: 280-88706-1
Date Collected: 09/26/16 12:40
Matrix: Solid
Date Received: 09/27/16 11:30
Percent Solids: 67.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			4.876 g	5 mL	344602	09/30/16 12:00	ADD	TAL DEN
Total/NA	Analysis	8260B		1	5 g	5 mL	344606	09/30/16 23:47	ADD	TAL DEN
Total/NA	Prep	3546			30.8 g	1 mL	344767	10/03/16 13:11	CLH	TAL DEN
Total/NA	Analysis	8270C SIM		1			345306	10/06/16 14:38	KGV	TAL DEN
Total/NA	Prep	3050B			1.073 g	100 mL	344406	10/03/16 14:40	MLS	TAL DEN
Total/NA	Analysis	6010C		1			344902	10/04/16 00:28	CMK	TAL DEN
Total/NA	Prep	3050B			1.073 g	100 mL	344406	10/03/16 14:40	MLS	TAL DEN
Total/NA	Analysis	6010C		2			345120	10/04/16 14:18	CMK	TAL DEN
Total/NA	Prep	7471B			0.55 g	50 mL	344944	10/04/16 12:25	CDH	TAL DEN
Total/NA	Analysis	7471B		1			345116	10/04/16 19:05	CDH	TAL DEN
Total/NA	Prep	9012B			1.0838 g	50 mL	344892	10/04/16 06:10	JML	TAL DEN
Total/NA	Analysis	9012B		1	50 mL	50 mL	344989	10/04/16 12:45	JML	TAL DEN
Total/NA	Prep	9030B			50.03 g	250 mL	344589	09/30/16 16:46	NJF	TAL DEN
Total/NA	Analysis	9034		1			344598	09/30/16 19:34	NJF	TAL DEN

Client Sample ID: AC-SB-47 (4-8)

Lab Sample ID: 280-88706-2
Date Collected: 09/26/16 11:04
Matrix: Solid
Date Received: 09/27/16 11:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	1020A		1			229072	10/05/16 09:45	RSB	TAL SEA
Soluble	Leach	DI Leach			40.38 g	40 mL	344969	10/04/16 10:06	IEU	TAL DEN
Soluble	Analysis	9045D		1	1 mL	1 mL	345001	10/04/16 14:56	IEU	TAL DEN
Total/NA	Analysis	9095A		1			344375	09/29/16 15:49	RSM	TAL DEN
Total/NA	Analysis	Moisture		1			344870	10/04/16 05:17	IEU	TAL DEN

Lab Chronicle

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range - Soils

TestAmerica Job ID: 280-88706-1

Client Sample ID: AC-SB-47 (4-8)

Date Collected: 09/26/16 11:04
Date Received: 09/27/16 11:30

Lab Sample ID: 280-88706-2

Matrix: Solid
Percent Solids: 58.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			30.0 g	1 mL	344767	10/03/16 13:11	CLH	TAL DEN
Total/NA	Analysis	8270C SIM		1			345306	10/06/16 15:04	KGV	TAL DEN
Total/NA	Prep	9012B			1.0412 g	50 mL	344892	10/04/16 06:10	JML	TAL DEN
Total/NA	Analysis	9012B		1	50 mL	50 mL	344989	10/04/16 13:20	JML	TAL DEN
Total/NA	Prep	9030B			49.97 g	250 mL	344589	09/30/16 16:46	NJF	TAL DEN
Total/NA	Analysis	9034		1			344598	09/30/16 19:34	NJF	TAL DEN

Client Sample ID: AC-SB-46 (4-8)

Date Collected: 09/26/16 10:22
Date Received: 09/27/16 11:30

Lab Sample ID: 280-88706-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			344870	10/04/16 05:17	IEU	TAL DEN

Client Sample ID: AC-SB-46 (4-8)

Date Collected: 09/26/16 10:22
Date Received: 09/27/16 11:30

Lab Sample ID: 280-88706-3

Matrix: Solid
Percent Solids: 75.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.084 g	5 mL	344602	09/30/16 12:00	ADD	TAL DEN
Total/NA	Analysis	8260B		1	5 g	5 mL	344606	10/01/16 00:54	ADD	TAL DEN
Total/NA	Prep	3050B			1.168 g	100 mL	344406	10/03/16 14:40	MLS	TAL DEN
Total/NA	Analysis	6010C		1			344902	10/04/16 00:44	CMK	TAL DEN
Total/NA	Prep	3050B			1.168 g	100 mL	344406	10/03/16 14:40	MLS	TAL DEN
Total/NA	Analysis	6010C		1			345120	10/04/16 14:33	CMK	TAL DEN
Total/NA	Prep	7471B			0.56 g	50 mL	344944	10/04/16 12:25	CDH	TAL DEN
Total/NA	Analysis	7471B		1			345116	10/04/16 19:07	CDH	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Certification Summary

Client: Quantum Water Consulting
Project/Site: Adams County Shooting Range - Soils

TestAmerica Job ID: 280-88706-1

Laboratory: TestAmerica Denver

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Oregon	NELAP	10	4025	01-09-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
9045D		Solid	Temperature
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids

Laboratory: TestAmerica Seattle

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-17
California	State Program	9	2901	01-31-18
L-A-B	DoD ELAP		L2236	01-19-19
L-A-B	ISO/IEC 17025		L2236	01-19-19
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-05-17
US Fish & Wildlife	Federal		LE058448-0	10-31-16
USDA	Federal		P330-14-00126	04-08-17
Washington	State Program	10	C553	02-17-17

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Joe Lammers	Lab PM: Rothmeyer, Stephanie K	Carrier Tracking No(s):	COC No:
Client Contact: Mr. Chris Krajicek	Phone: 303-589-4847	E-Mail: stephanie.rothmeyer@testamericainc.com		Page: Page 1 of 1
Company: Quantum Water Consulting				Job #: 132E-15
Address: 1746 Cole Blvd Suite 340	Due Date Requested: 10/11/16			
City: Lakewood	TAT Requested (days): Standard 2 weeks			
State, Zip: CO, 80401				
Phone: 720-524-4294(Tel)	PO #: Purchase Order Requested			
Email: chris@quantumwaterco.com	WO #:			
Project Name: Adams County Shooting Range - Additional Soils	Project #: 28015888			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B - VOCs - HSL Analyte list (CLP) full spike	Total Metals - 6010C, 7471B	1020A - Flashpoint	Cyanide - 9012B, Sulfide - 9034, pH - 9045D, Paint Filter - 9095A	8270C_SIM - PAHs (GC/MS SIM)	TCLP VOCs/Metals/PAH	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N	N	N	N	N			
AC-SB-45-51	9/26/16	12:40	C	S	N	N	X	X	X	X	X	X		Hold TCLP until further notice
AC-SB-47(4-8)	9/26/16	11:04	G	S					X	X	X			
AC-SB-46(4-8)	9/26/16	16:22	G	S			X	X						
AC-SB-48(12-16)	9/26/16	11:35										X		
AC-SB-48(4-8)	9/26/16	11:30										X		
AC-SB-47(8-10)	9/26/16	11:10										X		

280-88706 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 9-27-16 (11:30)	Company	Received by:	Date/Time: 9-27-16 1130	Company TAD
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: △ Yes △ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks: 5.9 IR#5 0.0 RP 9-27-16

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Rothmeyer, Stephanie K	Carrier Tracking No(s):	COC No: 280-369670.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: stephanie.rothmeyer@testamericainc.com		Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.				Job #: 280-88706-1
Address: 5755 8th Street East, ,	Due Date Requested: 10/14/2016			
City: Tacoma	TAT Requested (days):			
State, Zip: WA, 98424				
Phone: 253-922-2310(Tel) 253-922-5047(Fax)	PO #:			
Email:	WO #:			
Project Name: Adams County Shooting Range - Soils	Project #: 28015888			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	1020A/ Ignitability, Setaflash Closed-Cup Metho	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
AC-SB-45-51 (280-88706-1)	9/26/16	12:40 Mountain		Solid			X	1	
AC-SB-47 (4-8) (280-88706-2)	9/26/16	11:04 Mountain		Solid			X	1	

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	4-30-16 1600	TAD	B. Hall	10.1.16 1100	SEATA
Relinquished by:			Received by:		
Relinquished by:			Received by:		

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks: IR2 = 0.4/0.5 W/C.S.

Login Sample Receipt Checklist

Client: Quantum Water Consulting

Job Number: 280-88706-1

Login Number: 88706
List Number: 1
Creator: Pottruff, Reed W

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
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.	False	Refer to Job Narrative for details.
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").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Quantum Water Consulting

Job Number: 280-88706-1

Login Number: 88706
List Number: 2
Creator: Gall, Brandon A

List Source: TestAmerica Seattle
List Creation: 10/01/16 04:49 PM

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

Appendix F9- Laboratory Analysis Report - TCLP North Shooting Range Wood Backstop

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Tel: (303)736-0100

TestAmerica Job ID: 280-88455-1
Client Project/Site: 14331 Riverdale Rd

For:
DS Consulting Inc.
12477 West Cedar Drive
Suite 101
Lakewood, Colorado 80228

Attn: Brandon Sinkbeil

Authorized for release by:
10/6/2016 1:53:56 PM

Kae Yoder, Senior Project Manager
(303)736-0190
kae.yoder@testamericainc.com

Table of Contents

Definitions/Glossary

Client: DS Consulting Inc.
Project/Site: 14331 Riverdale Rd

TestAmerica Job ID: 280-88455-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
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
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: 280-88455-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: DS Consulting, Inc.

Project: 14331 Riverdale Rd.

Job Number: 280-88455-1

With exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. All laboratory quality control samples analyzed in conjunction with the samples in this project were within established control limits, with any exceptions noted.

Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples may have been diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

Please note that Non-Detect (ND) results have been evaluated down to the Method Detection Limit (MDL).

Results between the method detection limit (MDL) and reporting limit (RL) are flagged with a "J" qualifier to indicate an estimated value. These results are statistically less reliable than results greater than or equal to the RL and should be considered a qualitative value.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The sample was received on 9/22/2016 1:08 PM. The temperature of the cooler at receipt was 25.6º C.

Receipt Exceptions

The sample arrived at the laboratory at an elevated temperature of 25.6°C. No ice was present. The client was notified on 9/26/2016.

No sample ID, sample date, or sample time information was listed on the sample container label. The sample ID, sample date and sample time were logged per the information on the Chain of Custody. The client was notified on 9/26/2016.

TCLP Metals - 1311/6010C

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

Detection Summary

Client: DS Consulting Inc.
Project/Site: 14331 Riverdale Rd

TestAmerica Job ID: 280-88455-1

Client Sample ID: SHOOT 1 — Lab Sample ID: 280-88455-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	0.43	J	0.50	0.013	mg/L	1		6010C	TCLP

This Detection Summary does not include radiochemical test results.

Method Summary

Client: DS Consulting Inc.
Project/Site: 14331 Riverdale Rd

TestAmerica Job ID: 280-88455-1

Method	Method Description	Protocol	Laboratory
6010C	TCLP Metals (ICP)	SW846	TAL DEN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: DS Consulting Inc.
Project/Site: 14331 Riverdale Rd

TestAmerica Job ID: 280-88455-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-88455-1	SHOOT 1	Solid	09/21/16 14:00	09/22/16 13:08

Client: DS Consulting Inc.
Project/Site: 14331 Riverdale Rd

TestAmerica Job ID: 280-88455-1

Method: 6010C - TCLP Metals (ICP) - TCLP

Client Sample ID: SHOOT 1
Date Collected: 09/21/16 14:00
Date Received: 09/22/16 13:08

Lab Sample ID: 280-88455-1
Matrix: Solid

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.43	J	0.50	0.013	mg/L		10/03/16 14:40	10/04/16 01:06	1

Method: 6010C - TCLP Metals (ICP)

Lab Sample ID: LB 280-344382/1-B
Matrix: Solid
Analysis Batch: 344908

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 344641

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.50	0.013	mg/L		10/03/16 14:40	10/04/16 00:46	1

Lab Sample ID: LCS 280-344382/2-B
Matrix: Solid
Analysis Batch: 344908

Client Sample ID: Lab Control Sample
Prep Type: TCLP
Prep Batch: 344641

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead			5.50	5.48		mg/L		100	80 - 120		

Lab Sample ID: 280-88568-B-2-D MS
Matrix: Solid
Analysis Batch: 344908

Client Sample ID: Matrix Spike
Prep Type: TCLP
Prep Batch: 344641

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Lead	0.027	J	5.50	4.94		mg/L		89	80 - 120		

Lab Sample ID: 280-88568-B-2-E MSD
Matrix: Solid
Analysis Batch: 344908

Client Sample ID: Matrix Spike Duplicate
Prep Type: TCLP
Prep Batch: 344641

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	0.027	J	5.50	5.90		mg/L		107	80 - 120	18	20

QC Association Summary

Client: DS Consulting Inc.
Project/Site: 14331 Riverdale Rd

TestAmerica Job ID: 280-88455-1

Metals

Leach Batch: 344382

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-88455-1	SHOOT 1	TCLP	Solid	1311	
LB 280-344382/1-B	Method Blank	TCLP	Solid	1311	
LCS 280-344382/2-B	Lab Control Sample	TCLP	Solid	1311	
280-88568-B-2-D MS	Matrix Spike	TCLP	Solid	1311	
280-88568-B-2-E MSD	Matrix Spike Duplicate	TCLP	Solid	1311	

Prep Batch: 344641

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-88455-1	SHOOT 1	TCLP	Solid	3010A	344382
LB 280-344382/1-B	Method Blank	TCLP	Solid	3010A	344382
LCS 280-344382/2-B	Lab Control Sample	TCLP	Solid	3010A	344382
280-88568-B-2-D MS	Matrix Spike	TCLP	Solid	3010A	344382
280-88568-B-2-E MSD	Matrix Spike Duplicate	TCLP	Solid	3010A	344382

Analysis Batch: 344908

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
280-88455-1	SHOOT 1	TCLP	Solid	6010C	344641
LB 280-344382/1-B	Method Blank	TCLP	Solid	6010C	344641
LCS 280-344382/2-B	Lab Control Sample	TCLP	Solid	6010C	344641
280-88568-B-2-D MS	Matrix Spike	TCLP	Solid	6010C	344641
280-88568-B-2-E MSD	Matrix Spike Duplicate	TCLP	Solid	6010C	344641

Lab Chronicle

Client: DS Consulting Inc.
Project/Site: 14331 Riverdale Rd

TestAmerica Job ID: 280-88455-1

Client Sample ID: SHOOT 1

Date Collected: 09/21/16 14:00
Date Received: 09/22/16 13:08

Lab Sample ID: 280-88455-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			1.0 g	1.0 mL	344382	09/29/16 17:45	DFB1	TAL DEN
TCLP	Prep	3010A			10 mL	50 mL	344641	10/03/16 14:40	MLS	TAL DEN
TCLP	Analysis	6010C		1			344908	10/04/16 01:06	CRR	TAL DEN

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Chain of Custody Record

Sampler ID: DAVE SINKBEIL

Temperature on Receipt: _____

Drinking Water? Yes ☐ No ☒

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124-280 (0508)

Client	Project Manager	Date	Chain of Custody Number
DS Environmental Consulting			193124
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page _____ of _____**
12477 W Cedar Dr #101			
City	**State**	**Zip Code**	**Site Contact** / **Lab Contact**
Lakewood	CO	80228	
Project Name and Location (State)	**Carrier/Waybill Number**		
14331 Riverdale Rd			
Contract/Purchase Order/Quote No.			
Dave Sinkbeil 720.201.4411			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Solid	Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/ NaOH	Analysis (Attach list if more space is needed): TCLP Metals Pb	Special Instructions/ Conditions of Receipt
Shoot 1	9/21/16	2p					X							X	

280-88455 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
(A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☒ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By: Kelly Sinkbeil	9/22/16	108 pm	1. Received By	9/22/16	1308
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

25.6+0.0 IR#5 Transferred by DS 9/22/16

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

Login Sample Receipt Checklist

Client: DS Consulting Inc.

Job Number: 280-88455-1

Login Number: 88455
List Number: 1
Creator: White, Denise E

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	N/A	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	N/A	
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.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Appendix G - Off-Site Well Sampling Log

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Field Sampling Data Sheet

QUANTUM
WATER & ENVIRONMENT
1746 Cole Boulevard
Suite 340
Lakewood, CO 80401
720.524.4294
quantumwaterco.com

Date/Time
01/23/2016

Site Address

Site Contact
CONFIDENTIAL

Site Phone Number
CONFIDENTIAL

Sample Type

- [x] Well
- [ ] Spring
- [ ] Seep
- [ ] Pond
- [ ] Ditch

Property Owner Name
CONFIDENTIAL

Property Owner Phone Number
CONFIDENTIAL

Property Owner Mailing Address
14400 Riverdale Rd. Brighton Colorado

Individuals Present Who was on-site during the sampling event
John Dellaport

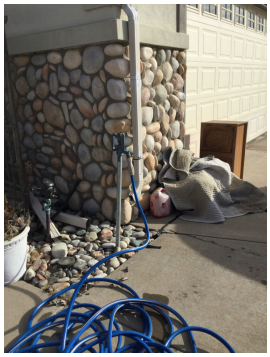
Permit No:	Receipt Number:
258253	
Total Depth (ft.):	**Static Water Level (ft.):**
300	81
Yield (GPM):	**Well Diameter (in.):**
10	4 in

Water Well Information Onsite

Water well casing height (in.):	Ground Elevation (ft.):
24	5010
Ground Elevation How determined?	**%LEL at wellhead (if measured):**
Theodolite app.	Not measured
%CH4 at wellhead (if measured):	**Weather Conditions**
	Clear, 50°, snow-covered. Sunny.

Photo 1

Photo 2



Where was the sample taken

- [x] Outside Tap
- [ ] Well House
- [ ] Kitchen Tap
- [ ] Spring
- [ ] Seep

Was the sample taken before treatment?

- (•) Yes
- ( ) No

Was the sample taken before pressure tank?

- (•) Yes
- ( ) No

Condition of the Well, Spring or Seep:
Wellhead sealed? Does the ground slope away from the well? Visible contamination of spring/seep?, etc.

Yes wellhead sealed. Yes ground slopes away from the well. No visible contamination around the wellsite

Landowner Comments on Water Quality

Owner periodically treats well with chlorine bleach and will treat well following this sampling event. No concerns with water quality.

Water Quality Field Parameters

Time	Purge Vol. (gal)	pH	Conductivity	Temp	Color/Appearance/Sediment	Odor	Bubbles/Effervescence
1045	50	7.58	1646	14.8	Clear	None	None
1050	100	8.13	1639	14.9	Clear	None	None
1100	200	8.59	1492	15.3	Clear	None	None
1110	300	8.63	1433	15.2	Clear	None	None
1115	350	8.67	1379	15.3	Clear	None	None
1120	400	8.66	1376	15.1	Clear	None	None

Purge rate (GPM):

10

Purge Time (min.):

35

Total Purge Volume (gal.):

400

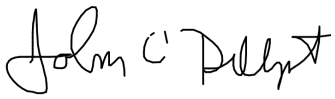
Sampling flow rate (GPM):

0.25

Additional Information:

Well is approximately 30 feet west of house and has a to 2 foot stick up. Hydrant is located at the southwest corner of the house. Connected 50 foot garden hose to hydrant and purged water by cottonwood trees.

Sampler's Name
John Dellaport

Sampler's Signature


Appendix H - 30-Inch Storm Water Drainage Pipe CCTV Survey Report

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Project Information

Project Name:	Project Number:	Date:
ADAMS COUNTY SHOOT RANGE 050516SH		

Contractor	Quality Pipe Services
Responsible:	
Department:	
Street:	700 W. MississippiAve
City:	Denver
Telephone:	303-662-8014
Fax:	
Mobile:	
EMail:	

Notes:

Quality Pipe Services
700 W. MississippiAve
Denver Colorado 80223
303-662-8014

Defect Listing

Pipe Segment Refere...	City	Street	Material		Location C...	Sewer Use
	BRIGHTON	14451 RIVERDALE RD	Corrugated Metal Pi...		Main Highw...	Stormwater
Upstream MH	Total Length	Year Laid	Shape		Location Details	
INVERT INLET			Circular			
Downstream MH	Length surveyed	Year Renewed	Height	Width	Pipe Joint...	
INVERT OUTLET	75.4		30	30		

SPR	17	MPR	7	PO Number	Customer
SPRI	4.3	MPRI	3.5		QUANTUM WATER & ENVIRO
QSR	5321	QMR	5121	Work Order	Purpose
					Routine Assessment

OPR	Surveyed By	Direction	Date	Media label
24	ED_NELSON	Upstream	20160505	050516SH
OPRI	Certificate Number	Pre-Cleaning	Time	Weather
4	209-8213	No Pre-Cleaning	10:15	Dry
Date Cleaned			End Time	Additional Info
			10:48	

Distance	Condition	Cont. Dfct.	Values			Joint	Clock Position		Grade
			1st	2nd	%		At/From	To	
0.0 ft.	Manhole					☐			
Remarks:	SURVEY BEGINS DOWNSTREAM OUTLET								
0.0 ft.	Water Level				5	☐			
6.0 ft.	Hole Soil Visible					☐	11	1	5
14.9 ft.	Deformed Horizontally				10	☐			5
Remarks:	TOP PUSHED IN								
21.9 ft.	Water Level Sag				15	☐			2
35.2 ft.	Deposits Settled Fine				10	☐	5	7	2
60.1 ft.	Hole Soil Visible					☐	10		5
74.7 ft.	Obstacle Other				100	☐	12	12	5
75.4 ft.	Survey Abandoned					☐			
Remarks:	DUE TO TIRES IN LINE CAN NOT PASS								

Quality Pipe Services
700 W. MississippiAve
Denver Colorado 80223
303-662-8014

Defect Listing Plot with Images

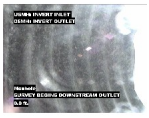
Pipe Segment Refere...	City	Street	Material	Location C...	Sewer Use
	BRIGHTON	14451 RIVERDALE RD	Corrugated Metal Pi...	Main Highw...	Stormwater
Upstream MH	**Total Length**	**Year Laid**	**Shape**	**Location Details**	
INVERT INLET			Circular		
Downstream MH	**Length surveyed**	**Year Renewed**	**Height / Width**	**Pipe Joint...**	
INVERT OUTLET	75.4		30 / 30		

SPR	17	MPR	7	PO Number	Customer: QUANTUM WATER & ENVIRO
SPRI	4.3	MPRI	3.5	Work Order	Purpose: Routine Assessment
QSR	5321	QMR	5121		

OPR	Surveyed By	Direction	Date	Media label
24	ED_NELSON	Upstream	20160505	050516SH
OPRI	**Certificate Number**	**Pre-Cleaning**	**Time**	**Weather**
4	209-8213	No Pre-Cleaning	10:15	Dry
Date Cleaned			**End Time**	**Additional Info**
			10:48	

INVERT OUTLET

0.0 ft. Manhole



SURVEY BEGINS DOWNSTREAM OUTLET

0.0 ft. Water Level

6.0 ft. Hole Soil Visible

5

14.9 ft. Deformed Horizontally

5

TOP PUSHED IN

21.9 ft. Water Level Sag

2

35.2 ft. Deposits Settled Fine

2

60.1 ft. Hole Soil Visible

5

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Denver Colorado 80223
303-662-8014

Defect Listing Plot with Images

Pipe Segment Refere...	City	Street	Material		Location C...	Sewer Use
	BRIGHTON	14451 RIVERDALE RD	Corrugated Metal Pi...		Main Highw...	Stormwater
Upstream MH	Total Length	Year Laid	Shape		Location Details	
INVERT INLET			Circular			
Downstream MH	Length surveyed	Year Renewed	Height	Width	Pipe Joint...	
INVERT OUTLET	75.4		30	30		

SPR	17	MPR	7	PO Number	Customer
SPRI	4.3	MPRI	3.5		QUANTUM WATER & ENVIRO
QSR	5321	QMR	5121	Work Order	Purpose
					Routine Assessment

OPR	Surveyed By	Direction	Date	Media label
24	ED_NELSON	Upstream	20160505	050516SH
OPRI	Certificate Number	Pre-Cleaning	Time	Weather
4	209-8213	No Pre-Cleaning	10:15	Dry
Date Cleaned			End Time	Additional Info
			10:48	

74.7 ft. Obstacle Other

5

75.4 ft. Survey Abandoned

DUE TO TIRES IN LINE CAN NOT PASS

Quality Pipe Services
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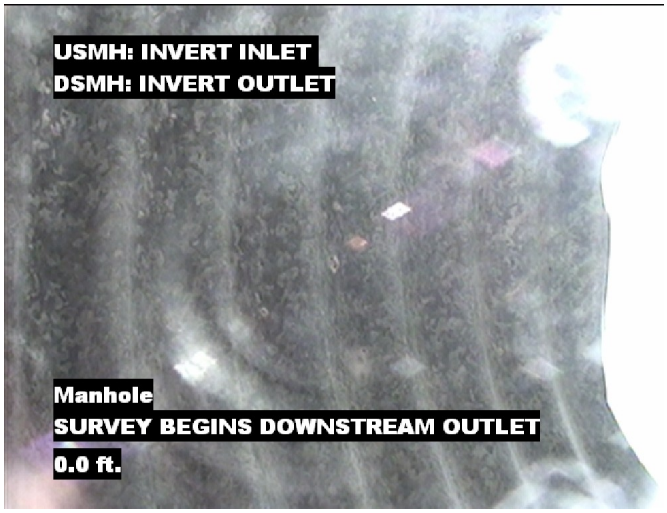
Denver Colorado 80223
303-662-8014

Image Report 4/Page

Pipe Segment Refere...	City	Street	Material		Location C...	Sewer Use
	BRIGHTON	14451 RIVERDALE RD	Corrugated Metal Pi...		Main Highw...	Stormwater
Upstream MH	Total Length	Year Laid	Shape		Location Details	
INVERT INLET			Circular			
Downstream MH	Length surveyed	Year Renewed	Height	Width	Pipe Joint...	
INVERT OUTLET	75.4		30	30		



Distance:	0.0 ft.	Grade:	0
Condition:	Manhole		
Remarks:	SURVEY BEGINS DOWNSTREAM OUTLET		

Distance:	0.0 ft.	Grade:	0
Condition:	Water Level		
Remarks:	N/A		

Distance:	6.0 ft.	Grade:	5
Condition:	Hole Soil Visible		
Remarks:	N/A		

Distance:	14.9 ft.	Grade:	5
Condition:	Deformed Horizontally		
Remarks:	TOP PUSHED IN		

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700 W. MississippiAve
Denver Colorado 80223
303-662-8014

Image Report 4/Page

Pipe Segment Refere...	City	Street	Material		Location C...	Sewer Use
	BRIGHTON	14451 RIVERDALE RD	Corrugated Metal Pi...		Main Highw...	Stormwater
Upstream MH	Total Length	Year Laid	Shape		Location Details	
INVERT INLET			Circular			
Downstream MH	Length surveyed	Year Renewed	Height	Width	Pipe Joint...	
INVERT OUTLET	75.4		30	30		

Distance: 21.9 ft. Grade: 2
Condition: Water Level Sag
Remarks: N/A

Distance: 35.2 ft. Grade: 2
Condition: Deposits Settled Fine
Remarks: N/A

Distance: 60.1 ft. Grade: 5
Condition: Hole Soil Visible
Remarks: N/A

Distance: 74.7 ft. Grade: 5
Condition: Obstacle Other
Remarks: N/A

Quality Pipe Services
700 W. MississippiAve
Denver Colorado 80223
303-662-8014

Image Report 4/Page

Pipe Segment Refere...	City	Street	Material		Location C...	Sewer Use
	BRIGHTON	14451 RIVERDALE RD	Corrugated Metal Pi...		Main Highw...	Stormwater
Upstream MH	Total Length	Year Laid	Shape		Location Details	
INVERT INLET			Circular			
Downstream MH	Length surveyed	Year Renewed	Height	Width	Pipe Joint...	
INVERT OUTLET	75.4		30	30		

Distance: 75.4 ft. Grade: 0
Condition: Survey Abandoned
Remarks: DUE TO TIRES IN LINE CAN NOT PASS

Appendix I - Geophysical Survey Report

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FUGRO CONSULTANTS, INC.

1726 Cole Boulevard
Suite 230
Lakewood, Colorado 80401
T +1 303 824 1450
F +1 303 824 1458

May 12, 2016

John Dellaport
Environmental Division Manager
Quantum Water and Environment
1746 Cole Boulevard, Suite 340
Lakewood, CO 80401
P: 720-524-4294; E: John@quantumwaterco.com

Re: Project No. 04.79160016, EM31 Survey to Delineate a Historical Landfill Boundary at the Former Adams County Shooting Range Site in Brighton, Colorado.

Mr. Dellaport and Mr. Krajicek:

This letter report presents the results of the geophysical survey to identify and help delineate the landfill boundaries and potential pipelines at the former Adams County Shooting Range site in Brighton, Colorado. Fugro Consultants Inc. (FCL) performed the geophysical surveys for Quantum Water and Environment (Quantum). The field data were collected on May 5, 2016 by Sr. Geophysicist Glen Adams and Sr. Staff Geophysicist Lincoln Steele.

The EM31 survey was designed to cover the eastern extent of a potential landfill boundary with multiple east to west oriented profile lines. The survey site is the former Adams County Shooting Range, and was historically used as a landfill site in the 1970's (Figure 1). The objective of the geophysical investigation was to determine a potential boundary for buried items in the landfill, and help interpolate the extent of the buried sold waste at the site.

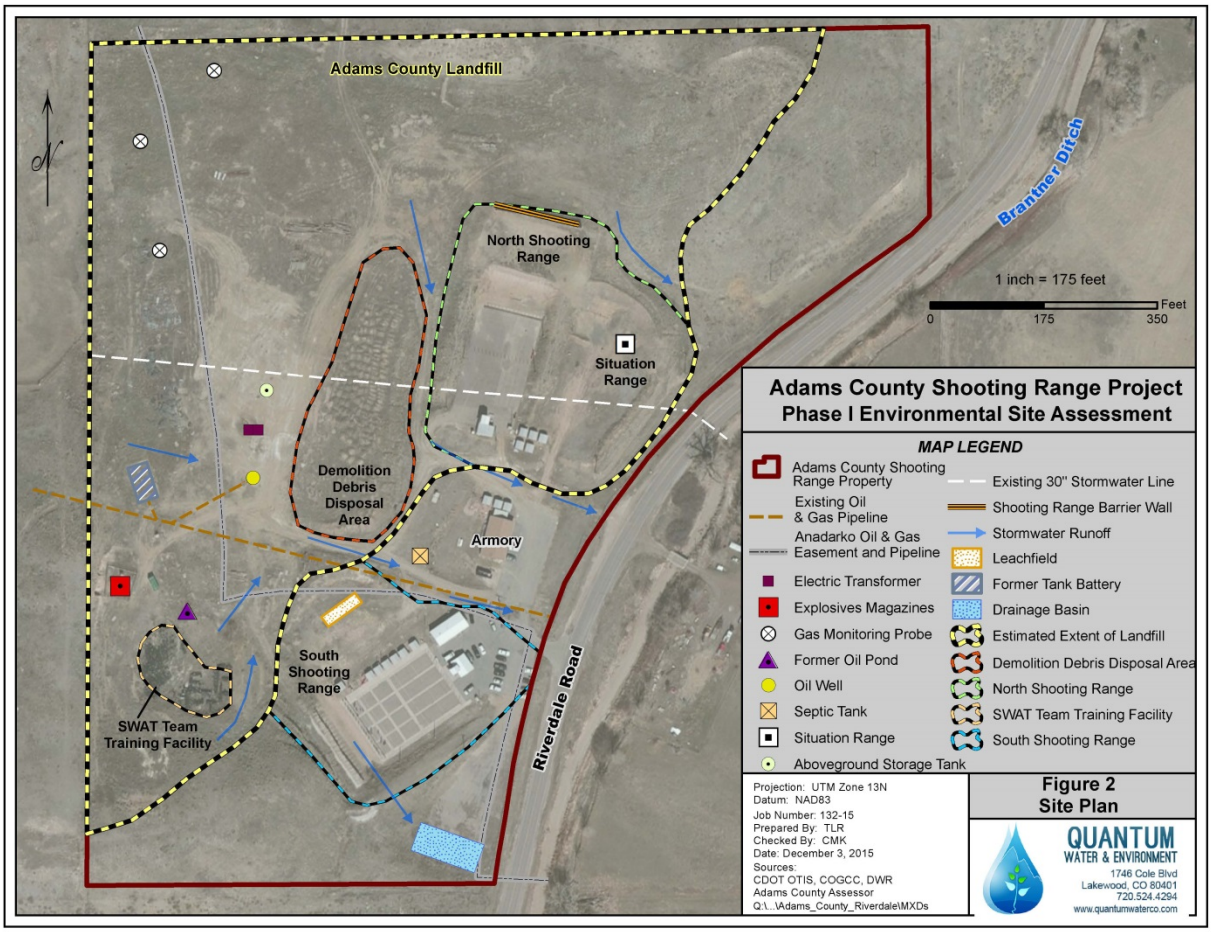


Figure 1: Site location map showing survey area.

Site Conditions

The site is located on the western most flank of the Platte River flood plain, and consists of manmade and native terraces. The general hilly terrain made it essential to use GPS integrated with the EM31 data stream, allowing the operator to navigate the steep terrain without compromising data positioning. Several areas of the site showed evidence consistent with earthmoving operations, either related to the covering of a landfill or the shaping of the various shooting ranges on site. Some areas of the site, particularly along the western edge had large amounts of surface metal debris (fencing, metal posts, old pipes, etc.), which can affect the EM31 measurements. Additionally solid waste was identified in the hill slope to the north of the Situation Range. It was assumed based on conversations with Quantum, that at the lowest elevations on the eastern side of the site directly adjacent to Riverdale Rd, the depth to bedrock may be within the measurement range of the EM31, and that the relatively higher conductivity of bedrock (Denver Formation Claystone) would show in the data.

Data Acquisition

The site was surveyed using the Geonics Ltd. EM31 (EM31) electromagnetic terrain conductivity meter, which measures both ground conductivity (quadrature phase), and magnetic susceptibility (in-phase). The effective depth of exploration is about 18 feet (5.5 meters), making the EM31 ideal for geotechnical and environmental site characterization. Data were collected along east-west survey lines spaced approximately fifty feet apart. Along each line a data point were collected nominally every fifth of a second, at a 1.5-2.5 mph walking pace. The data density was sufficient to delineate variation of conductivity and in-phase over the surveyed area. Data were recorded using an Allegro field PC and the Trackmaker-31 software, it was then converted and plotted in the field to show coverage and potential conductivity boundaries or anomalies.

Results

The plan view color plot of the EM31 conductivity data in milli-Siemens per meter (mS/m) is shown in Figure 2. High values appear as hot colors while low values are cooler colors. Coordinates are in NAD83, Colorado State Plane, Central Zone, US Survey Feet. The conductivity data generally shows the bulk electrical conductivity of the subsurface from ground level to a depth of approximately 18 feet. Over landfills it is expected that there will be a change in the conductivity of the original soils when they are either overlain or replaced by landfill material and/or capping material. In addition, since a variety of different materials are usually put into a landfill, it is expected that the ground conductivity will vary fairly rapidly within the landfill. This results in a speckled appearance within the color contours as compared with smoothly varying changes expected for natural soils.

Figure 3 shows the color contours for the inphase component in parts per thousand (ppt). Inphase variations should generally mimic the conductivity variations. Inphase, however, tends to be more sensitive to metal objects resulting in dipole features (paired Inphase high and lows).

Both of the maps have also been converted to .kmz files to allow a more detailed comparison of the data with surface features.

For each of the data sets, interpretations of features within the data have been superimposed on the figures. The main objective of the survey was to identify the eastern extent of the landfill. A dashed line at the interpreted landfill boundary has been superimposed over both the Ground Conductivity and Inphase data. In the northeast portion of the survey area the suspected boundary line coincides with a change in conductivity from around 20 mS/m (green) to over 50 mS/m (pink to red). The boundary is fairly abrupt and quite linear. A possible reason for this variation is the higher conductivities correspond to the bedrock Denver Formation which consists of an electrically conductive claystone. The lower conductivity material may be fill, consisting of sands and silts, which has been overlain on the trash. The landfill

material in this area does not appear to contain larger pieces of metal based on the lack of dipoles. Smaller metal objects, however, may be present. The boundary was interpretered along the edge of the higher conductivity zone until the middle of the survey area (approximate coordinates 3178415 E, 1774990 N), where a portion of lower conductivity material (green color) is shown outside the boundary. This was done due to the lack of variation of conductivity across the area. It may be that the lower conductivity is within the landfill and additional sampling in this area is recommended. Southwest of this location of the boundary becomes less distinct and has been placed along zones that show variations in ground conductivity. Outside of the landfill boundary, in the area of a shooting range, there are numerous features that normally would be consistent with landfill material, specifically the presence of metal and the rapid variation of ground conductivities. These features are probably caused by the range and its associated support facilities rather than landfill material. In this area, however, several larger metal objects identified. Most did not have an observable metal source at the surface and may warrant additional investigation.

The other major feature identified in the survey is the presence of a linear metal line labeled as a pipeline on the figure. Although another pipeline is known to be present in this area of the survey (Figure 1), the EM31 did not map its location. This indicates the pipeline is not composed of metallic material or is buried too deep to be detected by the EM31 (greater than 12 feet).

Summary and Recommendations

The EM31 survey mapped significant variations in the bulk ground conductivity across the survey area. In the northeast portion of the survey the changes are distinct and likely correspond to the landfill boundaries. In the central and southern portion of the area the changes are more variable and may be related to the shooting range and support facilities present. This results in a less certain placement of the landfill boundary.

It is recommended that the features identified be intrusive investigated to verify the material present in the subsurface. It is reasonable to assume that areas of consistent ground conductivity are underlain by similar material. Sampling of the different conductivity zones will give an indication of the variation of soils and/or landfill material across the survey area.

Certification and Disclaimer

All geophysical data analysis, interpretations, conclusions, and recommendations in this document have been prepared under the supervision of and reviewed by Fugro Consultants Senior Geophysicists.

This geophysical investigation was conducted using sound scientific principles and state-of-the-art technology. A high degree of professionalism was maintained during all aspects of the project from the

field investigation and data acquisition, through data processing, interpretation, and reporting. All original field data files, field notes and observations, and other pertinent information are maintained in the project files and are available for the client to review.

A geophysicist's certification of interpreted geophysical conditions comprises a declaration of his/her professional judgment. It does not constitute a warranty or guarantee, expressed or implied, nor does it relieve any other party of its responsibility to abide by contract documents, applicable codes, standards, regulations, or ordinances. It has been a pleasure to provide this survey for Quantum, and we look forward to future partnerships.

Sincerely,
FUGRO CONSULTANTS, INC.

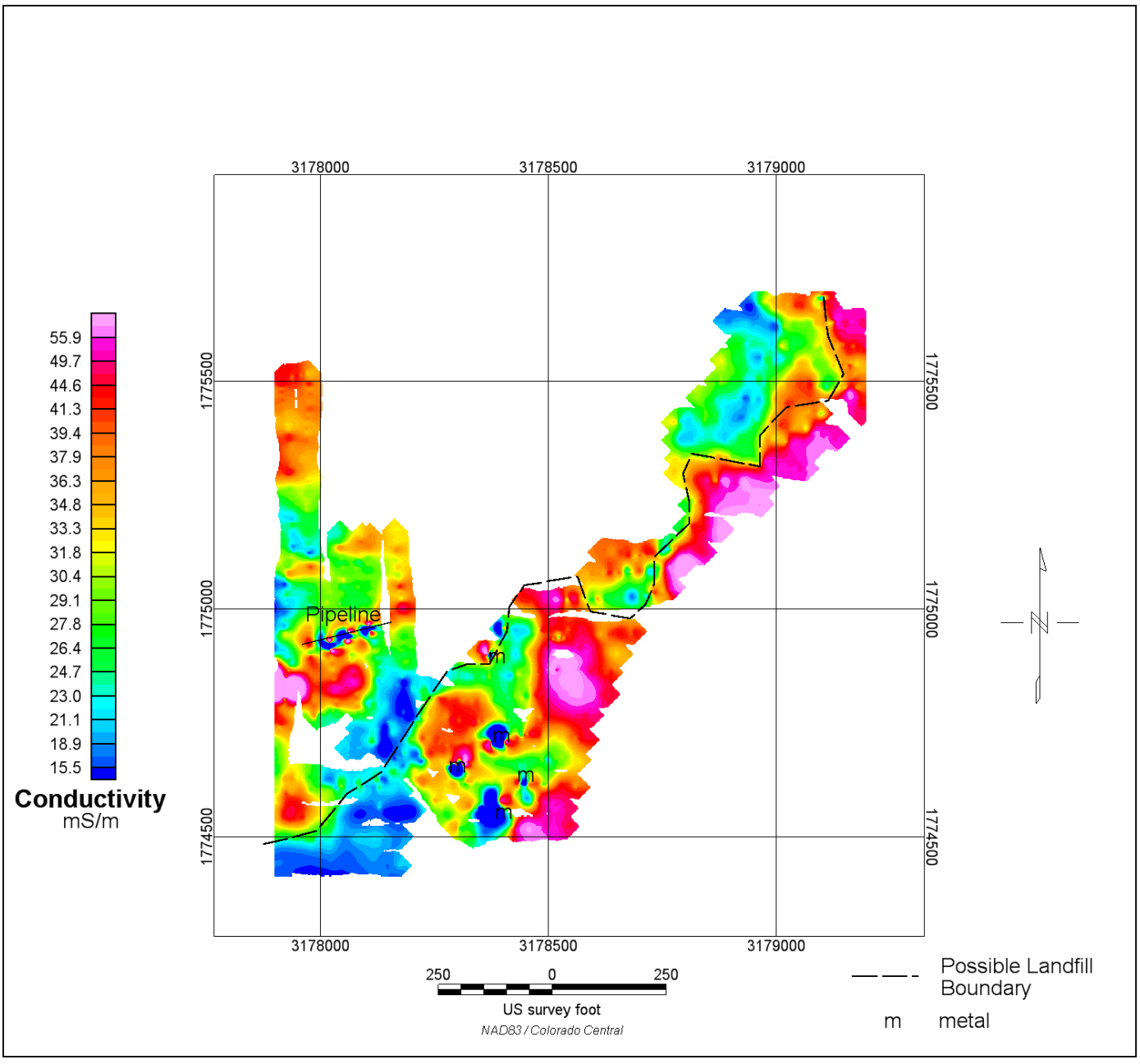
Jim Hild
Principal Geophysicist

Lincoln Steele
Senior Staff Geophysicist

Project 04.79160016 EM31 Survey at the Adams County Shooting Range in Brighton, CO

Figure 2

EM31 Ground Conductivity



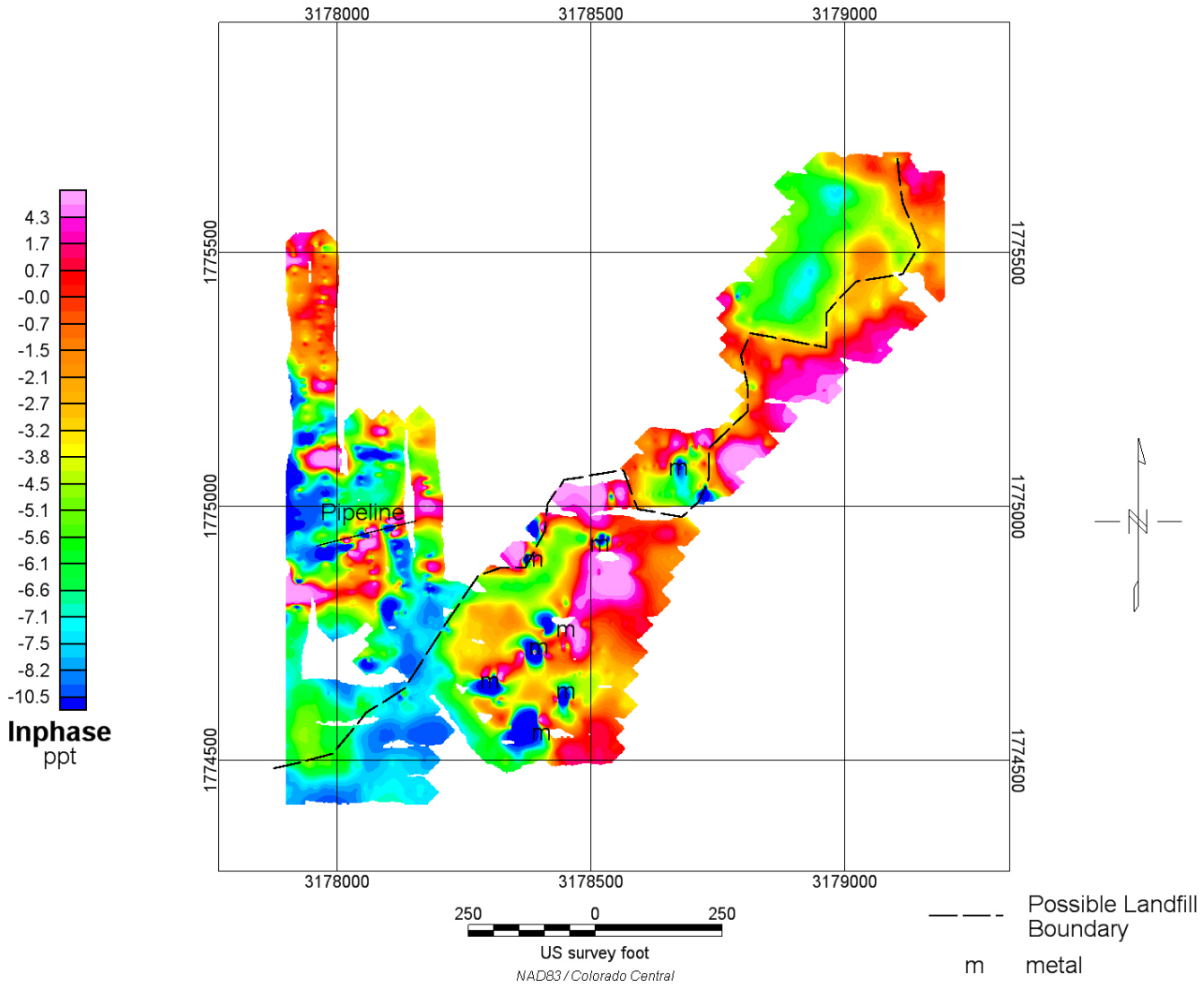
FUGRO	Quantum Water and Environment	EM31 Conductivity Map Former Adams County Shooting Range, CO

1726 Cole Blvd.,
Suite 230
Lakewood, Colorado 80401
Phone: (303) 824-1446
www.fugroconsultants.com

Project No:	Date:	Drawn By:	Checked By:	Scale:	Figure:
04.7916016	May 12, 2016	JP	JH		2

Figure 3

EM31 Inphase



FUGRO	Quantum Water and Environment	EM31 Inphase Map Former Adams County Shooting Range, CO

1726 Cole Blvd., Suite 230
Lakewood, Colorado 80401
Phone: (303) 824-1446
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Project No:	Date:	Drawn By:	Checked By:	Scale:	Figure:
04.7916016	May 12, 2016	JP	JH		3