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April 15, 2019 NY95-219-04

Gould Electronics Inc.
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Phoenix, AZ 85044

Attention: James F. Cronmiller

SAMPLING EVENT REPORT
YEAR TWENTY-THREE – OCTOBER/DECEMBER 2018
LONG TERM MONITORING PROGRAM
MARATHON REMEDIATION SITE

Gentlemen:

Enclosed is the report of the sampling events conducted during Year 23 of the Long Term Monitoring Program for the Marathon Remediation Site. This report covers the October 2018 sampling of sediment in East Foundry Cove and the December 2018 groundwater sampling conducted in the former Plant Grounds.

If you have any questions concerning the contents of this report, please contact me at (610) 840-9142.

Very truly yours,

ADVANCED GEOSERVICES ENGINEERING, P.C.

Paul F. Marano, P.E.
Senior Project Consultant

PFM:kk

cc: J. Callahan, Gould
P. Tames, USEPA
W. Mizerak, NYSDEC (Via Email)
F. Navratil, NYSDOH (Via Email)
E. Lind, Audubon Society (Via Email)
R. Shaheen, Scenic Hudson, Inc. (Via Email)

INTRODUCTION

This Sampling Event Report covers the Year 23 sampling events associated with the long term monitoring program for the Marathon Remediation Site. The sediment sampling work was conducted in accordance with Advanced GeoServices' recommendations for future monitoring presented in the "Five Year Review, Long Term Monitoring Program, Marathon Remediation Site" dated May 2, 2001. The sampling procedures and analytical protocols are described in the December 20, 1995 "Long Term Monitoring Plan for the Marathon Remediation Site" and the Supplemental Long Term Monitoring Plan issued February 21, 1996. The groundwater sampling was conducted as detailed in the December 20, 1995 Long Term Monitoring Plan.

SAMPLING EVENT

The Year 23 event included sampling and analyses of two wells (7S and MB-3) within the Plant Ground area (Area II) and sediment from East Foundry Cove (Area III). The sampling of the two wells was incorporated into the groundwater sampling performed on December 13 and 17, 2018 as part of the work related to the ongoing groundwater natural attenuation enhancement program. The East Foundry Cove sediment samples were collected on October 24, 2018 with a hand auger (in accordance with the Supplemental Long Term Monitoring Plan of February 21, 1996).

ANALYTICAL RESULTS

Laboratory analyses of the samples were conducted by TestAmerica of Edison, NJ (NY Certification # 11452). Validation of the analytical data was performed by Advanced GeoServices Engineering, P.C. The validation report for the sediment samples is included as Appendix A and the validation report for the groundwater samples is included as Appendix B. Summaries of the analytical data are included in the validation reports in the Appendices and the results are also presented on the following tables.

East Foundry Cove Sediments

Table A shows the cadmium levels detected in the sediment samples obtained from East Foundry Cove during this sampling event. For comparison purposes, the pre-remediation and post-remediation cadmium levels reported by others and the results from the previous Long Term Monitoring Program sampling events are also included in the table. The analytical results are within the range of variation experienced during previous sampling events.

Plant Ground Area Groundwater

Tables B-1, C-1, and D-1 present the Plant Ground Area groundwater sample analyses of the two wells (7S and MB-3). These tables show the concentrations of trichloroethene (TCE), 1,1,1-trichloroethane (TCA), and tetrachloroethene (PCE), respectively. For comparison purposes, these tables also include the results from past groundwater sampling events for these wells performed by Advanced GeoServices Engineering, P.C. and others, as well as the results of the previous Long Term Monitoring Program sampling events. The TCE, TCA and PCE concentrations in Wells MB-3 and 7S are generally consistent with previous results.

For reference purposes, we have also included Tables B-2, C-2, and D-2 that show the TCE, TCA, and PCE results from all wells during the period from their initial installation until 2003.

FUTURE SAMPLING

The Area II groundwater sampling for the 2019 long term monitoring program will be performed during a sampling event for the ongoing natural attenuation enhancement activities (most likely in June 2019). The sampling of Area III sediments will be performed in the fall of 2018. The planned sampling will include the sediment in East Foundry Cove.

TABLES

TABLE A

CADMIUM CONCENTRATIONS (mg/kg)
AREA III SEDIMENTS
EAST FOUNDRY COVE

SAMPLE LOCATION	EFC-1S	EFC-2S	EFC-3S	EFC-4S	EFC-5S
PRE-REMED.(1)	171	873	127	998	43.1
POST REMED.(2)	15.7	19.4	4.0	12.9	6.3
11/95	16J (52J)	85	6	190	42
3/96	7.08	14.4J (29.0J)	1.55	0.959	21.2
6/96	6.91	7.76	3.15	50.6	9.69J (4.01J)
4/97	0.386	46.4	21.5 (16.0)	104	0.454
4/98	14.2J	46.3J	7J	2.9J	75J
4/99	20.8	58.7	0.34	67.1	9.4
4/00	142.J (13.5J)	96.9J	0.83J	277J	100J
8/01	10.5 (14.1)	19.8	12.7	69.8	57.3
10/02	16.7J	58.1J (145J)	0.31J	58.3J	3.5
11/03	6.3J	31.7J	0.16U	50J (50.3J)	20.8J
11/04	17.1	50.5	20.4	35 (32.7)	36.8
9/06	22.9	22.5	6	0.35J (0.55J)	18.6
8/07	13.5 (12)	130	0.22U	16.1	0.3U
11/08	4.9	79.4 (62.3)	0.32	31.4	8.6
10/09	3.7 (3.8)	15	263	28.4	1.8
9/10	6 (6.3)	20.2	30.8	17.6	7.3
10/11	5.3 (5.6)	16.6	1	25.2	25.1
8/12	5.8 (4.6)	137	1.3	28.2	16.3
9/13	5.4 (4)	18.3	U	23.8	3.4
8/14	5 (4.6)	U	0.49	0.57	3
9/15	4.6	19.3	U	33.6 (40.1)	1
8/16	8.5	20.8	U	3.1 (2.7)	0.69
11/17	3.8	57.8	6.4	0.96J (0.9J)	3.5
10/18	6.7	22.8	U	11.9 (7.3)	22.3

NOTES:

(1) Samples obtained by Malcolm-Pirnie and others prior to the Remedial Action. These are the reported data closest to the present LTM sampling location.

(2) Average value of either the two closest post-remediation sample node locations or the analytical results of the various testing agencies (Sevenson, IQAT, and USCOE) for the same node location.

Values shown in parenthesis are field duplicates

J Estimated Value

U Undetected

TABLE B-1

TRICHLOROETHENE (TCE) CONCENTRATIONS (µg/l)
AREA II (PLANT GROUNDS) GROUNDWATER

Date	Well 7S	Well MB-3
1985[1]	-	170
1988[1]	100	-
1988[1]	82	65
11/93[2]	110J	76J
2/94[2]	100 (100)	73
10/94[2]	100	110
11/95[3]	80	51
6/96	82	120
10/96	89	70
4/97	99 (86)	61
10/97	99	64
4/98	100	78
11/98	94J	23J
4/99	84	62
11/99	82J (71J)[9]	25J
4/00	77 (75)	33
10/00	82 (81)[5]	46
8/01	74	47 (46)
9/03	74	50
11/04	76	43 (45)
9/06	79 (74)	47
7/07	73	44
7/08	68	37
8/09	59	20
9/09	60	36
9/10	65 (65)	29
8/11	58 (58)	38
8/12	66 (64)	43
5/14	66	29
11/15	57	23
11/16	63	21
12/17	50	23
12/18	52	22

NOTES:
(1) Sampling performed by others.
(2) Sampling performed by Advanced GeoServices Corp. during the remedial action.
(3) First long-term monitoring sampling event.
(4) Blank spaces indicate the well was not sampled.
(5) ND-Not Detected (detection limit=5 *ug/l* for 1985 through 1995 samples, and 2 *ug/l* from 1996 to the present).
(6) Well casing was bent; no sample was obtained.
(7) MB-1 duplicate was a blind duplicate listed as MB-100 for analysis.
(8) Well dry during sampling event.
(9) 7S duplicate was a blind duplicate listed as 71 for analysis.
(10) Samples collected as part of in-situ bioremediation program.

Values shown in parenthesis are field duplicates

TABLE B-2

TRICHLOROETHENE (TCE) CONCENTRATIONS (ug/l)
AREA II (PLANT GROUNDS) GROUNDWATER

WELL	SAMPLING EVENTS																		
	8/85[1]	88(#1)[1]	88(#2)[1]	11/93[2]	2/94[2]	10/94[2]	11/95[3]	6/96	10/96	4/97	10/97	4/98	11/98	4/99	11/99	4/00	10/00	8/01	9/03
2S	[4]	ND[5]	4J	ND		ND	[6]	ND	0.4U	0.4U	0.4U(0.4U)	1U	1U	0.3U	1U	0.2U	1U		
4I		ND	ND	ND	ND	ND	3.3U	ND	0.4U	0.4U	16	4.5(4.3)	2.4J	0.3U	2.1J	0.2U	6		1U
4D		ND	ND	ND	ND	ND	12	2	0.4U	0.7	32	3.9	6.3J	2.3	0.8J	0.2U	1U		1U
5S		ND	1J	ND	ND	ND	5.6	ND	0.4U	0.4U	23	1U	1U	0.3U	1.1J	0.2U	1U		
5I		ND	ND	ND	ND	ND	22	4	0.4U	0.4U	35	7.7	15J	8.1	2J	0.2U	1U		
6I		ND	ND	ND	ND	ND	7.3(5.3)	ND	0.4U	0.4U	1.6	1U	3.4J	1	1U	0.2U	1U		
6D				ND	ND	ND	10	3.5(4.0)	1.4	0.4U	4.7	1U	34J	0.7	1U	0.2U	1J		
7S		100	82	110J	100(100)	100	80	82	89	99(86)	99	100	94J	84	82J(71J)[9]	77(75)	82(81)[5]	74	74
7D				ND	4.3J	ND	4.4J	ND	0.4U	0.4U	0.4U	1U	1U	0.7	1U	0.2U	1U		
V5		ND	ND	ND		ND	22	ND	0.4U	0.4U	190	1U(1U)	1U	0.3U	1U	0.2U	1U		1U
MB-1			2J	ND	ND	ND	4.3J	2.8	2.5(2.1)	0.4U	0.4U	[8]	0.9J	1	1.6J	0.9	0.9J		
MB-2				ND			6.2	ND	0.4U	0.4U	0.4U	1U	1U	0.3U	1U	0.2U	1U		
MB-3	170		65	76J	73	110	51	120	70	61	64	78	23J	62	25J	33	46	47(46)	50

NOTES:

(1) Sampling performed by others.
(2) Sampling performed by Advanced GeoServices Corp. during the Remedial Action.
(3) First long term monitoring sampling event.
(4) Blank spaces indicate the well was not sampled.
(5) ND=Not detected (detection limit=5 µg/l) for 1985 through 1995 samples, and 2 µg/l from 1996 to the present).
(6) Well casing was bent; no sample was obtained.
(7) MB-1 duplicate was a blind duplicate listed as MB-100 for analysis.
(8) Well dry during sampling event.
(9) 7S duplicate was a blind duplicate listed as 71 for analysis.
(10) Samples collected as part of in-situ bioremediation program

Values shown in parenthesis are field duplicates

TABLE C-1

1,1,1 - TRICHLOROETHANE (TCA) CONCENTRATIONS (µg/l)
AREA II (PLANT GROUNDS) GROUNDWATER

Date	Well 7S	Well MB-3
11/93 (2)	3.2J	3J
2/94(2)	5U	7.9
10/94(2)	ND (4)	6
11/95(3)	2.7J	2.7J
6/96	ND	7
10/96	5.8	7.4
4/97	ND	3
10/97	0.4U	0.4U
4/98	2	4.3
11/98	3.8J	5U
4/99	3	3.7
11/99	2.1J (1.6J) (6)	1.2J
4/00	1.4 (1.2)	1.9
10/00	2.3J (2.2J) (5)	2.1J
8/01	2.1	2.2 (2.1)
10/02	1.4J (1.5J)	1.7J
9/03	1.2	2.4
11/04	0.9	2.1 (2.3)
9/06	0.7	1.6
7/07	0.6	1.4
7/08	0.4	1.2
8/09	0.39	0.71
9/09	0.47	1.9
9/10	0.53 (0.58)	0.98
8/11	0.44 (0.49)	1.2
8/12	0.39 (0.44)	1.6
5/14	ND	ND
11/15	0.29	0.61
11/16	0.38	0.54
12/17	ND	0.76
12/18	ND	0.97

NOTES:

(1) All other wells had non-detect results for all sampling events.
(2) Sampling performed by Advanced GeoServices Corp. during the Remedial Action.
(3) First long-term monitoring sampling event.
(4) ND=Not Detected (detection limit= 5 *ug/l* for 1993 through 1995 samples, and 2 *ug/l* from 1996 to the present).
(5) Blank spaces indicate the well was not sampled.
(6) 7S duplicate was a blind duplicate listed as 71 for analysis.
(7) Samples collected as part of in-situ bioremediation program.

Values shown in parenthesis are field duplicates

TABLE C-2

1,1,1-TRICHLOROETHANE (TCA) CONCENTRATIONS (UG/L)
AREA II (PLANT GROUNDS) GROUNDWATER

WELL[1]	SAMPLING EVENTS																
	11/93[2]	**2/94[2]**	**10/94[2]**	**11/95[3]**	**6/96**	**10/96**	**4/97**	**10/97**	**4/98**	**11/98**	**4/99**	**11/99**	**4/00**	**10/00**	**8/01**	**10/02**	**9/03**
7S	3.2J	5U	ND[4]	2.7J	ND	5.8	ND	0.4U	2	3.8J	3	2.1J(1.6J)[6]	1.4(1.2)	2.3J(2.2J)[5]	2.1	1.4J(1.5J)	1.2
7D	ND	4.8J	ND	ND	ND	0.4U	ND	0.4U	1U	5U	1.3U	5U	0.2U	5U			
MB-2	2J	[5]		ND	ND	0.4U	ND	0.4U	1.3	1.2J	1J	0.8J	0.8	0.7J			
MB-3	3J	7.9	6	2.7J	7	7.4	3	0.4U	4.3	5U	3.7	1.2J	1.9	2.1J	2.2(2.1)	1.7J	2.4
4D	ND	ND	ND	ND	ND	5.6	ND	0.4U	1U	5U	1.3U	5U	0.2U	5U			
4I																5U	
V5																5U	

NOTES:

(1) All other wells had non-detect results for all sampling events.
(2) Sampling performed by Advanced GeoServices Corp. during the Remedial Action.
(3) First long term monitoring sampling event.
(4) ND=Not detected (detection limit=5 µg/l) for 1993 through 1995 samples, and 2 µg/l from 1996 to the present).
(5) Blank spaces indicate the well was not sampled.
(6) 7S duplicate was a blind duplicate listed as 71 for analysis.
(7) Samples collected as part of in-situ bioremediation program.

Values shown in parenthesis are field duplicates

TABLE D-1

TETRACHLOROETHENE (PCE) CONCENTRATIONS (µg/l)
AREA II (PLANT GROUNDS) GROUNDWATER

Date	Well 7S	Well MB-3
11/93 (2)	1.2J	ND(4)
2/94 (2)	5.2	ND
10/94 (2)	ND	ND
11/95 (3)	7.7	3.2J
6/96	3	3
10/96	1.3	0.4U
4/97	0.4UJ (7.2J)	ND
10/97	3.1	3.6
4/98	4.5	2.6
11/98	5.6J	2.2J
4/99	6.3	2.7
11/99	4.8J (4.3J) (5)	2.2J
4/00	4.0 (3.6)	3.3
10/00	5.4 (5.2) (5)	2.7
8/01	3.8	4.8 (4.9)
10/02	3.3 (3.2)	4
9/03	3.5	4.2
11/04	3.5	2.3 (2.5)
9/06	4.2 (4)	1.8
7/07	4.5	2
7/08	4.8	1.4
8/09	4.9	1.4
9/09	4.2	1.5
9/10	4.1 (3.9)	2.0
8/11	3.8 (4)	2
8/12	4.9 (4.8)	1.7
5/14	7.0	1.5
11/15	4.1	4
11/16	4.2	4.7
12/17	4.2	4
12/18	4	1.6

NOTES:

(1) All other wells had non-detect results for all sampling events.
(2) Sampling performed by Advanced GeoServices Corp. during the Remedial Action.
(3) First long-term monitoring sampling event.
(4) ND=Not detected (detection limit=5*ug/l*) for 1993 through 1995 samples, and 2 *ug/l* from 1996 to the present.
(5) 7S duplicate was a blind duplicate listed as 71 for analysis.
(6) Samples collected as part of in-situ bioremediation program.

TABLE D-2

TETRACHLOROETHENE (PCE) CONCENTRATIONS (ug/l)
AREA II (PLANT GROUNDS) GROUNDWATER

WELL[1]	SAMPLING EVENTS																
	11/93[2]	**2/94[2]**	**10/94[2]**	**11/95[3]**	**6/96**	**10/96**	**4/97**	**10/97**	**4/98**	**11/98**	**4/99**	**11/99**	**4/00**	**10/00**	**8/01**	**10/02**	**9/03**
7S	1.2J	5.2	ND(4)	7.7	3	1.3	0.4UJ(7.2J)	3.1	4.5	5.6J	6.3	4.8J(4.3J)[5]	4.0(3.6)	5.4(5.2)[5]	3.8	3.3(3.2)	3.5
MB-3	ND	ND	ND	3.2J	3	0.4U	ND	3.6	2.6	2.2J	2.7	2.2J	3.3	2.7	4.8(4.9)	4	4.2
4I																1U	
V5																1U	

NOTES:

(1) All other wells had non-detect results for all sampling events.
(2) Sampling performed by Advanced GeoServices Corp. during the Remedial Action.
(3) First long term monitoring sampling event.
(4) ND=Not detected (detection limit=5 µg/l) for 1993 through 1995 samples, and 2 µg/l from 1996 to the present).
(5) 7S duplicate was a blind duplicate listed as 7I for analysis.
(6) Samples collected as part of in-situ bioremediation program

Values shown in parenthesis are field duplicates

APPENDIX A

DATA VALIDATION REPORT

OF

SEDIMENT SAMPLES

COLLECTED ON OCTOBER 24, 2018

FOR

INORGANIC AND CONVENTIONAL ANALYSES

Laboratory Case Number 460-167587

PREPARED FOR:

GOULD ELECTRONICS INC.
MARATHON SITE
COLD SPRING, NEW YORK

PREPARED BY:

ADVANCED GEOSERVICES CORP
WEST CHESTER, PENNSYLVANIA

December 4, 2018
Project Number NY 95-219-03

DATA VALIDATION REPORT
INORGANIC COMPOUNDS

INTRODUCTION

This data validation report addresses the inorganic results from the sediment samples collected from the Marathon Site on October 24, 2018, in Cold Spring, New York. Samples were analyzed by Test America in Edison, NJ (TA-Edison) by USEPA SW-846 methods. The data were reported by TA-Edison under sample delivery group (SDG) 460-167587.

The qualified analytical results are presented on the data summary table. The data summary table lists both non-detected and detected results. Support documentation summarizing the specifics of this review is presented at the end of this report.

INORGANIC COMPOUNDS

Six sediment samples and one equipment blank sample were collected and analyzed for cadmium by USEPA SW-846 Method 6010D.

This review has been performed with guidance from the USEPA's *National Functional Guidelines for Inorganic Superfund Methods Data Review* (January 2017). The findings presented in this report are based upon a review of all data supplied by the laboratory. The information examined consists of sample results, analytical holding times, initial and continuing calibrations, blank analysis results, ICP interference check sample recoveries, duplicate results, matrix spike/matrix spike duplicate (MS/MSD) recoveries and relative percent differences (RPDs), serial dilution, laboratory control samples results, and field duplicates.

Holding times were met for all samples. All analytes and system monitoring compounds were within the method-required limits for the initial and continuing calibrations (90-110%). No equipment blank contamination was present. Sample EFC-4SD was the field duplicate of EFC-4S. Field duplicate RPD was greater than 40%. The percent recoveries for the MS and MSD, and LCS were acceptable. Laboratory duplicates and serial dilutions were acceptable.

QUALIFIERS

Field Sample Duplicate

- The Field Duplicate (EFC-4S and EFC-4SD) had a relative percent difference of 47.92% for Cadmium, which is greater than the relative percent difference criteria of 40%. The results for samples EFC-4S and EFC-4SD were qualified as estimated (J).

SUMMARY

All the data is useable as qualified.

DATA VALIDATION REPORT
CONVENTIONALS

INTRODUCTION

This data validation report addresses the conventional analysis results from the sediment samples collected from the Marathon Site on December 4, 2018, in Cold Spring, New York. All samples were analyzed by Test America in Edison, NJ (TA-Edison). Sediment samples were analyzed for total organic carbon (TOC) by the Lloyd Kahn Method. The sample results were reported under TA-Edison sample delivery group (SDG) 460-167587.

The qualified analytical results are presented on the data summary table. The data summary table lists both non-detected and detected results. Support documentation summarizing the specifics of this review is presented at the end of this report.

CONVENTIONAL PARAMETERS

Six sediment samples were collected and analyzed for TOC by the Lloyd Kahn Method. The equipment blank was collected and analyzed for TOC by USEPA SW-846 Method 9060A.

This conventional data review has been performed with guidance from the USEPA's *National Functional Guidelines for Inorganic Superfund Methods Data Review*, January 2017. The findings presented in this report are based upon a review of all data supplied by the laboratory. The information examined consists of sample results, analytical holding times, initial and continuing calibration standard recoveries, calibration curves, blank analysis results, matrix spike (MS) recoveries, matrix spike duplicate (MSD) recoveries, laboratory and field duplicate relative percent differences (RPD), and laboratory control sample results.

Holding times were met for all parameters. Initial and continuing calibration standard sample results were accurate. Calibration curves had correlation coefficients greater than 0.99. TOC was detected in the bracketing continuing calibration blanks (CCB) associated to sample EB-1-102418. Sample EFC-4SD was the field duplicate of EFC-4S. Field duplicate RPD's for percent moisture were greater than 40%. Laboratory duplicate for percent moisture and percent solid were greater than the laboratory control limit of 20%. The TOC laboratory control sample, laboratory duplicate, MS, and MSD percent recoveries were acceptable.

QUALIFIERS

Field Sample Duplicate

- The Field Duplicate (EFC-4S and EFC-4SD) had a RPD of 69.31% for Percent Moisture, which is greater than the RPD criteria of 40%. The percent moisture results for samples EFC-4S and EFC-4SD were qualified as estimated (J).

Laboratory Sample Duplicate

- The laboratory Duplicate EFC-4SD had a relative percent difference of 74% and 38% for percent moisture and percent solid, respectively, which exceeded the laboratory control limit of 20%. EFC-4SD sample concentrations for percent moisture and percent solids were qualified as estimated (J) based on the sample and field duplicate RPD.

Continuing Calibration Blank

- The TOC concentrations in the bracketing CCB's were 0.415 ug/l and 0.372 ug/l. The TOC concentration for EB-1-102418 was less than the reporting limit, therefore the sample concentration was qualified as non-detect (U).

SUMMARY

All the data is useable as qualified.

QUALIFIER CODES

U - Denotes the compound or analyte was not detected at or above the associated detection limit.

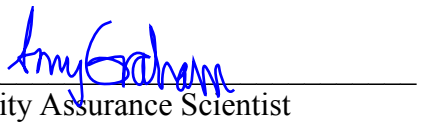
J - Denotes an estimated value or the result is below the quantitation limit.

UJ - Denotes an estimated detection or quantitation limit.

R - Denotes a rejected result. The analyte may or may not be present.

Data review was performed by an experienced quality assurance scientist independent of the analytical laboratory.

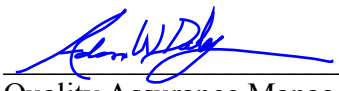
This is to certify that I have examined the analytical data and based on the information provided to me by the laboratory, in my professional judgment the data are acceptable for use except where qualified with qualifiers that modify the usefulness of those individual values.



Quality Assurance Scientist

12/5/2018

Date



Quality Assurance Manager

12/5/2018

Date

TABLES

MARATHON
Annual Sediment Sampling 2018, 10/24/18
Test America# 460-167587, Project# NY95-219

Sample Location		EFC-1S			EFC-2S			EFC-5S			EFC-4S			EFC-4SD			EFC-3S				EB-1-102418		
Lab ID		460-167587-01			460-167587-02			460-167587-03			460-167587-04			460-167587-05			460-167587-06				460-167587-07		
Sample Date		10/24/2018			10/24/2018			10/24/2018			10/24/2018			10/24/2018			10/24/2018				10/24/2018		
Matrix		Sediment			Sediment			Sediment			Sediment			Sediment			Sediment				Aqueous		
Remarks														FD of EFC-4SD							Equipment Blank		
Parameter	**Units**	**Result**	**Q**	**RL**	**Result**	**Q**	**RL**	**Result**	**Q**	**RL**	**Result**	**Q**	**RL**	**Result**	**Q**	**RL**	**Result**	**Q**	**RL**	**Units**	**Result**	**Q**	**RL**
Total Metals																							
Cadmium	mg/Kg	6.7		1.7	22.8		1.8	22.3		1.9	11.9	J	0.81	7.3	J	1.1		U	1.2	ug/L		U	4
Conventionals																							
Percent Moisture	%	61		1	63.2		1	61.6		1	21.4	J	1	44.1	J	1	49.1		1	%		NA	
Percent Solids	%	39		1	36.8		1	38.4		1	78.6	J	1	55.9	J	1	50.9		1	%		NA	
Total Organic Carbon	mg/Kg	28200		257	39500		271	42200		261	20300		127	25800		179	27900		196	mg/L	1	U	1

QA Scientist Amy Graham

Date 12/04/2018

SUPPORT DOCUMENTATION
INORGANICS

METALS DATA VALIDATION SUMMARY

Site Name: Marathon
Project Number: NY95-219
Sampling Date(s): 10/24/2018

Laboratory: Test America - Edison
Case/Order No.: 460-167587

Compound List: Cadmium

Method: 6010D

The following table indicates the data validation criteria examined, any problems identified, and the QA action applied.

Data Validation Criteria:	Accept	FYI	Qualify	Comments
Holding Times	X			
ICP/MS Tuning				NA
Initial Calibrations	X			
Continuing Calibrations	X			
Blank Analysis	X			
Field Duplicate Analysis			X	EFC-4SD & EFC-4S
Matrix Spike Analysis (MS/MSD)	X			
Laboratory Control Sample Analysis (LCS)	X			
Laboratory Duplicate Analysis	X			
ICP Internal Standard	X			
CRDL Standard	X			
Serial Dilution	X			
Interference Check Sample Recoveries	X			
Overall Assessment of Data	X			
Other:				

General Comments: Cooler Temp: 2.7°C

Accept - No qualification required.
FYI - For your information only, no qualification necessary.
Qualify - Qualify as rejected, estimated or biased.
NR - Not Reviewed
NA - Not Applicable

QA Scientist Amy Graham

Date 12/4/2018

Client: Advanced GeoServices Corporation Job Number: 460-167587-1

Client Sample ID: EFC-1S

Lab Sample ID: 460-167587-1 Date Sampled: 10/24/2018 0942
Client Matrix: Solid % Moisture: 61.0 Date Received: 10/24/2018 1514

6010D Metals (ICP)

Analysis Method:	6010D	Analysis Batch:	460-564116	Instrument ID:	ICP4
Prep Method:	3050B	Prep Batch:	460-564041	Lab File ID:	563942.asc
Dilution:	4.0			Initial Weight/Volume:	1.21 g
Analysis Date:	10/29/2018 2335			Final Weight/Volume:	50 mL
Prep Date:	10/29/2018 1010				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Cadmium		6.7		0.29	1.7

12/04/2018

Client: Advanced GeoServices Corporation Job Number: 460-167587-1

Client Sample ID: EFC-2S

Lab Sample ID: 460-167587-2 Date Sampled: 10/24/2018 0956
Client Matrix: Solid % Moisture: 63.2 Date Received: 10/24/2018 1514

6010D Metals (ICP)

Analysis Method:	6010D	Analysis Batch:	460-564116	Instrument ID:	ICP4
Prep Method:	3050B	Prep Batch:	460-564041	Lab File ID:	563942.asc
Dilution:	4.0			Initial Weight/Volume:	1.20 g
Analysis Date:	10/29/2018 2320			Final Weight/Volume:	50 mL
Prep Date:	10/29/2018 1010				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Cadmium		22.8		0.31	1.8

12/04/2018

Client: Advanced GeoServices Corporation Job Number: 460-167587-1

Client Sample ID: EFC-5S

Lab Sample ID: 460-167587-3 Date Sampled: 10/24/2018 1015
Client Matrix: Solid % Moisture: 61.6 Date Received: 10/24/2018 1514

6010D Metals (ICP)

Analysis Method:	6010D	Analysis Batch:	460-564116	Instrument ID:	ICP4
Prep Method:	3050B	Prep Batch:	460-564041	Lab File ID:	563942.asc
Dilution:	4.0			Initial Weight/Volume:	1.09 g
Analysis Date:	10/29/2018 2339			Final Weight/Volume:	50 mL
Prep Date:	10/29/2018 1010				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Cadmium		22.3		0.33	1.9

12/04/2018

Client: Advanced GeoServices Corporation Job Number: 460-167587-1

Client Sample ID: EFC-4S

Lab Sample ID: 460-167587-4 Date Sampled: 10/24/2018 1030
Client Matrix: Solid % Moisture: 21.4 Date Received: 10/24/2018 1514

6010D Metals (ICP)

Analysis Method:	6010D	Analysis Batch:	460-564116	Instrument ID:	ICP4
Prep Method:	3050B	Prep Batch:	460-564041	Lab File ID:	563942.asc
Dilution:	4.0			Initial Weight/Volume:	1.25 g
Analysis Date:	10/29/2018 2343			Final Weight/Volume:	50 mL
Prep Date:	10/29/2018 1010				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Cadmium		11.9	J	0.14	0.81

12/04/2018

Client: Advanced GeoServices Corporation Job Number: 460-167587-1

Client Sample ID: EFC-4SD

Lab Sample ID: 460-167587-5 Date Sampled: 10/24/2018 1035
Client Matrix: Solid % Moisture: 44.1 Date Received: 10/24/2018 1514

6010D Metals (ICP)

Analysis Method:	6010D	Analysis Batch:	460-564116	Instrument ID:	ICP4
Prep Method:	3050B	Prep Batch:	460-564041	Lab File ID:	563942.asc
Dilution:	4.0			Initial Weight/Volume:	1.33 g
Analysis Date:	10/29/2018 2347			Final Weight/Volume:	50 mL
Prep Date:	10/29/2018 1010				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Cadmium		7.3	J	0.18	1.1

12/04/2018

Client: Advanced GeoServices Corporation Job Number: 460-167587-1

Client Sample ID: EFC-3S

Lab Sample ID: 460-167587-6 Date Sampled: 10/24/2018 1050
Client Matrix: Solid % Moisture: 49.1 Date Received: 10/24/2018 1514

6010D Metals (ICP)

Analysis Method:	6010D	Analysis Batch:	460-564116	Instrument ID:	ICP4
Prep Method:	3050B	Prep Batch:	460-564041	Lab File ID:	563942.asc
Dilution:	4.0			Initial Weight/Volume:	1.35 g
Analysis Date:	10/29/2018 2351			Final Weight/Volume:	50 mL
Prep Date:	10/29/2018 1010				

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
Cadmium		0.20	U	0.20	1.2

12/04/2018

Client: Advanced GeoServices Corporation

Job Number: 460-167587-1

Client Sample ID: **EB-1-102418**

Lab Sample ID: 460-167587-7EB
Client Matrix: Water

Date Sampled: 10/24/2018 1205
Date Received: 10/24/2018 1514

6010D Metals (ICP)

Analysis Method:	6010D	Analysis Batch:	460-563463	Instrument ID:	ICP5
Prep Method:	3010A	Prep Batch:	460-563390	Lab File ID:	563390D1.asc
Dilution:	1.0			Initial Weight/Volume:	50 mL
Analysis Date:	10/26/2018 1954			Final Weight/Volume:	50 mL
Prep Date:	10/26/2018 1030				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Cadmium	0.22	U	0.22	4.0

AKG 12/04/2018

Site Name: **Marathon** **Metals**

Lab ID	Sample ID	Matrix	Analyte	Sample Date	Analyzed Date	Analysis Hold Time (days)	Days to Analysis	Qualify
460-167587-01	EFC-1S	Sediment	Cadmium	10/24/2018	10/29/2018	180	5.0	
460-167587-02	EFC-2S	Sediment	Cadmium	10/24/2018	10/29/2018	180	5.0	
460-167587-03	EFC-5S	Sediment	Cadmium	10/24/2018	10/29/2018	180	5.0	
460-167587-04	EFC-4S	Sediment	Cadmium	10/24/2018	10/29/2018	180	5.0	
460-167587-05	EFC-4SD	Sediment	Cadmium	10/24/2018	10/29/2018	180	5.0	
460-167587-06	EFC-3S	Sediment	Cadmium	10/24/2018	10/29/2018	180	5.0	
460-167587-07	EB-1-102418	Aqueous	Cadmium	10/24/2018	10/26/2018	180	2.0	

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12/04/2018

460-167587_Field Duplicate
Total Metals

Site Name:	**Marathon**	**Laboratory:**	**Test America - Edison**
Project Number:	**NY95-219**	**Matrix:**	**Sediment**

Sample ID	Analyte	Units	Result	Q	RL	RPD	Qualify
EFC-4S	Cadmium	mg/Kg	11.9		0.81		
EFC-4SD	Cadmium	mg/Kg	7.3		1.1	47.92	yes

Duplicate Criteria: Aqueous matrices <30 % RPD or < ± 1*RL, Soil/Solid matrices <40 %RPD or < ± 2*RL.

*** - Denotes %RPD or difference outside criteria.**

NA - Duplicate relative percent difference or difference cannot be calculated.

U / ND - Not detected.

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12/04/2018

SUPPORT DOCUMENTATION
CONVENTIONALS

CONVENTIONALS DATA VALIDATION SUMMARY

Site Name:	Marathon	Laboratory:	Test America - Edison
Project Number:	NY95-219	Case/Order No.:	460-167587
Sampling Date(s):	10/24/2018		

Compound List: TOC, Total Solids

Method: Lloyd Kahn, 9060A

The following table indicates the data validation criteria examined, any problems identified, and the QA action applied.

Data Validation Criteria:	Accept	FYI	Qualify	Comments
Holding Times	X			
Calibration Curve	X			
Initial Calibrations	X			
Continuing Calibrations	X			
Blank Analysis			X	CCB
Field Duplicate Analysis			X	EFC-4SD & EFC-4S
Matrix Spike Analysis (MS/MSD)				NA
Laboratory Control Sample Analysis (LCS)	X			
Laboratory Duplicate Analysis			X	Total Solids/Percent Moisture
Overall Assessment of Data	X			
Other:				

General Comments: Cooler Temp: 2.7°C

Accept - No qualification required.
FYI - For your information only, no qualification necessary.
Qualify - Qualify as rejected, estimated or biased.
NR - Not Reviewed
NA - Not Applicable

QA Scientist Amy Graham

Date 12/4/2018

General Chemistry

Client Sample ID: EFC-1S

Lab Sample ID: 460-167587-1 Date Sampled: 10/24/2018 0942
Client Matrix: Solid % Moisture: 61.0 Date Received: 10/24/2018 1514

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
TOC Result 1	28200		mg/Kg	176	257	1.0	Lloyd Kahn
Analysis Batch: 460-563124	Analysis Date: 10/25/2018 1345						DryWt Corrected: Y
Percent Moisture	61.0		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-563653	Analysis Date: 10/27/2018 1059						DryWt Corrected: N
Percent Solids	39.0		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-563653	Analysis Date: 10/27/2018 1059						DryWt Corrected: N

AK 12/04/2018

Client: Advanced GeoServices Corporation Job Number: 460-167587-1

General Chemistry

Client Sample ID: EFC-2S

Lab Sample ID: 460-167587-2 Date Sampled: 10/24/2018 0956
Client Matrix: Solid % Moisture: 63.2 Date Received: 10/24/2018 1514

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
TOC Result 1	39500		mg/Kg	186	271	1.0	Lloyd Kahn
Analysis Batch: 460-563124	Analysis Date: 10/25/2018 1302						DryWt Corrected: Y
Percent Moisture	63.2		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-563653	Analysis Date: 10/27/2018 1059						DryWt Corrected: N
Percent Solids	36.8		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-563653	Analysis Date: 10/27/2018 1059						DryWt Corrected: N

AK 12/04/2018

Client: Advanced GeoServices Corporation Job Number: 460-167587-1

General Chemistry

Client Sample ID: EFC-5S

Lab Sample ID: 460-167587-3 Date Sampled: 10/24/2018 1015
Client Matrix: Solid % Moisture: 61.6 Date Received: 10/24/2018 1514

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
TOC Result 1	42200		mg/Kg	179	261	1.0	Lloyd Kahn
Analysis Batch: 460-563124	Analysis Date: 10/25/2018 1353						DryWt Corrected: Y
Percent Moisture	61.6		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-563653	Analysis Date: 10/27/2018 1059						DryWt Corrected: N
Percent Solids	38.4		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-563653	Analysis Date: 10/27/2018 1059						DryWt Corrected: N

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12/04/2018

Client: Advanced GeoServices Corporation Job Number: 460-167587-1

General Chemistry

Client Sample ID: **EFC-4S**

Lab Sample ID: 460-167587-4 Date Sampled: 10/24/2018 1030
Client Matrix: Solid % Moisture: 21.4 Date Received: 10/24/2018 1514

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
TOC Result 1	20300		mg/Kg	87.2	127	1.0	Lloyd Kahn
Analysis Batch: 460-563124	Analysis Date: 10/25/2018 1428						DryWt Corrected: Y
Percent Moisture	21.4	J	%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-563653	Analysis Date: 10/27/2018 1059						DryWt Corrected: N
Percent Solids	78.6	J	%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-563653	Analysis Date: 10/27/2018 1059						DryWt Corrected: N

AK 12/04/2018

Client: Advanced GeoServices Corporation Job Number: 460-167587-1

General Chemistry

Client Sample ID: **EFC-4SD**

Lab Sample ID: 460-167587-5 Date Sampled: 10/24/2018 1035
Client Matrix: Solid % Moisture: 44.1 Date Received: 10/24/2018 1514

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
TOC Result 1	25800		mg/Kg	123	179	1.0	Lloyd Kahn
Analysis Batch: 460-563124	Analysis Date: 10/25/2018 1435						DryWt Corrected: Y
Percent Moisture	44.1	J	%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-563658	Analysis Date: 10/27/2018 1126						DryWt Corrected: N
Percent Solids	55.9	J	%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-563658	Analysis Date: 10/27/2018 1126						DryWt Corrected: N

AK 12/04/2018

Client: Advanced GeoServices Corporation Job Number: 460-167587-1

General Chemistry

Client Sample ID: EFC-3S

Lab Sample ID: 460-167587-6 Date Sampled: 10/24/2018 1050
Client Matrix: Solid % Moisture: 49.1 Date Received: 10/24/2018 1514

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
TOC Result 1	27900		mg/Kg	135	196	1.0	Lloyd Kahn
Analysis Batch: 460-563124	Analysis Date: 10/25/2018 1443						DryWt Corrected: Y
Percent Moisture	49.1		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-563658	Analysis Date: 10/27/2018 1126						DryWt Corrected: N
Percent Solids	50.9		%	1.0	1.0	1.0	Moisture
Analysis Batch: 460-563658	Analysis Date: 10/27/2018 1126						DryWt Corrected: N

AKG 12/04/2018

Client: Advanced GeoServices Corporation Job Number: 460-167587-1

General Chemistry

Client Sample ID: **EB-1-102418**

Lab Sample ID: 460-167587-7EB
Client Matrix: Water

Date Sampled: 10/24/2018 1205
Date Received: 10/24/2018 1514

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Total Organic Carbon	1.0 ~~0.58~~ U J		mg/L	0.34	1.0	1.0	9060A

Analysis Batch: 460-564030 Analysis Date: 10/26/2018 1736

AKG 12/04/2018

HOLDING TIMES
WC

Site Name: **Marathon** **Wet Chemistry**

Lab ID	Sample ID	Matrix	Analyte	Sample Date	Date Analyzed	Analysis Hold Time (days)	Days to Analysis	Qualify
460-167587-01	EFC-1S	Sediment	Percent Moisture	10/24/2018	10/27/2018	7	3	
460-167587-02	EFC-2S	Sediment	Percent Moisture	10/24/2018	10/27/2018	7	3	
460-167587-03	EFC-5S	Sediment	Percent Moisture	10/24/2018	10/27/2018	7	3	
460-167587-04	EFC-4S	Sediment	Percent Moisture	10/24/2018	10/27/2018	7	3	
460-167587-05	EFC-4SD	Sediment	Percent Moisture	10/24/2018	10/27/2018	7	3	
460-167587-06	EFC-3S	Sediment	Percent Moisture	10/24/2018	10/27/2018	7	3	
460-167587-01	EFC-1S	Sediment	Percent Solids	10/24/2018	10/27/2018	7	3	
460-167587-02	EFC-2S	Sediment	Percent Solids	10/24/2018	10/27/2018	7	3	
460-167587-03	EFC-5S	Sediment	Percent Solids	10/24/2018	10/27/2018	7	3	
460-167587-04	EFC-4S	Sediment	Percent Solids	10/24/2018	10/27/2018	7	3	
460-167587-05	EFC-4SD	Sediment	Percent Solids	10/24/2018	10/27/2018	7	3	
460-167587-06	EFC-3S	Sediment	Percent Solids	10/24/2018	10/27/2018	7	3	
460-167587-01	EFC-1S	Sediment	Total Organic Carbon	10/24/2018	10/25/2018	14	1	
460-167587-02	EFC-2S	Sediment	Total Organic Carbon	10/24/2018	10/25/2018	14	1	
460-167587-03	EFC-5S	Sediment	Total Organic Carbon	10/24/2018	10/25/2018	14	1	
460-167587-04	EFC-4S	Sediment	Total Organic Carbon	10/24/2018	10/25/2018	14	1	
460-167587-05	EFC-4SD	Sediment	Total Organic Carbon	10/24/2018	10/25/2018	14	1	
460-167587-06	EFC-3S	Sediment	Total Organic Carbon	10/24/2018	10/25/2018	14	1	
460-167587-07	EB-1-102418	Aqueous	Total Organic Carbon	10/24/2018	10/26/2018	28	2	

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12/04/2018

Blank ID	Analyte	Blank Conc	Blank*5	Units	Lab ID	Sample ID	Sample Conc	RL	Units	Qualify*	Qualify**
EB-1-102418	Total Organic Carbon	0.415	2.08	mg/L	460-167587-07	EB-1-102418	0.58	1	mg/L	*	

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12/04/2018

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica Edison Job No.: 460-167587-1

SDG No.:

Analyst: AJP Batch Start Date: 10/26/2018

Reporting Units: mg/L Analytical Batch No.: 564030

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
1	ICV	11:42	Total Organic Carbon	49.16	50.0	98	90-110		WTtocSP2_00034
2	ICB	12:07	Total Organic Carbon	0.34				U	
13	CCV	16:49	Total Organic Carbon	49.96	50.0	100	90-110		WTtocSP2_00034
14	CCB	17:13	Total Organic Carbon	0.415				J	
19	CCV	19:11	Total Organic Carbon	49.98	50.0	100	90-110		WTtocSP2_00034
20	CCB	19:35	Total Organic Carbon	0.372				J	

CCB > MDL. associated batched samples include EB-1-102418. Sample concentration < RL (U).

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

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FORM II-IN

460-167587_Field Duplicate
WC

Site Name:	**Marathon**	**Laboratory:**	**Test America - Edison**
Project Number:	**NY95-219**	**Matrix:**	**Sediment**

Sample ID	Analyte	Units	Result	Q	RL	RPD	Qualify
EFC-4S	Percent Moisture	%	21.4		1		
EFC-4SD	Percent Moisture	%	44.1		1	69.31	yes

Sample ID	Analyte	Units	Result	Q	RL	RPD	Qualify
EFC-4S	Percent Solids	%	78.6		1		
EFC-4SD	Percent Solids	%	55.9		1	33.75	no

Sample ID	Analyte	Units	Result	Q	RL	RPD	Qualify
EFC-4S	Total Organic Carbon	mg/Kg	20300		127		
EFC-4SD	Total Organic Carbon	mg/Kg	25800		179	23.86	no

Duplicate Criteria: Aqueous matrices <30 % RPD or < ± 1*RL, Soil/Solid matrices <40 %RPD or < ± 2*RL.

*** - Denotes %RPD or difference outside criteria.**

NA - Duplicate relative percent difference or difference cannot be calculated.

U / ND - Not detected.

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12/04/2018

Client: Advanced GeoServices Corporation Job Number: 460-167587-1

Duplicate - Batch: 460-563653

Method: Moisture
Preparation: N/A

Lab Sample ID:	460-167587-2	Analysis Batch:	460-563653	Instrument ID:	No Equipment Assigned
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	10/27/2018 1059	Units:	%	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Percent Moisture	63.2	66.5	4	20	
Percent Solids	36.8	33.5	8	20	

Duplicate - Batch: 460-563653

Method: Moisture
Preparation: N/A

Lab Sample ID:	460-167587-4	Analysis Batch:	460-563653	Instrument ID:	No Equipment Assigned
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	10/27/2018 1059	Units:	%	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Percent Moisture	21.4	46.4	74	20	F3
Percent Solids	78.6	53.6	38	20	F3

RPD > 20%, associated batched samples include EFC-1S, EFC-2S, EFC-5S and EFC-4S. Parent sample EFC-4S (J).

AK
12/04/2018

Client: Advanced GeoServices Corporation Job Number: 460-167587-1

Duplicate - Batch: 460-563658

Method: Moisture
Preparation: N/A

Lab Sample ID:	460-167596-D-5 DU	Analysis Batch:	460-563658	Instrument ID:	No Equipment Assigned
Client Matrix:	Solid	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	10/27/2018 1126	Units:	%	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Percent Moisture	8.9	6.0	39	20	F3
Percent Solids	91.1	94.0	3	20	

RPD > 20%, associated batched samples include EFC-4SD and EFC-3S. Parent sample not project specific.

12/04/2018

APPENDIX B

DATA VALIDATION REPORT

OF

GROUNDWATER SAMPLES

COLLECTED ON DECEMBER 12-17, 2018

FOR

ORGANIC ANALYSES

Laboratory Case Number 460-171966

PREPARED FOR:

GOULD ELECTRONICS INC.
MARATHON SITE
COLD SPRING, NEW YORK

PREPARED BY:

ADVANCED GEOSERVICES CORP.
WEST CHESTER, PENNSYLVANIA

January 3, 2019
Project Number NY 95-219-03

DATA VALIDATION REPORT
ORGANIC COMPOUNDS

INTRODUCTION

This data validation report addresses the organic results from the groundwater samples collected from the Marathon Site monitoring wells on December 12-17, 2018 in Cold Spring, New York. Samples were analyzed by TestAmerica in Edison, NJ. The samples were analyzed for volatile organic compounds (VOCs) by USEPA *Test Methods for Evaluating Solid Waste Physical/Chemical Methods* (SW-846) Method 8260C. The sample results were reported under TestAmerica Case Number 460-171966.

The qualified analytical results are presented on the data summary table. The data summary table lists both non-detected and detected results. Support documentation summarizing the specifics of this review is presented at the end of this report.

VOLATILE ORGANIC COMPOUNDS

Nineteen (19) groundwater samples, two (2) field duplicate samples, one (1) equipment blank, and one (1) trip blank sample were collected and analyzed for VOCs by USEPA SW-846 Method 8260C.

This organic review has been performed with guidance from the USEPA "National Functional Guidelines for Organic Superfund Methods Data Review, January 2017. The findings presented in this report are based upon a review of all data supplied by the laboratory. The information examined consists of sample results, analytical holding times, initial and continuing calibrations, gas chromatographic/mass spectrometric (GC/MS) tunes, blank analysis results, matrix spike/matrix spike duplicate (MS/MSD) recoveries and relative percent differences (RPDs), laboratory control sample (LCS) recoveries and relative percent differences (RPDs), surrogate spike recoveries, standard areas and retention times and target compound identification.

The holding times were met for all samples. All GC/MS tunes for the target analytes were within method criteria. All analytes and system monitoring compounds relative response factors (RRF) and percent differences (%D) were within the National Functional Guidelines criteria for the initial and continuing calibrations, except those addressed in the “QUALIFIER” section. The trip blank, equipment blank and method blanks were free of contamination. All volatile system monitoring compound recoveries and internal standard areas were within acceptance criteria. All detected compounds met the relative retention time and mass spectral identification criteria. Samples IW-7 / IW-7D and OSMW-01/OSMW-01D were field duplicates. The field duplicate results were precise. The LCS recoveries and the MS and MSD recoveries were within acceptance criteria.

QUALIFIER

460-171966

Continuing Calibration

- CCVIS 460-578474/2; Chloromethane (58.8%) and Bromomethane (-47.8%) had a %D greater than 30%. And 1,1,2,2-Tetrachloroethane (30.5%) had a %D greater than 25%. The associated samples included VP-1, VP-2, VP-3, VP-7, VP-8, VP-11, VP-10, ASMP-1, VP-9, IW-8, IW-7, IW-7D, MB-3, MW-4, EB-1-121318 and IW-6. The sample result was qualified as estimated (UJ).
- CCVIS 460-578579/2; Chloromethane (74.7%) and Bromomethane (-30.4) had a %D greater than 30%. The associated samples included MW-7S, IW-9, Trip Blank, OSMW-01, OSMW-01D, OSMW-02 and OSMW-03. The sample result was qualified as estimated (UJ).

SUMMARY

The results are acceptable as qualified.

QUALIFIER CODES

U - Denotes the compound or analyte was not detected at or above the associated detection limit.

J - Denotes an estimated value or the result is below the quantitation limit.

UJ - Denotes an estimated detection or quantitation limit.

R - Denotes a rejected result. The analyte may or may not be present.

Data review was performed by an experienced quality assurance scientist independent of the analytical laboratory.

This is to certify that I have examined the analytical data and based on the information provided to me by the laboratory, in my professional judgment the data are acceptable for use except where qualified with qualifiers that modify the usefulness of those individual values.

Quality Assurance Scientist — Date: 1/17/2019

Quality Assurance Manager — Date: 1/17/2019

TABLES

MARATHON
2018 Semi-Annual Groundwater, 12/12-17/2018
TestAmerica# 460-171966, Project# NY95-219

Sample Location		VP-1			VP-2			VP-3			VP-7			VP-8			VP-11			VP-10			ASMP-1			VP-9			IW-8			IW-7			IW-7D		
Lab ID		460-171966-01			460-171966-02			460-171966-03			460-171966-04			460-171966-05			460-171966-06			460-171966-07			460-171966-08			460-171966-09			460-171966-10			460-171966-11			460-171966-12		
Sample Date		12/12/2018			12/12/2018			12/12/2018			12/12/2018			12/13/2018			12/13/2018			12/13/2018			12/13/2018			12/13/2018			12/13/2018			12/13/2018			12/13/2018		
Matrix		Groundwater			Groundwater			Groundwater			Groundwater			Groundwater			Groundwater			Groundwater			Groundwater			Groundwater			Groundwater			Groundwater			Groundwater		
Remarks																																			FD of IW-7		
Parameter	**Units**	**Result**	**Q**	**RL**	**Result**	**Q**	**RL**	**Result**	**Q**	**RL**	**Result**	**Q**	**RL**	**Result**	**Q**	**RL**	**Result**	**Q**	**RL**	**Result**	**Q**	**RL**	**Result**	**Q**	**RL**	**Result**	**Q**	**RL**	**Result**	**Q**	**RL**	**Result**	**Q**	**RL**	**Result**	**Q**	**RL**
Volatiles																																					
1,1,1-Trichloroethane	ug/L		U	1		U	1	0.38	J	1		U	1	0.53	J	1		U	1	0.86	J	1	1.2		1	1.3		1	1.3		1	0.72	J	1	0.62	J	1
1,1,2,2-Tetrachloroethane	ug/L		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1
1,1,2-Trichloroethane	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
1,1-Dichloroethane	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
1,1-Dichloroethene	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
1,2-Dichloroethane	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
1,2-Dichloropropane	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
2-Butanone	ug/L		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5
2-Hexanone	ug/L		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5
4-Methyl-2-pentanone	ug/L		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5
Acetone	ug/L		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5
Benzene	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Bromodichloromethane	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Bromoform	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Bromomethane	ug/L		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1
Carbon disulfide	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Carbon tetrachloride	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Chlorobenzene	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Chloroethane	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Chloroform	ug/L		U	1		U	1	2.4		1	1.7		1	1.4		1	4		1	1		1	0.64	J	1	0.35	J	1	0.68	J	1	1.3		1	1.2		1
Chloromethane	ug/L		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1
cis-1,2-Dichloroethene	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
cis-1,3-Dichloropropene	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Dibromochloromethane	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Ethylbenzene	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Methylene Chloride	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Styrene	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Tetrachloroethene	ug/L		U	1		U	1	16		1	2.5		1	1.4		1	6.7		1	1.3		1	13		1	0.7	J	1	4.7		1	0.51	J	1	0.45	J	1
Toluene	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	
trans-1,2-Dichloroethene	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	
trans-1,3-Dichloropropene	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	
Trichloroethene	ug/L		U	1	3.9		1	90		1	22		1	11		1	29		1	21		1	68		1	8		1	28		1	15		1	14		1
Vinyl chloride	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1	
Xylenes, Total	ug/L		U	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2	

QA Scientist Amy Graham

Date 1/15/2019

MARATHON
2018 Semi-Annual Groundwater, 12/12-17/2018
TestAmerica# 460-171966, Project# NY95-219

Sample Location		MB-3			MW-4			EB-1-121318			IW-6			MW-7S			IW-9			Trip Blank			OSMW-01			OSMW-01D			OSMW-02			OSMW-03		
Lab ID		460-171966-13			460-171966-14			460-171966-15			460-171966-16			460-171966-17			460-171966-18			460-171966-19			460-171966-20			460-171966-21			460-171966-22			460-171966-23		
Sample Date		12/13/2018			12/13/2018			12/13/2018			12/14/2018			12/17/2018			12/17/2018			12/12/2018			12/14/2018			12/14/2018			12/14/2018			12/14/2018		
Matrix		Groundwater			Groundwater			Aqueous			Groundwater			Groundwater			Groundwater			Aqueous			Groundwater			Groundwater			Groundwater			Groundwater		
Remarks								Equipment Blank												Trip Blank						FD of OSMW-01								
Parameter	**Units**	**Result**	**Q**	**RL**	**Result**	**Q**	**RL**	**Result**	**Q**	**RL**	**Result**	**Q**	**RL**	**Result**	**Q**	**RL**	**Result**	**Q**	**RL**	**Result**	**Q**	**RL**	**Result**	**Q**	**RL**	**Result**	**Q**	**RL**	**Result**	**Q**	**RL**	**Result**	**Q**	**RL**
Volatiles																																		
1,1,1-Trichloroethane	ug/L	0.97	J	1	0.88	J	1		U	1	2		1		U	1	1.2		1		U	1	0.43	J	1	0.4	J	1		U	1	0.96	J	1
1,1,2,2-Tetrachloroethane	ug/L		UJ	1		UJ	1		UJ	1		UJ	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
1,1,2-Trichloroethane	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
1,1-Dichloroethane	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
1,1-Dichloroethene	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
1,2-Dichloroethane	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
1,2-Dichloropropane	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
2-Butanone	ug/L		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5
2-Hexanone	ug/L		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5
4-Methyl-2-pentanone	ug/L		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5
Acetone	ug/L		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5		U	5
Benzene	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Bromodichloromethane	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Bromoform	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Bromomethane	ug/L		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1
Carbon disulfide	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Carbon tetrachloride	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Chlorobenzene	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Chloroethane	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Chloroform	ug/L	0.49	J	1	0.63	J	1		U	1	0.67	J	1	4.8		1	0.46	J	1		U	1		U	1		U	1		U	1	0.77	J	1
Chloromethane	ug/L		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1		UJ	1
cis-1,2-Dichloroethene	ug/L	1.7		1		U	1		U	1	0.54	J	1		U	1	2		1		U	1		U	1		U	1		U	1		U	1
cis-1,3-Dichloropropene	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Dibromochloromethane	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Ethylbenzene	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Methylene Chloride	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Styrene	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Tetrachloroethene	ug/L	1.6		1	1.6		1		U	1	0.8	J	1	4		1	7.4		1		U	1		U	1		U	1		U	1		U	1
Toluene	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
trans-1,2-Dichloroethene	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
trans-1,3-Dichloropropene	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Trichloroethene	ug/L	22		1	30		1		U	1	82		1	52		1	48		1		U	1	0.51	J	1	0.31	J	1		U	1	7.7		1
Vinyl chloride	ug/L		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1		U	1
Xylenes, Total	ug/L		U	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2		U	2

QA Scientist Amy Graham

Date

SUPPORT DOCUMENTATION
ORGANICS

VOLATILES DATA VALIDATION SUMMARY

Site Name:	Marathon	Laboratory:	Test America - Edison
Project Number:	NY95-219	Case/Order No.:	460-171966
Sampling Date(s):	12/12-17/2018		

Compound List: Volatiles

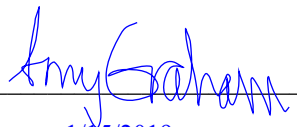
Method: 8260C

The following table indicates the data validation criteria examined, any problems identified, and the QA action applied.

Data Validation Criteria:	Accept	FYI	Qualify	Comments
Holding Times	X			
GC/MS Tuning	X			
Initial Calibrations/ICV		X		No ICV analyzed
Continuing Calibrations			X	%D > 30%
Blank Analysis	X			
System Monitoring/Surrogate	X			
Field Duplicate Analysis	X			OSMW-01D & OSMW-01 and IW-7D & IW-7
Matrix Spike Analysis (MS/MSD)		X		MS/MSD Recoveries
Laboratory Control Sample Analysis (LCS)		X		LCS Recovery
Internal Standard Areas/RT	X			
Target Compound Identification	X			
TIC Identification				NA
Overall Assessment of Data	X			
Other:				

General Comments: Cooler temp: 3.5°C

Accept - No qualification required.
FYI - For your information only, no qualification necessary.
Qualify - Qualify as rejected, estimated or biased.
NR - Not Reviewed
NA - Not Applicable

QA Scientist 

Date 1/15/2019

Client: Advanced GeoServices Corporation Job Number: 460-171966-1

Client Sample ID: VP-1

Lab Sample ID: 460-171966-1 Date Sampled: 12/12/2018 1449
Client Matrix: Water Date Received: 12/18/2018 1115

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-578474	Instrument ID:	CVOAMS12
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	O48826.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	12/25/2018 0027			Final Weight/Volume:	5 mL
Prep Date:	12/25/2018 0027				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	0.24	U	0.24	1.0
1,1,2,2-Tetrachloroethane	0.37	UJ*	0.37	1.0
1,1,2-Trichloroethane	0.43	U	0.43	1.0
1,1-Dichloroethane	0.26	U	0.26	1.0
1,1-Dichloroethene	0.12	U	0.12	1.0
1,2-Dichloroethane	0.43	U	0.43	1.0
1,2-Dichloropropane	0.35	U	0.35	1.0
2-Butanone	1.9	U	1.9	5.0
2-Hexanone	2.9	U	2.9	5.0
4-Methyl-2-pentanone	2.7	U	2.7	5.0
Acetone	5.0	U	5.0	5.0
Benzene	0.43	U	0.43	1.0
Bromodichloromethane	0.34	U	0.34	1.0
Bromoform	0.54	U	0.54	1.0
Bromomethane	1.0	UJ	1.0	1.0
Carbon disulfide	0.16	U	0.16	1.0
Carbon tetrachloride	0.21	U	0.21	1.0
Chlorobenzene	0.38	U	0.38	1.0
Chloroethane	0.32	U	0.32	1.0
Chloroform	0.33	U	0.33	1.0
Chloromethane	0.14	UJ	0.14	1.0
cis-1,2-Dichloroethene	0.22	U	0.22	1.0
cis-1,3-Dichloropropene	0.46	U	0.46	1.0
Dibromochloromethane	0.28	U	0.28	1.0
Ethylbenzene	0.30	U	0.30	1.0
Methylene Chloride	0.32	U	0.32	1.0
Styrene	0.42	U	0.42	1.0
Tetrachloroethene	0.25	U	0.25	1.0
Toluene	0.38	U	0.38	1.0
trans-1,2-Dichloroethene	0.24	U	0.24	1.0
trans-1,3-Dichloropropene	0.49	U	0.49	1.0
Trichloroethene	0.31	U	0.31	1.0
Vinyl chloride	0.17	U	0.17	1.0
Xylenes, Total	0.65	U	0.65	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	112		74 - 132
Bromofluorobenzene	87		77 - 124
Dibromofluoromethane (Surr)	100		72 - 131
Toluene-d8 (Surr)	103		80 - 120

01/15/2019

Client: Advanced GeoServices Corporation Job Number: 460-171966-1

Client Sample ID: VP-2

Lab Sample ID: 460-171966-2 Date Sampled: 12/12/2018 1537
Client Matrix: Water Date Received: 12/18/2018 1115

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-578474	Instrument ID:	CVOAMS12
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	O48827.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	12/25/2018 0054			Final Weight/Volume:	5 mL
Prep Date:	12/25/2018 0054				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	0.24	U	0.24	1.0
1,1,2,2-Tetrachloroethane	0.37	U *J	0.37	1.0
1,1,2-Trichloroethane	0.43	U	0.43	1.0
1,1-Dichloroethane	0.26	U	0.26	1.0
1,1-Dichloroethene	0.12	U	0.12	1.0
1,2-Dichloroethane	0.43	U	0.43	1.0
1,2-Dichloropropane	0.35	U	0.35	1.0
2-Butanone	1.9	U	1.9	5.0
2-Hexanone	2.9	U	2.9	5.0
4-Methyl-2-pentanone	2.7	U	2.7	5.0
Acetone	5.0	U	5.0	5.0
Benzene	0.43	U	0.43	1.0
Bromodichloromethane	0.34	U	0.34	1.0
Bromoform	0.54	U	0.54	1.0
Bromomethane	1.0	U J	1.0	1.0
Carbon disulfide	0.16	U	0.16	1.0
Carbon tetrachloride	0.21	U	0.21	1.0
Chlorobenzene	0.38	U	0.38	1.0
Chloroethane	0.32	U	0.32	1.0
Chloroform	0.33	U	0.33	1.0
Chloromethane	0.14	U *J	0.14	1.0
cis-1,2-Dichloroethene	0.22	U	0.22	1.0
cis-1,3-Dichloropropene	0.46	U	0.46	1.0
Dibromochloromethane	0.28	U	0.28	1.0
Ethylbenzene	0.30	U	0.30	1.0
Methylene Chloride	0.32	U	0.32	1.0
Styrene	0.42	U	0.42	1.0
Tetrachloroethene	0.25	U	0.25	1.0
Toluene	0.38	U	0.38	1.0
trans-1,2-Dichloroethene	0.24	U	0.24	1.0
trans-1,3-Dichloropropene	0.49	U	0.49	1.0
Trichloroethene	3.9		0.31	1.0
Vinyl chloride	0.17	U	0.17	1.0
Xylenes, Total	0.65	U	0.65	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	115		74 - 132
Bromofluorobenzene	88		77 - 124
Dibromofluoromethane (Surr)	100		72 - 131
Toluene-d8 (Surr)	105		80 - 120

AKG 01/15/2019

Client: Advanced GeoServices Corporation Job Number: 460-171966-1

Client Sample ID: VP-3

Lab Sample ID: 460-171966-3 Date Sampled: 12/12/2018 1622
Client Matrix: Water Date Received: 12/18/2018 1115

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-578474	Instrument ID:	CVOAMS12
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	O48828.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	12/25/2018 0120			Final Weight/Volume:	5 mL
Prep Date:	12/25/2018 0120				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	0.38	J	0.24	1.0
1,1,2,2-Tetrachloroethane	0.37	U * J	0.37	1.0
1,1,2-Trichloroethane	0.43	U	0.43	1.0
1,1-Dichloroethane	0.26	U	0.26	1.0
1,1-Dichloroethene	0.12	U	0.12	1.0
1,2-Dichloroethane	0.43	U	0.43	1.0
1,2-Dichloropropane	0.35	U	0.35	1.0
2-Butanone	1.9	U	1.9	5.0
2-Hexanone	2.9	U	2.9	5.0
4-Methyl-2-pentanone	2.7	U	2.7	5.0
Acetone	5.0	U	5.0	5.0
Benzene	0.43	U	0.43	1.0
Bromodichloromethane	0.34	U	0.34	1.0
Bromoform	0.54	U	0.54	1.0
Bromomethane	1.0	U J	1.0	1.0
Carbon disulfide	0.16	U	0.16	1.0
Carbon tetrachloride	0.21	U	0.21	1.0
Chlorobenzene	0.38	U	0.38	1.0
Chloroethane	0.32	U	0.32	1.0
Chloroform	2.4		0.33	1.0
Chloromethane	0.14	U * J	0.14	1.0
cis-1,2-Dichloroethene	0.22	U	0.22	1.0
cis-1,3-Dichloropropene	0.46	U	0.46	1.0
Dibromochloromethane	0.28	U	0.28	1.0
Ethylbenzene	0.30	U	0.30	1.0
Methylene Chloride	0.32	U	0.32	1.0
Styrene	0.42	U	0.42	1.0
Tetrachloroethene	16		0.25	1.0
Toluene	0.38	U	0.38	1.0
trans-1,2-Dichloroethene	0.24	U	0.24	1.0
trans-1,3-Dichloropropene	0.49	U	0.49	1.0
Trichloroethene	90		0.31	1.0
Vinyl chloride	0.17	U	0.17	1.0
Xylenes, Total	0.65	U	0.65	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	111		74 - 132
Bromofluorobenzene	85		77 - 124
Dibromofluoromethane (Surr)	97		72 - 131
Toluene-d8 (Surr)	101		80 - 120

AKG 01/15/2019

Client: Advanced GeoServices Corporation Job Number: 460-171966-1

Client Sample ID: VP-7

Lab Sample ID: 460-171966-4 Date Sampled: 12/12/2018 1708
Client Matrix: Water Date Received: 12/18/2018 1115

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-578474	Instrument ID:	CVOAMS12
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	O48829.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	12/25/2018 0147			Final Weight/Volume:	5 mL
Prep Date:	12/25/2018 0147				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	0.24	U	0.24	1.0
1,1,2,2-Tetrachloroethane	0.37	U J	0.37	1.0
1,1,2-Trichloroethane	0.43	U	0.43	1.0
1,1-Dichloroethane	0.26	U	0.26	1.0
1,1-Dichloroethene	0.12	U	0.12	1.0
1,2-Dichloroethane	0.43	U	0.43	1.0
1,2-Dichloropropane	0.35	U	0.35	1.0
2-Butanone	1.9	U	1.9	5.0
2-Hexanone	2.9	U	2.9	5.0
4-Methyl-2-pentanone	2.7	U	2.7	5.0
Acetone	5.0	U	5.0	5.0
Benzene	0.43	U	0.43	1.0
Bromodichloromethane	0.34	U	0.34	1.0
Bromoform	0.54	U	0.54	1.0
Bromomethane	1.0	UJ	1.0	1.0
Carbon disulfide	0.16	U	0.16	1.0
Carbon tetrachloride	0.21	U	0.21	1.0
Chlorobenzene	0.38	U	0.38	1.0
Chloroethane	0.32	U	0.32	1.0
Chloroform	1.7		0.33	1.0
Chloromethane	0.14	U J	0.14	1.0
cis-1,2-Dichloroethene	0.22	U	0.22	1.0
cis-1,3-Dichloropropene	0.46	U	0.46	1.0
Dibromochloromethane	0.28	U	0.28	1.0
Ethylbenzene	0.30	U	0.30	1.0
Methylene Chloride	0.32	U	0.32	1.0
Styrene	0.42	U	0.42	1.0
Tetrachloroethene	2.5		0.25	1.0
Toluene	0.38	U	0.38	1.0
trans-1,2-Dichloroethene	0.24	U	0.24	1.0
trans-1,3-Dichloropropene	0.49	U	0.49	1.0
Trichloroethene	22		0.31	1.0
Vinyl chloride	0.17	U	0.17	1.0
Xylenes, Total	0.65	U	0.65	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	113		74 - 132
Bromofluorobenzene	85		77 - 124
Dibromofluoromethane (Surr)	100		72 - 131
Toluene-d8 (Surr)	102		80 - 120

AKG 01/15/2019

Client: Advanced GeoServices Corporation Job Number: 460-171966-1

Client Sample ID: VP-8

Lab Sample ID: 460-171966-5 Date Sampled: 12/13/2018 0907
Client Matrix: Water Date Received: 12/18/2018 1115

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-578474	Instrument ID:	CVOAMS12
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	O48830.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	12/25/2018 0214			Final Weight/Volume:	5 mL
Prep Date:	12/25/2018 0214				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	0.53	J	0.24	1.0
1,1,2,2-Tetrachloroethane	0.37	UJ*	0.37	1.0
1,1,2-Trichloroethane	0.43	U	0.43	1.0
1,1-Dichloroethane	0.26	U	0.26	1.0
1,1-Dichloroethene	0.12	U	0.12	1.0
1,2-Dichloroethane	0.43	U	0.43	1.0
1,2-Dichloropropane	0.35	U	0.35	1.0
2-Butanone	1.9	U	1.9	5.0
2-Hexanone	2.9	U	2.9	5.0
4-Methyl-2-pentanone	2.7	U	2.7	5.0
Acetone	5.0	U	5.0	5.0
Benzene	0.43	U	0.43	1.0
Bromodichloromethane	0.34	U	0.34	1.0
Bromoform	0.54	U	0.54	1.0
Bromomethane	1.0	UJ	1.0	1.0
Carbon disulfide	0.16	U	0.16	1.0
Carbon tetrachloride	0.21	U	0.21	1.0
Chlorobenzene	0.38	U	0.38	1.0
Chloroethane	0.32	U	0.32	1.0
Chloroform	1.4		0.33	1.0
Chloromethane	0.14	UJ*	0.14	1.0
cis-1,2-Dichloroethene	0.22	U	0.22	1.0
cis-1,3-Dichloropropene	0.46	U	0.46	1.0
Dibromochloromethane	0.28	U	0.28	1.0
Ethylbenzene	0.30	U	0.30	1.0
Methylene Chloride	0.32	U	0.32	1.0
Styrene	0.42	U	0.42	1.0
Tetrachloroethene	1.4		0.25	1.0
Toluene	0.38	U	0.38	1.0
trans-1,2-Dichloroethene	0.24	U	0.24	1.0
trans-1,3-Dichloropropene	0.49	U	0.49	1.0
Trichloroethene	11		0.31	1.0
Vinyl chloride	0.17	U	0.17	1.0
Xylenes, Total	0.65	U	0.65	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	111		74 - 132
Bromofluorobenzene	86		77 - 124
Dibromofluoromethane (Surr)	99		72 - 131
Toluene-d8 (Surr)	102		80 - 120

AKG 01/15/2019

Client: Advanced GeoServices Corporation Job Number: 460-171966-1

Client Sample ID: VP-11

Lab Sample ID: 460-171966-6 Date Sampled: 12/13/2018 1000
Client Matrix: Water Date Received: 12/18/2018 1115

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-578474	Instrument ID:	CVOAMS12
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	O48831.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	12/25/2018 0240			Final Weight/Volume:	5 mL
Prep Date:	12/25/2018 0240				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	0.24	U	0.24	1.0
1,1,2,2-Tetrachloroethane	0.37	U *J	0.37	1.0
1,1,2-Trichloroethane	0.43	U	0.43	1.0
1,1-Dichloroethane	0.26	U	0.26	1.0
1,1-Dichloroethene	0.12	U	0.12	1.0
1,2-Dichloroethane	0.43	U	0.43	1.0
1,2-Dichloropropane	0.35	U	0.35	1.0
2-Butanone	1.9	U	1.9	5.0
2-Hexanone	2.9	U	2.9	5.0
4-Methyl-2-pentanone	2.7	U	2.7	5.0
Acetone	5.0	U	5.0	5.0
Benzene	0.43	U	0.43	1.0
Bromodichloromethane	0.34	U	0.34	1.0
Bromoform	0.54	U	0.54	1.0
Bromomethane	1.0	UJ	1.0	1.0
Carbon disulfide	0.16	U	0.16	1.0
Carbon tetrachloride	0.21	U	0.21	1.0
Chlorobenzene	0.38	U	0.38	1.0
Chloroethane	0.32	U	0.32	1.0
Chloroform	4.0		0.33	1.0
Chloromethane	0.14	U *J	0.14	1.0
cis-1,2-Dichloroethene	0.22	U	0.22	1.0
cis-1,3-Dichloropropene	0.46	U	0.46	1.0
Dibromochloromethane	0.28	U	0.28	1.0
Ethylbenzene	0.30	U	0.30	1.0
Methylene Chloride	0.32	U	0.32	1.0
Styrene	0.42	U	0.42	1.0
Tetrachloroethene	6.7		0.25	1.0
Toluene	0.38	U	0.38	1.0
trans-1,2-Dichloroethene	0.24	U	0.24	1.0
trans-1,3-Dichloropropene	0.49	U	0.49	1.0
Trichloroethene	29		0.31	1.0
Vinyl chloride	0.17	U	0.17	1.0
Xylenes, Total	0.65	U	0.65	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	110		74 - 132
Bromofluorobenzene	86		77 - 124
Dibromofluoromethane (Surr)	98		72 - 131
Toluene-d8 (Surr)	101		80 - 120

AKG 01/15/2019

Client: Advanced GeoServices Corporation Job Number: 460-171966-1

Client Sample ID: VP-10

Lab Sample ID: 460-171966-7 Date Sampled: 12/13/2018 1053
Client Matrix: Water Date Received: 12/18/2018 1115

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-578474	Instrument ID:	CVOAMS12
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	O48832.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	12/25/2018 0307			Final Weight/Volume:	5 mL
Prep Date:	12/25/2018 0307				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	0.86	J	0.24	1.0
1,1,2,2-Tetrachloroethane	0.37	U *J	0.37	1.0
1,1,2-Trichloroethane	0.43	U	0.43	1.0
1,1-Dichloroethane	0.26	U	0.26	1.0
1,1-Dichloroethene	0.12	U	0.12	1.0
1,2-Dichloroethane	0.43	U	0.43	1.0
1,2-Dichloropropane	0.35	U	0.35	1.0
2-Butanone	1.9	U	1.9	5.0
2-Hexanone	2.9	U	2.9	5.0
4-Methyl-2-pentanone	2.7	U	2.7	5.0
Acetone	5.0	U	5.0	5.0
Benzene	0.43	U	0.43	1.0
Bromodichloromethane	0.34	U	0.34	1.0
Bromoform	0.54	U	0.54	1.0
Bromomethane	1.0	U J	1.0	1.0
Carbon disulfide	0.16	U	0.16	1.0
Carbon tetrachloride	0.21	U	0.21	1.0
Chlorobenzene	0.38	U	0.38	1.0
Chloroethane	0.32	U	0.32	1.0
Chloroform	1.0		0.33	1.0
Chloromethane	0.14	U *J	0.14	1.0
cis-1,2-Dichloroethene	0.22	U	0.22	1.0
cis-1,3-Dichloropropene	0.46	U	0.46	1.0
Dibromochloromethane	0.28	U	0.28	1.0
Ethylbenzene	0.30	U	0.30	1.0
Methylene Chloride	0.32	U	0.32	1.0
Styrene	0.42	U	0.42	1.0
Tetrachloroethene	1.3		0.25	1.0
Toluene	0.38	U	0.38	1.0
trans-1,2-Dichloroethene	0.24	U	0.24	1.0
trans-1,3-Dichloropropene	0.49	U	0.49	1.0
Trichloroethene	21		0.31	1.0
Vinyl chloride	0.17	U	0.17	1.0
Xylenes, Total	0.65	U	0.65	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	112		74 - 132
Bromofluorobenzene	87		77 - 124
Dibromofluoromethane (Surr)	100		72 - 131
Toluene-d8 (Surr)	103		80 - 120

AKG 01/15/2019

Client: Advanced GeoServices Corporation Job Number: 460-171966-1

Client Sample ID: ASMP-1

Lab Sample ID: 460-171966-8 Date Sampled: 12/13/2018 1145
Client Matrix: Water Date Received: 12/18/2018 1115

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-578474	Instrument ID:	CVOAMS12
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	O48833.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	12/25/2018 0334			Final Weight/Volume:	5 mL
Prep Date:	12/25/2018 0334				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	1.2		0.24	1.0
1,1,2,2-Tetrachloroethane	0.37	U *J	0.37	1.0
1,1,2-Trichloroethane	0.43	U	0.43	1.0
1,1-Dichloroethane	0.26	U	0.26	1.0
1,1-Dichloroethene	0.12	U	0.12	1.0
1,2-Dichloroethane	0.43	U	0.43	1.0
1,2-Dichloropropane	0.35	U	0.35	1.0
2-Butanone	1.9	U	1.9	5.0
2-Hexanone	2.9	U	2.9	5.0
4-Methyl-2-pentanone	2.7	U	2.7	5.0
Acetone	5.0	U	5.0	5.0
Benzene	0.43	U	0.43	1.0
Bromodichloromethane	0.34	U	0.34	1.0
Bromoform	0.54	U	0.54	1.0
Bromomethane	1.0	UJ	1.0	1.0
Carbon disulfide	0.16	U	0.16	1.0
Carbon tetrachloride	0.21	U	0.21	1.0
Chlorobenzene	0.38	U	0.38	1.0
Chloroethane	0.32	U	0.32	1.0
Chloroform	0.64	J	0.33	1.0
Chloromethane	0.14	U *J	0.14	1.0
cis-1,2-Dichloroethene	0.22	U	0.22	1.0
cis-1,3-Dichloropropene	0.46	U	0.46	1.0
Dibromochloromethane	0.28	U	0.28	1.0
Ethylbenzene	0.30	U	0.30	1.0
Methylene Chloride	0.32	U	0.32	1.0
Styrene	0.42	U	0.42	1.0
Tetrachloroethene	13		0.25	1.0
Toluene	0.38	U	0.38	1.0
trans-1,2-Dichloroethene	0.24	U	0.24	1.0
trans-1,3-Dichloropropene	0.49	U	0.49	1.0
Trichloroethene	68		0.31	1.0
Vinyl chloride	0.17	U	0.17	1.0
Xylenes, Total	0.65	U	0.65	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	117		74 - 132
Bromofluorobenzene	87		77 - 124
Dibromofluoromethane (Surr)	101		72 - 131
Toluene-d8 (Surr)	105		80 - 120

AKG 01/15/2019

Client: Advanced GeoServices Corporation Job Number: 460-171966-1

Client Sample ID: VP-9

Lab Sample ID: 460-171966-9 Date Sampled: 12/13/2018 1241
Client Matrix: Water Date Received: 12/18/2018 1115

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-578474	Instrument ID:	CVOAMS12
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	O48834.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	12/25/2018 0400			Final Weight/Volume:	5 mL
Prep Date:	12/25/2018 0400				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	1.3		0.24	1.0
1,1,2,2-Tetrachloroethane	0.37	U J	0.37	1.0
1,1,2-Trichloroethane	0.43	U	0.43	1.0
1,1-Dichloroethane	0.26	U	0.26	1.0
1,1-Dichloroethene	0.12	U	0.12	1.0
1,2-Dichloroethane	0.43	U	0.43	1.0
1,2-Dichloropropane	0.35	U	0.35	1.0
2-Butanone	1.9	U	1.9	5.0
2-Hexanone	2.9	U	2.9	5.0
4-Methyl-2-pentanone	2.7	U	2.7	5.0
Acetone	5.0	U	5.0	5.0
Benzene	0.43	U	0.43	1.0
Bromodichloromethane	0.34	U	0.34	1.0
Bromoform	0.54	U	0.54	1.0
Bromomethane	1.0	U J	1.0	1.0
Carbon disulfide	0.16	U	0.16	1.0
Carbon tetrachloride	0.21	U	0.21	1.0
Chlorobenzene	0.38	U	0.38	1.0
Chloroethane	0.32	U	0.32	1.0
Chloroform	0.35	J	0.33	1.0
Chloromethane	0.14	U J	0.14	1.0
cis-1,2-Dichloroethene	0.22	U	0.22	1.0
cis-1,3-Dichloropropene	0.46	U	0.46	1.0
Dibromochloromethane	0.28	U	0.28	1.0
Ethylbenzene	0.30	U	0.30	1.0
Methylene Chloride	0.32	U	0.32	1.0
Styrene	0.42	U	0.42	1.0
Tetrachloroethene	0.70	J	0.25	1.0
Toluene	0.38	U	0.38	1.0
trans-1,2-Dichloroethene	0.24	U	0.24	1.0
trans-1,3-Dichloropropene	0.49	U	0.49	1.0
Trichloroethene	8.0		0.31	1.0
Vinyl chloride	0.17	U	0.17	1.0
Xylenes, Total	0.65	U	0.65	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	111		74 - 132
Bromofluorobenzene	86		77 - 124
Dibromofluoromethane (Surr)	98		72 - 131
Toluene-d8 (Surr)	102		80 - 120

01/15/2019

Client: Advanced GeoServices Corporation Job Number: 460-171966-1

Client Sample ID: IW-8

Lab Sample ID: 460-171966-10 Date Sampled: 12/13/2018 1352
Client Matrix: Water Date Received: 12/18/2018 1115

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-578474	Instrument ID:	CVOAMS12
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	O48835.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	12/25/2018 0427			Final Weight/Volume:	5 mL
Prep Date:	12/25/2018 0427				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	1.3		0.24	1.0
1,1,2,2-Tetrachloroethane	0.37	U J	0.37	1.0
1,1,2-Trichloroethane	0.43	U	0.43	1.0
1,1-Dichloroethane	0.26	U	0.26	1.0
1,1-Dichloroethene	0.12	U	0.12	1.0
1,2-Dichloroethane	0.43	U	0.43	1.0
1,2-Dichloropropane	0.35	U	0.35	1.0
2-Butanone	1.9	U	1.9	5.0
2-Hexanone	2.9	U	2.9	5.0
4-Methyl-2-pentanone	2.7	U	2.7	5.0
Acetone	5.0	U	5.0	5.0
Benzene	0.43	U	0.43	1.0
Bromodichloromethane	0.34	U	0.34	1.0
Bromoform	0.54	U	0.54	1.0
Bromomethane	1.0	UJ	1.0	1.0
Carbon disulfide	0.16	U	0.16	1.0
Carbon tetrachloride	0.21	U	0.21	1.0
Chlorobenzene	0.38	U	0.38	1.0
Chloroethane	0.32	U	0.32	1.0
Chloroform	0.68	J	0.33	1.0
Chloromethane	0.14	U J	0.14	1.0
cis-1,2-Dichloroethene	0.22	U	0.22	1.0
cis-1,3-Dichloropropene	0.46	U	0.46	1.0
Dibromochloromethane	0.28	U	0.28	1.0
Ethylbenzene	0.30	U	0.30	1.0
Methylene Chloride	0.32	U	0.32	1.0
Styrene	0.42	U	0.42	1.0
Tetrachloroethene	4.7		0.25	1.0
Toluene	0.38	U	0.38	1.0
trans-1,2-Dichloroethene	0.24	U	0.24	1.0
trans-1,3-Dichloropropene	0.49	U	0.49	1.0
Trichloroethene	28		0.31	1.0
Vinyl chloride	0.17	U	0.17	1.0
Xylenes, Total	0.65	U	0.65	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	112		74 - 132
Bromofluorobenzene	86		77 - 124
Dibromofluoromethane (Surr)	99		72 - 131
Toluene-d8 (Surr)	103		80 - 120

AKG 01/15/2019

Client: Advanced GeoServices Corporation Job Number: 460-171966-1

Client Sample ID: IW-7

Lab Sample ID: 460-171966-11 Date Sampled: 12/13/2018 1449
Client Matrix: Water Date Received: 12/18/2018 1115

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-578474	Instrument ID:	CVOAMS12
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	O48836.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	12/25/2018 0453			Final Weight/Volume:	5 mL
Prep Date:	12/25/2018 0453				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	0.72	J	0.24	1.0
1,1,2,2-Tetrachloroethane	0.37	U *J	0.37	1.0
1,1,2-Trichloroethane	0.43	U	0.43	1.0
1,1-Dichloroethane	0.26	U	0.26	1.0
1,1-Dichloroethene	0.12	U	0.12	1.0
1,2-Dichloroethane	0.43	U	0.43	1.0
1,2-Dichloropropane	0.35	U	0.35	1.0
2-Butanone	1.9	U	1.9	5.0
2-Hexanone	2.9	U	2.9	5.0
4-Methyl-2-pentanone	2.7	U	2.7	5.0
Acetone	5.0	U	5.0	5.0
Benzene	0.43	U	0.43	1.0
Bromodichloromethane	0.34	U	0.34	1.0
Bromoform	0.54	U	0.54	1.0
Bromomethane	1.0	UJ	1.0	1.0
Carbon disulfide	0.16	U	0.16	1.0
Carbon tetrachloride	0.21	U	0.21	1.0
Chlorobenzene	0.38	U	0.38	1.0
Chloroethane	0.32	U	0.32	1.0
Chloroform	1.3		0.33	1.0
Chloromethane	0.14	U *J	0.14	1.0
cis-1,2-Dichloroethene	0.22	U	0.22	1.0
cis-1,3-Dichloropropene	0.46	U	0.46	1.0
Dibromochloromethane	0.28	U	0.28	1.0
Ethylbenzene	0.30	U	0.30	1.0
Methylene Chloride	0.32	U	0.32	1.0
Styrene	0.42	U	0.42	1.0
Tetrachloroethene	0.51	J	0.25	1.0
Toluene	0.38	U	0.38	1.0
trans-1,2-Dichloroethene	0.24	U	0.24	1.0
trans-1,3-Dichloropropene	0.49	U	0.49	1.0
Trichloroethene	15		0.31	1.0
Vinyl chloride	0.17	U	0.17	1.0
Xylenes, Total	0.65	U	0.65	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	114		74 - 132
Bromofluorobenzene	86		77 - 124
Dibromofluoromethane (Surr)	99		72 - 131
Toluene-d8 (Surr)	103		80 - 120

AKG 01/15/2019

Client: Advanced GeoServices Corporation Job Number: 460-171966-1

Client Sample ID: IW-7D

Lab Sample ID: 460-171966-12 Date Sampled: 12/13/2018 1519
Client Matrix: Water Date Received: 12/18/2018 1115

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-578474	Instrument ID:	CVOAMS12
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	O48837.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	12/25/2018 0520			Final Weight/Volume:	5 mL
Prep Date:	12/25/2018 0520				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	0.62	J	0.24	1.0
1,1,2,2-Tetrachloroethane	0.37	U *J	0.37	1.0
1,1,2-Trichloroethane	0.43	U	0.43	1.0
1,1-Dichloroethane	0.26	U	0.26	1.0
1,1-Dichloroethene	0.12	U	0.12	1.0
1,2-Dichloroethane	0.43	U	0.43	1.0
1,2-Dichloropropane	0.35	U	0.35	1.0
2-Butanone	1.9	U	1.9	5.0
2-Hexanone	2.9	U	2.9	5.0
4-Methyl-2-pentanone	2.7	U	2.7	5.0
Acetone	5.0	U	5.0	5.0
Benzene	0.43	U	0.43	1.0
Bromodichloromethane	0.34	U	0.34	1.0
Bromoform	0.54	U	0.54	1.0
Bromomethane	1.0	U J	1.0	1.0
Carbon disulfide	0.16	U	0.16	1.0
Carbon tetrachloride	0.21	U	0.21	1.0
Chlorobenzene	0.38	U	0.38	1.0
Chloroethane	0.32	U	0.32	1.0
Chloroform	1.2		0.33	1.0
Chloromethane	0.14	U *J	0.14	1.0
cis-1,2-Dichloroethene	0.22	U	0.22	1.0
cis-1,3-Dichloropropene	0.46	U	0.46	1.0
Dibromochloromethane	0.28	U	0.28	1.0
Ethylbenzene	0.30	U	0.30	1.0
Methylene Chloride	0.32	U	0.32	1.0
Styrene	0.42	U	0.42	1.0
Tetrachloroethene	0.45	J	0.25	1.0
Toluene	0.38	U	0.38	1.0
trans-1,2-Dichloroethene	0.24	U	0.24	1.0
trans-1,3-Dichloropropene	0.49	U	0.49	1.0
Trichloroethene	14		0.31	1.0
Vinyl chloride	0.17	U	0.17	1.0
Xylenes, Total	0.65	U	0.65	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	111		74 - 132
Bromofluorobenzene	86		77 - 124
Dibromofluoromethane (Surr)	100		72 - 131
Toluene-d8 (Surr)	102		80 - 120

01/15/2019

Client: Advanced GeoServices Corporation Job Number: 460-171966-1

Client Sample ID: MB-3

Lab Sample ID: 460-171966-13 Date Sampled: 12/13/2018 1610
Client Matrix: Water Date Received: 12/18/2018 1115

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-578474	Instrument ID:	CVOAMS12
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	O48838.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	12/25/2018 0547			Final Weight/Volume:	5 mL
Prep Date:	12/25/2018 0547				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	0.97	J	0.24	1.0
1,1,2,2-Tetrachloroethane	0.37	U *J	0.37	1.0
1,1,2-Trichloroethane	0.43	U	0.43	1.0
1,1-Dichloroethane	0.26	U	0.26	1.0
1,1-Dichloroethene	0.12	U	0.12	1.0
1,2-Dichloroethane	0.43	U	0.43	1.0
1,2-Dichloropropane	0.35	U	0.35	1.0
2-Butanone	1.9	U	1.9	5.0
2-Hexanone	2.9	U	2.9	5.0
4-Methyl-2-pentanone	2.7	U	2.7	5.0
Acetone	5.0	U	5.0	5.0
Benzene	0.43	U	0.43	1.0
Bromodichloromethane	0.34	U	0.34	1.0
Bromoform	0.54	U	0.54	1.0
Bromomethane	1.0	U J	1.0	1.0
Carbon disulfide	0.16	U	0.16	1.0
Carbon tetrachloride	0.21	U	0.21	1.0
Chlorobenzene	0.38	U	0.38	1.0
Chloroethane	0.32	U	0.32	1.0
Chloroform	0.49	J	0.33	1.0
Chloromethane	0.14	U *J	0.14	1.0
cis-1,2-Dichloroethene	1.7		0.22	1.0
cis-1,3-Dichloropropene	0.46	U	0.46	1.0
Dibromochloromethane	0.28	U	0.28	1.0
Ethylbenzene	0.30	U	0.30	1.0
Methylene Chloride	0.32	U	0.32	1.0
Styrene	0.42	U	0.42	1.0
Tetrachloroethene	1.6		0.25	1.0
Toluene	0.38	U	0.38	1.0
trans-1,2-Dichloroethene	0.24	U	0.24	1.0
trans-1,3-Dichloropropene	0.49	U	0.49	1.0
Trichloroethene	22		0.31	1.0
Vinyl chloride	0.17	U	0.17	1.0
Xylenes, Total	0.65	U	0.65	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	113		74 - 132
Bromofluorobenzene	86		77 - 124
Dibromofluoromethane (Surr)	99		72 - 131
Toluene-d8 (Surr)	103		80 - 120

AKG 01/15/2019

Client: Advanced GeoServices Corporation Job Number: 460-171966-1

Client Sample ID: MW-4

Lab Sample ID: 460-171966-14 Date Sampled: 12/13/2018 1709
Client Matrix: Water Date Received: 12/18/2018 1115

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-578474	Instrument ID:	CVOAMS12
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	O48839.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	12/25/2018 0613			Final Weight/Volume:	5 mL
Prep Date:	12/25/2018 0613				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	0.88	J	0.24	1.0
1,1,2,2-Tetrachloroethane	0.37	U *J	0.37	1.0
1,1,2-Trichloroethane	0.43	U	0.43	1.0
1,1-Dichloroethane	0.26	U	0.26	1.0
1,1-Dichloroethene	0.12	U	0.12	1.0
1,2-Dichloroethane	0.43	U	0.43	1.0
1,2-Dichloropropane	0.35	U	0.35	1.0
2-Butanone	1.9	U	1.9	5.0
2-Hexanone	2.9	U	2.9	5.0
4-Methyl-2-pentanone	2.7	U	2.7	5.0
Acetone	5.0	U	5.0	5.0
Benzene	0.43	U	0.43	1.0
Bromodichloromethane	0.34	U	0.34	1.0
Bromoform	0.54	U	0.54	1.0
Bromomethane	1.0	U J	1.0	1.0
Carbon disulfide	0.16	U	0.16	1.0
Carbon tetrachloride	0.21	U	0.21	1.0
Chlorobenzene	0.38	U	0.38	1.0
Chloroethane	0.32	U	0.32	1.0
Chloroform	0.63	J	0.33	1.0
Chloromethane	0.14	U *J	0.14	1.0
cis-1,2-Dichloroethene	0.22	U	0.22	1.0
cis-1,3-Dichloropropene	0.46	U	0.46	1.0
Dibromochloromethane	0.28	U	0.28	1.0
Ethylbenzene	0.30	U	0.30	1.0
Methylene Chloride	0.32	U	0.32	1.0
Styrene	0.42	U	0.42	1.0
Tetrachloroethene	1.6		0.25	1.0
Toluene	0.38	U	0.38	1.0
trans-1,2-Dichloroethene	0.24	U	0.24	1.0
trans-1,3-Dichloropropene	0.49	U	0.49	1.0
Trichloroethene	30		0.31	1.0
Vinyl chloride	0.17	U	0.17	1.0
Xylenes, Total	0.65	U	0.65	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	111		74 - 132
Bromofluorobenzene	86		77 - 124
Dibromofluoromethane (Surr)	100		72 - 131
Toluene-d8 (Surr)	101		80 - 120

AKG 01/15/2019

Client: Advanced GeoServices Corporation Job Number: 460-171966-1

Client Sample ID: EB-1-121318

Lab Sample ID: 460-171966-15 Date Sampled: 12/13/2018 1800
Client Matrix: Water Date Received: 12/18/2018 1115

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-578474	Instrument ID:	CVOAMS12
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	O48840.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	12/25/2018 0640			Final Weight/Volume:	5 mL
Prep Date:	12/25/2018 0640				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	0.24	U	0.24	1.0
1,1,2,2-Tetrachloroethane	0.37	U *J	0.37	1.0
1,1,2-Trichloroethane	0.43	U	0.43	1.0
1,1-Dichloroethane	0.26	U	0.26	1.0
1,1-Dichloroethene	0.12	U	0.12	1.0
1,2-Dichloroethane	0.43	U	0.43	1.0
1,2-Dichloropropane	0.35	U	0.35	1.0
2-Butanone	1.9	U	1.9	5.0
2-Hexanone	2.9	U	2.9	5.0
4-Methyl-2-pentanone	2.7	U	2.7	5.0
Acetone	5.0	U	5.0	5.0
Benzene	0.43	U	0.43	1.0
Bromodichloromethane	0.34	U	0.34	1.0
Bromoform	0.54	U	0.54	1.0
Bromomethane	1.0	UJ	1.0	1.0
Carbon disulfide	0.16	U	0.16	1.0
Carbon tetrachloride	0.21	U	0.21	1.0
Chlorobenzene	0.38	U	0.38	1.0
Chloroethane	0.32	U	0.32	1.0
Chloroform	0.33	U	0.33	1.0
Chloromethane	0.14	U *J	0.14	1.0
cis-1,2-Dichloroethene	0.22	U	0.22	1.0
cis-1,3-Dichloropropene	0.46	U	0.46	1.0
Dibromochloromethane	0.28	U	0.28	1.0
Ethylbenzene	0.30	U	0.30	1.0
Methylene Chloride	0.32	U	0.32	1.0
Styrene	0.42	U	0.42	1.0
Tetrachloroethene	0.25	U	0.25	1.0
Toluene	0.38	U	0.38	1.0
trans-1,2-Dichloroethene	0.24	U	0.24	1.0
trans-1,3-Dichloropropene	0.49	U	0.49	1.0
Trichloroethene	0.31	U	0.31	1.0
Vinyl chloride	0.17	U	0.17	1.0
Xylenes, Total	0.65	U	0.65	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	115		74 - 132
Bromofluorobenzene	88		77 - 124
Dibromofluoromethane (Surr)	103		72 - 131
Toluene-d8 (Surr)	105		80 - 120

AKG 01/15/2019

Client: Advanced GeoServices Corporation Job Number: 460-171966-1

Client Sample ID: IW-6

Lab Sample ID: 460-171966-16 Date Sampled: 12/14/2018 1538
Client Matrix: Water Date Received: 12/18/2018 1115

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-578474	Instrument ID:	CVOAMS12
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	O48841.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	12/25/2018 0707			Final Weight/Volume:	5 mL
Prep Date:	12/25/2018 0707				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	2.0		0.24	1.0
1,1,2,2-Tetrachloroethane	0.37	U J	0.37	1.0
1,1,2-Trichloroethane	0.43	U	0.43	1.0
1,1-Dichloroethane	0.26	U	0.26	1.0
1,1-Dichloroethene	0.12	U	0.12	1.0
1,2-Dichloroethane	0.43	U	0.43	1.0
1,2-Dichloropropane	0.35	U	0.35	1.0
2-Butanone	1.9	U	1.9	5.0
2-Hexanone	2.9	U	2.9	5.0
4-Methyl-2-pentanone	2.7	U	2.7	5.0
Acetone	5.0	U	5.0	5.0
Benzene	0.43	U	0.43	1.0
Bromodichloromethane	0.34	U	0.34	1.0
Bromoform	0.54	U	0.54	1.0
Bromomethane	1.0	U J	1.0	1.0
Carbon disulfide	0.16	U	0.16	1.0
Carbon tetrachloride	0.21	U	0.21	1.0
Chlorobenzene	0.38	U	0.38	1.0
Chloroethane	0.32	U	0.32	1.0
Chloroform	0.67	J	0.33	1.0
Chloromethane	0.14	U J	0.14	1.0
cis-1,2-Dichloroethene	0.54	J	0.22	1.0
cis-1,3-Dichloropropene	0.46	U	0.46	1.0
Dibromochloromethane	0.28	U	0.28	1.0
Ethylbenzene	0.30	U	0.30	1.0
Methylene Chloride	0.32	U	0.32	1.0
Styrene	0.42	U	0.42	1.0
Tetrachloroethene	0.80	J	0.25	1.0
Toluene	0.38	U	0.38	1.0
trans-1,2-Dichloroethene	0.24	U	0.24	1.0
trans-1,3-Dichloropropene	0.49	U	0.49	1.0
Trichloroethene	82		0.31	1.0
Vinyl chloride	0.17	U	0.17	1.0
Xylenes, Total	0.65	U	0.65	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	111		74 - 132
Bromofluorobenzene	86		77 - 124
Dibromofluoromethane (Surr)	99		72 - 131
Toluene-d8 (Surr)	102		80 - 120

01/15/2019

Client: Advanced GeoServices Corporation Job Number: 460-171966-1

Client Sample ID: MW-7S

Lab Sample ID: 460-171966-17 Date Sampled: 12/17/2018 1357
Client Matrix: Water Date Received: 12/18/2018 1115

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-578579	Instrument ID:	CVOAMS12
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	O48856.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	12/26/2018 0925			Final Weight/Volume:	5 mL
Prep Date:	12/26/2018 0925				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	0.24	U	0.24	1.0
1,1,2,2-Tetrachloroethane	0.37	U	0.37	1.0
1,1,2-Trichloroethane	0.43	U	0.43	1.0
1,1-Dichloroethane	0.26	U	0.26	1.0
1,1-Dichloroethene	0.12	U	0.12	1.0
1,2-Dichloroethane	0.43	U	0.43	1.0
1,2-Dichloropropane	0.35	U	0.35	1.0
2-Butanone	1.9	U	1.9	5.0
2-Hexanone	2.9	U	2.9	5.0
4-Methyl-2-pentanone	2.7	U	2.7	5.0
Acetone	5.0	U	5.0	5.0
Benzene	0.43	U	0.43	1.0
Bromodichloromethane	0.34	U	0.34	1.0
Bromoform	0.54	U	0.54	1.0
Bromomethane	1.0	UJ	1.0	1.0
Carbon disulfide	0.16	U	0.16	1.0
Carbon tetrachloride	0.21	U	0.21	1.0
Chlorobenzene	0.38	U	0.38	1.0
Chloroethane	0.32	U	0.32	1.0
Chloroform	4.8		0.33	1.0
Chloromethane	0.14	U J	0.14	1.0
cis-1,2-Dichloroethene	0.22	U	0.22	1.0
cis-1,3-Dichloropropene	0.46	U	0.46	1.0
Dibromochloromethane	0.28	U	0.28	1.0
Ethylbenzene	0.30	U	0.30	1.0
Methylene Chloride	0.32	U	0.32	1.0
Styrene	0.42	U	0.42	1.0
Tetrachloroethene	4.0		0.25	1.0
Toluene	0.38	U	0.38	1.0
trans-1,2-Dichloroethene	0.24	U	0.24	1.0
trans-1,3-Dichloropropene	0.49	U	0.49	1.0
Trichloroethene	52		0.31	1.0
Vinyl chloride	0.17	U	0.17	1.0
Xylenes, Total	0.65	U	0.65	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	111		74 - 132
Bromofluorobenzene	87		77 - 124
Dibromofluoromethane (Surr)	100		72 - 131
Toluene-d8 (Surr)	104		80 - 120

01/15/2019

Client: Advanced GeoServices Corporation Job Number: 460-171966-1

Client Sample ID: IW-9

Lab Sample ID: 460-171966-18 Date Sampled: 12/17/2018 1520
Client Matrix: Water Date Received: 12/18/2018 1115

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-578579	Instrument ID:	CVOAMS12
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	O48857.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	12/26/2018 0951			Final Weight/Volume:	5 mL
Prep Date:	12/26/2018 0951				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	1.2		0.24	1.0
1,1,2,2-Tetrachloroethane	0.37	U	0.37	1.0
1,1,2-Trichloroethane	0.43	U	0.43	1.0
1,1-Dichloroethane	0.26	U	0.26	1.0
1,1-Dichloroethene	0.12	U	0.12	1.0
1,2-Dichloroethane	0.43	U	0.43	1.0
1,2-Dichloropropane	0.35	U	0.35	1.0
2-Butanone	1.9	U	1.9	5.0
2-Hexanone	2.9	U	2.9	5.0
4-Methyl-2-pentanone	2.7	U	2.7	5.0
Acetone	5.0	U	5.0	5.0
Benzene	0.43	U	0.43	1.0
Bromodichloromethane	0.34	U	0.34	1.0
Bromoform	0.54	U	0.54	1.0
Bromomethane	1.0	U J	1.0	1.0
Carbon disulfide	0.16	U	0.16	1.0
Carbon tetrachloride	0.21	U	0.21	1.0
Chlorobenzene	0.38	U	0.38	1.0
Chloroethane	0.32	U	0.32	1.0
Chloroform	0.46	J	0.33	1.0
Chloromethane	0.14	UJ	0.14	1.0
cis-1,2-Dichloroethene	2.0		0.22	1.0
cis-1,3-Dichloropropene	0.46	U	0.46	1.0
Dibromochloromethane	0.28	U	0.28	1.0
Ethylbenzene	0.30	U	0.30	1.0
Methylene Chloride	0.32	U	0.32	1.0
Styrene	0.42	U	0.42	1.0
Tetrachloroethene	7.4		0.25	1.0
Toluene	0.38	U	0.38	1.0
trans-1,2-Dichloroethene	0.24	U	0.24	1.0
trans-1,3-Dichloropropene	0.49	U	0.49	1.0
Trichloroethene	48		0.31	1.0
Vinyl chloride	0.17	U	0.17	1.0
Xylenes, Total	0.65	U	0.65	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	110		74 - 132
Bromofluorobenzene	87		77 - 124
Dibromofluoromethane (Surr)	98		72 - 131
Toluene-d8 (Surr)	103		80 - 120

AKG 01/15/2019

Client: Advanced GeoServices Corporation Job Number: 460-171966-1

Client Sample ID: Trip Blank

Lab Sample ID: 460-171966-19TB
Client Matrix: Water

Date Sampled: 12/12/2018 0000
Date Received: 12/18/2018 1115

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-578579	Instrument ID:	CVOAMS12
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	O48854.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	12/26/2018 0832			Final Weight/Volume:	5 mL
Prep Date:	12/26/2018 0832				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	0.24	U	0.24	1.0
1,1,2,2-Tetrachloroethane	0.37	U	0.37	1.0
1,1,2-Trichloroethane	0.43	U	0.43	1.0
1,1-Dichloroethane	0.26	U	0.26	1.0
1,1-Dichloroethene	0.12	U	0.12	1.0
1,2-Dichloroethane	0.43	U	0.43	1.0
1,2-Dichloropropane	0.35	U	0.35	1.0
2-Butanone	1.9	U	1.9	5.0
2-Hexanone	2.9	U	2.9	5.0
4-Methyl-2-pentanone	2.7	U	2.7	5.0
Acetone	5.0	U	5.0	5.0
Benzene	0.43	U	0.43	1.0
Bromodichloromethane	0.34	U	0.34	1.0
Bromoform	0.54	U	0.54	1.0
Bromomethane	1.0	U J	1.0	1.0
Carbon disulfide	0.16	U	0.16	1.0
Carbon tetrachloride	0.21	U	0.21	1.0
Chlorobenzene	0.38	U	0.38	1.0
Chloroethane	0.32	U	0.32	1.0
Chloroform	0.33	U	0.33	1.0
Chloromethane	0.14	U J	0.14	1.0
cis-1,2-Dichloroethene	0.22	U	0.22	1.0
cis-1,3-Dichloropropene	0.46	U	0.46	1.0
Dibromochloromethane	0.28	U	0.28	1.0
Ethylbenzene	0.30	U	0.30	1.0
Methylene Chloride	0.32	U	0.32	1.0
Styrene	0.42	U	0.42	1.0
Tetrachloroethene	0.25	U	0.25	1.0
Toluene	0.38	U	0.38	1.0
trans-1,2-Dichloroethene	0.24	U	0.24	1.0
trans-1,3-Dichloropropene	0.49	U	0.49	1.0
Trichloroethene	0.31	U	0.31	1.0
Vinyl chloride	0.17	U	0.17	1.0
Xylenes, Total	0.65	U	0.65	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	110		74 - 132
Bromofluorobenzene	84		77 - 124
Dibromofluoromethane (Surr)	97		72 - 131
Toluene-d8 (Surr)	103		80 - 120

01/15/2019

Client: Advanced GeoServices Corporation Job Number: 460-171966-1

Client Sample ID: OSMW-1

Lab Sample ID: 460-171966-20 Date Sampled: 12/14/2018 1045
Client Matrix: Water Date Received: 12/18/2018 1115

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-578579	Instrument ID:	CVOAMS12
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	O48858.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	12/26/2018 1018			Final Weight/Volume:	5 mL
Prep Date:	12/26/2018 1018				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	0.43	J	0.24	1.0
1,1,2,2-Tetrachloroethane	0.37	U	0.37	1.0
1,1,2-Trichloroethane	0.43	U	0.43	1.0
1,1-Dichloroethane	0.26	U	0.26	1.0
1,1-Dichloroethene	0.12	U	0.12	1.0
1,2-Dichloroethane	0.43	U	0.43	1.0
1,2-Dichloropropane	0.35	U	0.35	1.0
2-Butanone	1.9	U	1.9	5.0
2-Hexanone	2.9	U	2.9	5.0
4-Methyl-2-pentanone	2.7	U	2.7	5.0
Acetone	5.0	U	5.0	5.0
Benzene	0.43	U	0.43	1.0
Bromodichloromethane	0.34	U	0.34	1.0
Bromoform	0.54	U	0.54	1.0
Bromomethane	1.0	U J	1.0	1.0
Carbon disulfide	0.16	U	0.16	1.0
Carbon tetrachloride	0.21	U	0.21	1.0
Chlorobenzene	0.38	U	0.38	1.0
Chloroethane	0.32	U	0.32	1.0
Chloroform	0.33	U	0.33	1.0
Chloromethane	0.14	U J	0.14	1.0
cis-1,2-Dichloroethene	0.22	U	0.22	1.0
cis-1,3-Dichloropropene	0.46	U	0.46	1.0
Dibromochloromethane	0.28	U	0.28	1.0
Ethylbenzene	0.30	U	0.30	1.0
Methylene Chloride	0.32	U	0.32	1.0
Styrene	0.42	U	0.42	1.0
Tetrachloroethene	0.25	U	0.25	1.0
Toluene	0.38	U	0.38	1.0
trans-1,2-Dichloroethene	0.24	U	0.24	1.0
trans-1,3-Dichloropropene	0.49	U	0.49	1.0
Trichloroethene	0.51	J	0.31	1.0
Vinyl chloride	0.17	U	0.17	1.0
Xylenes, Total	0.65	U	0.65	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	110		74 - 132
Bromofluorobenzene	85		77 - 124
Dibromofluoromethane (Surr)	98		72 - 131
Toluene-d8 (Surr)	103		80 - 120

AKG 01/15/2019

Client: Advanced GeoServices Corporation Job Number: 460-171966-1

Client Sample ID: OSMW-1D

Lab Sample ID: 460-171966-21 Date Sampled: 12/14/2018 1105
Client Matrix: Water Date Received: 12/18/2018 1115

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-578579	Instrument ID:	CVOAMS12
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	O48859.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	12/26/2018 1045			Final Weight/Volume:	5 mL
Prep Date:	12/26/2018 1045				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	0.40	J	0.24	1.0
1,1,2,2-Tetrachloroethane	0.37	U	0.37	1.0
1,1,2-Trichloroethane	0.43	U	0.43	1.0
1,1-Dichloroethane	0.26	U	0.26	1.0
1,1-Dichloroethene	0.12	U	0.12	1.0
1,2-Dichloroethane	0.43	U	0.43	1.0
1,2-Dichloropropane	0.35	U	0.35	1.0
2-Butanone	1.9	U	1.9	5.0
2-Hexanone	2.9	U	2.9	5.0
4-Methyl-2-pentanone	2.7	U	2.7	5.0
Acetone	5.0	U	5.0	5.0
Benzene	0.43	U	0.43	1.0
Bromodichloromethane	0.34	U	0.34	1.0
Bromoform	0.54	U	0.54	1.0
Bromomethane	1.0	U J	1.0	1.0
Carbon disulfide	0.16	U	0.16	1.0
Carbon tetrachloride	0.21	U	0.21	1.0
Chlorobenzene	0.38	U	0.38	1.0
Chloroethane	0.32	U	0.32	1.0
Chloroform	0.33	U	0.33	1.0
Chloromethane	0.14	U J	0.14	1.0
cis-1,2-Dichloroethene	0.22	U	0.22	1.0
cis-1,3-Dichloropropene	0.46	U	0.46	1.0
Dibromochloromethane	0.28	U	0.28	1.0
Ethylbenzene	0.30	U	0.30	1.0
Methylene Chloride	0.32	U	0.32	1.0
Styrene	0.42	U	0.42	1.0
Tetrachloroethene	0.25	U	0.25	1.0
Toluene	0.38	U	0.38	1.0
trans-1,2-Dichloroethene	0.24	U	0.24	1.0
trans-1,3-Dichloropropene	0.49	U	0.49	1.0
Trichloroethene	0.31	J	0.31	1.0
Vinyl chloride	0.17	U	0.17	1.0
Xylenes, Total	0.65	U	0.65	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	113		74 - 132
Bromofluorobenzene	87		77 - 124
Dibromofluoromethane (Surr)	99		72 - 131
Toluene-d8 (Surr)	105		80 - 120

01/15/2019

Client: Advanced GeoServices Corporation Job Number: 460-171966-1

Client Sample ID: OSMW-2

Lab Sample ID: 460-171966-22 Date Sampled: 12/14/2018 1210
Client Matrix: Water Date Received: 12/18/2018 1115

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-578579	Instrument ID:	CVOAMS12
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	O48860.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	12/26/2018 1111			Final Weight/Volume:	5 mL
Prep Date:	12/26/2018 1111				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	0.24	U	0.24	1.0
1,1,2,2-Tetrachloroethane	0.37	U	0.37	1.0
1,1,2-Trichloroethane	0.43	U	0.43	1.0
1,1-Dichloroethane	0.26	U	0.26	1.0
1,1-Dichloroethene	0.12	U	0.12	1.0
1,2-Dichloroethane	0.43	U	0.43	1.0
1,2-Dichloropropane	0.35	U	0.35	1.0
2-Butanone	1.9	U	1.9	5.0
2-Hexanone	2.9	U	2.9	5.0
4-Methyl-2-pentanone	2.7	U	2.7	5.0
Acetone	5.0	U	5.0	5.0
Benzene	0.43	U	0.43	1.0
Bromodichloromethane	0.34	U	0.34	1.0
Bromoform	0.54	U	0.54	1.0
Bromomethane	1.0	UJ	1.0	1.0
Carbon disulfide	0.16	U	0.16	1.0
Carbon tetrachloride	0.21	U	0.21	1.0
Chlorobenzene	0.38	U	0.38	1.0
Chloroethane	0.32	U	0.32	1.0
Chloroform	0.33	U	0.33	1.0
Chloromethane	0.14	UJ	0.14	1.0
cis-1,2-Dichloroethene	0.22	U	0.22	1.0
cis-1,3-Dichloropropene	0.46	U	0.46	1.0
Dibromochloromethane	0.28	U	0.28	1.0
Ethylbenzene	0.30	U	0.30	1.0
Methylene Chloride	0.32	U	0.32	1.0
Styrene	0.42	U	0.42	1.0
Tetrachloroethene	0.25	U	0.25	1.0
Toluene	0.38	U	0.38	1.0
trans-1,2-Dichloroethene	0.24	U	0.24	1.0
trans-1,3-Dichloropropene	0.49	U	0.49	1.0
Trichloroethene	0.31	U	0.31	1.0
Vinyl chloride	0.17	U	0.17	1.0
Xylenes, Total	0.65	U	0.65	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	111		74 - 132
Bromofluorobenzene	86		77 - 124
Dibromofluoromethane (Surr)	98		72 - 131
Toluene-d8 (Surr)	104		80 - 120

AKG 01/15/2019

Client: Advanced GeoServices Corporation Job Number: 460-171966-1

Client Sample ID: OSMW-3

Lab Sample ID: 460-171966-23 Date Sampled: 12/14/2018 1356
Client Matrix: Water Date Received: 12/18/2018 1115

8260C Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	Analysis Batch:	460-578579	Instrument ID:	CVOAMS12
Prep Method:	5030C	Prep Batch:	N/A	Lab File ID:	O48861.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	12/26/2018 1138			Final Weight/Volume:	5 mL
Prep Date:	12/26/2018 1138				

Analyte	Result (ug/L)	Qualifier	MDL	RL
1,1,1-Trichloroethane	0.96	J	0.24	1.0
1,1,2,2-Tetrachloroethane	0.37	U F1	0.37	1.0
1,1,2-Trichloroethane	0.43	U	0.43	1.0
1,1-Dichloroethane	0.26	U	0.26	1.0
1,1-Dichloroethene	0.12	U	0.12	1.0
1,2-Dichloroethane	0.43	U	0.43	1.0
1,2-Dichloropropane	0.35	U	0.35	1.0
2-Butanone	1.9	U	1.9	5.0
2-Hexanone	2.9	U	2.9	5.0
4-Methyl-2-pentanone	2.7	U	2.7	5.0
Acetone	5.0	U	5.0	5.0
Benzene	0.43	U	0.43	1.0
Bromodichloromethane	0.34	U	0.34	1.0
Bromoform	0.54	U	0.54	1.0
Bromomethane	1.0	U J	1.0	1.0
Carbon disulfide	0.16	U	0.16	1.0
Carbon tetrachloride	0.21	U	0.21	1.0
Chlorobenzene	0.38	U	0.38	1.0
Chloroethane	0.32	U	0.32	1.0
Chloroform	0.77	J	0.33	1.0
Chloromethane	0.14	U F1 J	0.14	1.0
cis-1,2-Dichloroethene	0.22	U	0.22	1.0
cis-1,3-Dichloropropene	0.46	U	0.46	1.0
Dibromochloromethane	0.28	U	0.28	1.0
Ethylbenzene	0.30	U	0.30	1.0
Methylene Chloride	0.32	U	0.32	1.0
Styrene	0.42	U	0.42	1.0
Tetrachloroethene	0.25	U	0.25	1.0
Toluene	0.38	U	0.38	1.0
trans-1,2-Dichloroethene	0.24	U	0.24	1.0
trans-1,3-Dichloropropene	0.49	U	0.49	1.0
Trichloroethene	7.7		0.31	1.0
Vinyl chloride	0.17	U	0.17	1.0
Xylenes, Total	0.65	U	0.65	2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	108		74 - 132
Bromofluorobenzene	85		77 - 124
Dibromofluoromethane (Surr)	98		72 - 131
Toluene-d8 (Surr)	103		80 - 120

AKG 01/15/2019

HOLDING TIMES
Volatiles

Site Name: **Marathon** **Volatiles**

Lab ID	Sample ID	Matrix	Analyte	Sample Date	Date Analyzed	Analysis Hold Time (days)	Days to Analysis	Qualify
460-171966-01	VP-1	Groundwater	Volatiles	12/12/2018	12/25/2018	14	13.0	
460-171966-02	VP-2	Groundwater	Volatiles	12/12/2018	12/25/2018	14	13.0	
460-171966-03	VP-3	Groundwater	Volatiles	12/12/2018	12/25/2018	14	13.0	
460-171966-04	VP-7	Groundwater	Volatiles	12/12/2018	12/25/2018	14	13.0	
460-171966-05	VP-8	Groundwater	Volatiles	12/13/2018	12/25/2018	14	12.0	
460-171966-06	VP-11	Groundwater	Volatiles	12/13/2018	12/25/2018	14	12.0	
460-171966-07	VP-10	Groundwater	Volatiles	12/13/2018	12/25/2018	14	12.0	
460-171966-08	ASMP-1	Groundwater	Volatiles	12/13/2018	12/25/2018	14	12.0	
460-171966-09	VP-9	Groundwater	Volatiles	12/13/2018	12/25/2018	14	12.0	
460-171966-10	IW-8	Groundwater	Volatiles	12/13/2018	12/25/2018	14	12.0	
460-171966-11	IW-7	Groundwater	Volatiles	12/13/2018	12/25/2018	14	12.0	
460-171966-12	IW-7D	Groundwater	Volatiles	12/13/2018	12/25/2018	14	12.0	
460-171966-13	MB-3	Groundwater	Volatiles	12/13/2018	12/25/2018	14	12.0	
460-171966-14	MW-4	Groundwater	Volatiles	12/13/2018	12/25/2018	14	12.0	
460-171966-15	EB-1-121318	Aqueous	Volatiles	12/13/2018	12/25/2018	14	12.0	
460-171966-16	IW-6	Groundwater	Volatiles	12/14/2018	12/25/2018	14	11.0	
460-171966-17	MW-7S	Groundwater	Volatiles	12/17/2018	12/26/2018	14	9.0	
460-171966-18	IW-9	Groundwater	Volatiles	12/17/2018	12/26/2018	14	9.0	
460-171966-19	Trip Blank	Aqueous	Volatiles	12/12/2018	12/26/2018	14	14.0	
460-171966-20	OSMW-01	Groundwater	Volatiles	12/14/2018	12/26/2018	14	12.0	
460-171966-21	OSMW-01D	Groundwater	Volatiles	12/14/2018	12/26/2018	14	12.0	
460-171966-22	OSMW-02	Groundwater	Volatiles	12/14/2018	12/26/2018	14	12.0	
460-171966-23	OSMW-03	Groundwater	Volatiles	12/14/2018	12/26/2018	14	12.0	

AK
01/15/2019

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Edison Job No.: 460-171966-1

SDG No.:

Lab Sample ID: CCVIS 460-578474/2 Calibration Date: 12/24/2018 21:17

Instrument ID: CVOAMS12 Calib Start Date: 12/13/2018 05:11

GC Column: DB-624 ID: 0.18(mm) Calib End Date: 12/13/2018 08:17

Lab File ID: O48820.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D	
~~Chlorotrifluoroethene~~	~~QuaF~~		~~0.5329~~		~~10.7~~	~~20.0~~	~~-46.6*~~	~~20.0~~	NR
Dichlorodifluoromethane	Ave	0.3320	0.2881	0.1000	17.4	20.0	-13.2	20.0	
Chloromethane	Ave	0.1511	0.2400	0.1000	31.8	20.0	* 58.8*	20.0	
Vinyl chloride	Ave	0.2937	0.2780	0.1000	18.9	20.0	-5.3	20.0	
Butadiene	Ave	0.2412	0.2273		18.8	20.0	* -5.8	20.0	
Bromomethane	QuaF		1.819	0.1000	10.4	20.0	-47.8	50.0	
Chloroethane	Ave	0.2409	0.2074	0.1000	17.2	20.0	-13.9	50.0	
Dichlorofluoromethane	Ave	0.5154	0.4980		19.3	20.0	-3.4	20.0	
Trichlorofluoromethane	Ave	0.4502	0.4140	0.1000	18.4	20.0	-8.0	20.0	
Pentane	Ave	0.0507	0.0440		34.7	40.0	-13.3	20.0	
Ethanol	Ave	0.0576	0.0485		674	800	-15.7	50.0	
1,2-Dichloro-1,1,2-trifluoro ethane	Ave	0.2514	0.2325		18.5	20.0	-7.5	20.0	
Ethyl ether	Ave	0.1969	0.2049		20.8	20.0	4.0	20.0	
2-Methyl-1,3-butadiene	Ave	0.2120	0.2095		19.8	20.0	-1.2	20.0	
~~Acrolein~~	~~QuaF~~		~~0.9774~~		~~74.9~~	~~40.0~~	~~87.3*~~	~~50.0~~	NR
1,1-Dichloroethene	Ave	0.2544	0.2308	0.1000	18.1	20.0	-9.3	20.0	
1,1,2-Trichloro-1,2,2-trifluoroethane	Ave	0.2614	0.2436	0.1000	18.6	20.0	-6.8	20.0	
Acetone	Ave	0.2596	0.2532	0.0500	97.6	100	-2.4	50.0	
~~Iodomethane~~	~~QuaF~~		~~0.0740~~		~~12.0~~	~~20.0~~	~~-40.2*~~	~~20.0~~	NR
Isopropyl alcohol	Ave	0.5065	0.5306		210	200	4.8	50.0	
Carbon disulfide	Ave	0.7184	0.6464	0.1000	18.0	20.0	-10.0	50.0	
Acetonitrile	QuaF		0.3108		171	200	-14.4	20.0	
Allyl chloride	Ave	0.2651	0.2742		20.7	20.0	3.4	20.0	
Methyl acetate	Ave	1.473	1.738	0.1000	47.2	40.0	18.0	20.0	
Cyclopentene	Ave	0.5761	0.5871		20.4	20.0	1.9	20.0	
Methylene Chloride	Ave	0.2998	0.2877	0.1000	19.2	20.0	-4.1	20.0	
2-Methyl-2-propanol	Ave	1.118	1.020		183	200	-8.7	50.0	
~~Acrylonitrile~~	~~Ave~~	~~0.0567~~	~~0.0805~~		~~284~~	~~200~~	~~41.9*~~	~~20.0~~	NR
trans-1,2-Dichloroethene	Ave	0.2982	0.2719	0.1000	18.2	20.0	-8.8	20.0	
Methyl tert-butyl ether	Ave	0.7503	0.7778	0.1000	20.7	20.0	3.7	20.0	
Hexane	Ave	0.2975	0.2759		18.5	20.0	-7.3	20.0	
1,1-Dichloroethane	Ave	0.3961	0.4115	0.2000	20.8	20.0	3.9	20.0	
Vinyl acetate	Ave	0.6385	0.5856		36.7	40.0	-8.3	20.0	
2-Chloro-1,3-butadiene	Ave	0.2490	0.2523		20.3	20.0	1.3	20.0	
Isopropyl ether	Ave	0.6284	0.7003		22.3	20.0	11.4	20.0	
Tert-butyl ethyl ether	Ave	0.6362	0.7181		22.6	20.0	12.9	20.0	
2,2-Dichloropropane	Ave	0.0888	0.0878		19.8	20.0	-1.1	20.0	
cis-1,2-Dichloroethene	Ave	0.2901	0.3006	0.1000	20.7	20.0	3.6	20.0	
2-Butanone	Ave	0.3647	0.3444	0.0500	94.4	100	-5.6	50.0	
Propionitrile	Ave	0.1951	0.2238		229	200	14.7	20.0	

%D > 30%, associated samples include VP-1, VP-2, VP-3, VP-7, VP-8, VP-11, VP-10, ASMP-1, VP-9, IW-8, IW-7, IW-7D, MB-3, MW-4, FD-1-121318, and IW-6. (UJ)

NR - Not Reported

AG 01/15/2019

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Edison Job No.: 460-171966-1

SDG No.:

Lab Sample ID: CCVIS 460-578474/2 Calibration Date: 12/24/2018 21:17

Instrument ID: CVOAMS12 Calib Start Date: 12/13/2018 05:11

GC Column: DB-624 ID: 0.18(mm) Calib End Date: 12/13/2018 08:17

Lab File ID: O48820.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D	
Ethylene Dibromide	Ave	0.2838	0.2704	0.1000	19.1	20.0	-4.7	20.0	
Chlorobenzene	Ave	0.9375	0.9363	0.5000	20.0	20.0	-0.1	20.0	
1,1,1,2-Tetrachloroethane	Ave	0.3060	0.2591		16.9	20.0	-15.3	20.0	
Ethylbenzene	Ave	0.4940	0.5099	0.1000	20.6	20.0	3.2	20.0	
m-Xylene & p-Xylene	Ave	0.5908	0.5490	0.1000	18.6	20.0	-7.1	20.0	
o-Xylene	Ave	0.5984	0.5306	0.3000	17.7	20.0	-11.3	20.0	
Styrene	Ave	0.9657	0.9073	0.3000	18.8	20.0	-6.0	20.0	
n-Butyl acrylate	Ave	0.1965	0.1862		19.0	20.0	-5.2	20.0	
Bromoform	Qua2		0.1356	0.1000	15.5	20.0	-22.6*	20.0	
Amyl acetate (mixed isomers)	Ave	0.6559	0.7797		23.8	20.0	18.9	20.0	
Isopropylbenzene	Ave	1.382	1.399	0.1000	20.3	20.0	1.3	20.0	
Bromobenzene	Ave	0.7868	0.9088		23.1	20.0	15.5	20.0	
1,1,2,2-Tetrachloroethane	Ave	0.5908	0.7710	0.3000	26.1	20.0	30.5*	20.0	25
~~1,2,3-Trichloropropane~~	~~Ave~~	~~0.2000~~	~~0.2480~~		~~24.8~~	~~20.0~~	~~24.0*~~	~~20.0~~	NR
~~trans-1,4-Dichloro-2-butene~~	~~Ave~~	~~0.1072~~	~~0.1528~~		~~28.5~~	~~20.0~~	~~42.6*~~	~~20.0~~	NR
N-Propylbenzene	Ave	2.365	2.786		23.6	20.0	17.8	20.0	
~~2-Chlorotoluene~~	~~Ave~~	~~1.737~~	~~2.215~~		~~25.5~~	~~20.0~~	~~27.5*~~	~~20.0~~	NR
4-Ethyltoluene	Ave	2.154	2.291		21.3	20.0	6.3	20.0	
~~4-Chlorotoluene~~	~~Ave~~	~~1.681~~	~~2.100~~		~~25.0~~	~~20.0~~	~~24.9*~~	~~20.0~~	NR
1,3,5-Trimethylbenzene	Ave	1.588	1.634		20.6	20.0	2.9	20.0	
Butyl Methacrylate	Ave	0.5911	0.5963		20.2	20.0	0.9	20.0	
tert-Butylbenzene	Ave	1.710	1.858		21.7	20.0	8.7	20.0	
1,2,4-Trimethylbenzene	Ave	1.563	1.602		20.5	20.0	2.5	20.0	
sec-Butylbenzene	Ave	2.233	2.499		22.4	20.0	11.9	20.0	
1,3-Dichlorobenzene	Ave	1.331	1.366	0.6000	20.5	20.0	2.6	20.0	
1,4-Dichlorobenzene	Ave	1.354	1.335	0.5000	19.7	20.0	-1.4	20.0	
4-Isopropyltoluene	Ave	1.847	1.872		20.3	20.0	1.4	20.0	
1,2,3-Trimethylbenzene	Ave	1.583	1.760		22.2	20.0	11.2	20.0	
~~Benzyl chloride~~	~~QuaF~~		~~0.1941~~		~~14.9~~	~~20.0~~	~~-25.3~~	~~50.0~~	NR
Indan	Ave	2.078	2.250		21.7	20.0	8.3	20.0	
1,2-Dichlorobenzene	Ave	1.253	1.323	0.4000	21.1	20.0	5.6	20.0	
p-Diethylbenzene	Ave	0.9391	0.9516		20.3	20.0	1.3	20.0	
n-Butylbenzene	Ave	0.7379	0.8214		22.3	20.0	11.3	20.0	
~~1,2-Dibromo-3-Chloropropane~~	~~Ave~~	~~0.0937~~	~~0.1238~~	~~0.0500~~	~~26.4~~	~~20.0~~	~~32.1~~	~~50.0~~	NR
~~1,2,4,5-Tetramethylbenzene~~	~~Ave~~	~~1.603~~	~~2.054~~		~~25.6~~	~~20.0~~	~~28.2*~~	~~20.0~~	NR
1,3,5-Trichlorobenzene	Ave	0.7173	0.6952		19.4	20.0	-3.1	20.0	
1,2,4-Trichlorobenzene	Ave	0.6586	0.6725	0.2000	20.4	20.0	2.1	20.0	
Hexachlorobutadiene	Ave	0.3785	0.3219		17.0	20.0	-14.9	20.0	
Naphthalene	Ave	1.623	1.600		19.7	20.0	-1.4	50.0	
1,2,3-Trichlorobenzene	Ave	0.6425	0.6379		19.9	20.0	-0.7	20.0	
Dibromofluoromethane (Surr)	Ave	0.2626	0.2659		50.6	50.0	1.3	20.0	

AK 01/15/2019

%D > 25%, associated samples include VP-1, VP-2, VP-3, VP-7, VP-8, VP-11, VP-10, ASMP-1, VP-9, IW-8, IW-7, IW-7D, MB-3, MW-4, TB-1-121318 and IW-6. (UJ)

NR - Not Reported

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Edison Job No.: 460-171966-1

SDG No.:

Lab Sample ID: CCVIS 460-578579/2 Calibration Date: 12/26/2018 05:25

Instrument ID: CVOAMS12 Calib Start Date: 12/13/2018 05:11

GC Column: DB-624 ID: 0.18(mm) Calib End Date: 12/13/2018 08:17

Lab File ID: O48847.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Chlorotrifluoroethene	QuaF		1.121		22.4	20.0	12.0	20.0
Dichlorodifluoromethane	Ave	0.3320	0.3362	0.1000	20.3	20.0	1.3	20.0
Chloromethane	Ave	0.1511	0.2639	0.1000	34.9	20.0	74.7*	20.0
Vinyl chloride	Ave	0.2937	0.2831	0.1000	19.3	20.0	-3.6	20.0
Butadiene	Ave	0.2412	0.2263		18.8	20.0	-6.2	20.0
Bromomethane	QuaF		2.418	0.1000	13.9	20.0	-30.4	50.0
Chloroethane	Ave	0.2409	0.2137	0.1000	17.7	20.0	-11.3	50.0
Dichlorofluoromethane	Ave	0.5154	0.5159		20.0	20.0	0.0	20.0
Trichlorofluoromethane	Ave	0.4502	0.4315	0.1000	19.2	20.0	-4.2	20.0
Pentane	Ave	0.0507	0.0492		38.8	40.0	-3.0	20.0
Ethanol	Ave	0.0576	0.0507		705	800	-11.9	50.0
Ethyl ether	Ave	0.1969	0.1965		20.0	20.0	-0.2	20.0
1,2-Dichloro-1,1,2-trifluoro ethane	Ave	0.2514	0.2440		19.4	20.0	-3.0	20.0
2-Methyl-1,3-butadiene	Ave	0.2120	0.2102		19.8	20.0	-0.8	20.0
~~Acrolein~~	~~QuaF~~		~~0.8682~~		~~67.9~~	~~40.0~~	~~69.7*~~	~~50.0~~
1,1-Dichloroethene	Ave	0.2544	0.2376	0.1000	18.7	20.0	-6.6	20.0
1,1,2-Trichloro-1,2,2-trifluoroethane	Ave	0.2614	0.2682	0.1000	20.5	20.0	2.6	20.0
Acetone	Ave	0.2596	0.1852	0.0500	71.4	100	-28.6	50.0
~~Iodomethane~~	~~QuaF~~		~~0.0949~~		~~15.3~~	~~20.0~~	~~-23.3*~~	~~20.0~~
Isopropyl alcohol	Ave	0.5065	0.4829		191	200	-4.7	50.0
Carbon disulfide	Ave	0.7184	0.7646	0.1000	21.3	20.0	6.4	50.0
Acetonitrile	QuaF		0.3716		205	200	2.5	20.0
Allyl chloride	Ave	0.2651	0.2496		18.8	20.0	-5.9	20.0
Methyl acetate	Ave	1.473	1.506	0.1000	40.9	40.0	2.3	20.0
Cyclopentene	Ave	0.5761	0.6278		21.8	20.0	9.0	20.0
Methylene Chloride	Ave	0.2998	0.2952	0.1000	19.7	20.0	-1.5	20.0
2-Methyl-2-propanol	Ave	1.118	1.071		192	200	-4.1	50.0
Acrylonitrile	Ave	0.0567	0.0523		185	200	-7.7	20.0
trans-1,2-Dichloroethene	Ave	0.2982	0.2822	0.1000	18.9	20.0	-5.4	20.0
Methyl tert-butyl ether	Ave	0.7503	0.7317	0.1000	19.5	20.0	-2.5	20.0
Hexane	Ave	0.2975	0.3470		23.3	20.0	16.6	20.0
1,1-Dichloroethane	Ave	0.3961	0.4412	0.2000	22.3	20.0	11.4	20.0
Vinyl acetate	Ave	0.6385	0.6796		42.6	40.0	6.4	20.0
2-Chloro-1,3-butadiene	Ave	0.2490	0.2704		21.7	20.0	8.6	20.0
Isopropyl ether	Ave	0.6284	0.6811		21.7	20.0	8.4	20.0
Tert-butyl ethyl ether	Ave	0.6362	0.7018		22.1	20.0	10.3	20.0
2,2-Dichloropropane	Ave	0.0888	0.0900		20.3	20.0	1.4	20.0
cis-1,2-Dichloroethene	Ave	0.2901	0.3025	0.1000	20.9	20.0	4.3	20.0
2-Butanone	Ave	0.3647	0.3533	0.0500	96.9	100	-3.1	50.0
Propionitrile	Ave	0.1951	0.2285		234	200	17.1	20.0

NR

NR

%D > 30%, associated samples include MW-7S, IW-9, Trip Blank, OSMW-01, OSMW-01D, OSMW-02 and OSMW-03. All associated samples results non-detect.

NR - Not Reported

460-171966_Field Duplicate
VOCs

Site Name:	**Marathon**	**Laboratory:**	**Test America - Edison**
Project Number:	**NY95-219**	**Matrix:**	**Groundwater**

Sample ID	Analyte	Units	Result	Q	RL	Difference	Qualify
IW-7	1,1,1-Trichloroethane	ug/L	0.72	J	1		
IW-7D	1,1,1-Trichloroethane	ug/L	0.62	J	1	0.10	no

Sample ID	Analyte	Units	Result	Q	RL	Difference	Qualify
IW-7	Chloroform	ug/L	1.3		1		
IW-7D	Chloroform	ug/L	1.2		1	0.10	no

Sample ID	Analyte	Units	Result	Q	RL	Difference	Qualify
IW-7	Tetrachloroethene	ug/L	0.51	J	1		
IW-7D	Tetrachloroethene	ug/L	0.45	J	1	0.06	no

Sample ID	Analyte	Units	Result	Q	RL	RPD	Qualify
IW-7	Trichloroethene	ug/L	15		1		
IW-7D	Trichloroethene	ug/L	14		1	6.90	no

Sample ID	Analyte	Units	Result	Q	RL	Difference	Qualify
OSMW-01	1,1,1-Trichloroethane	ug/L	0.43	J	1		
OSMW-01D	1,1,1-Trichloroethane	ug/L	0.4	J	1	0.03	no

Sample ID	Analyte	Units	Result	Q	RL	Difference	Qualify
OSMW-01	Trichloroethene	ug/L	0.51	J	1		
OSMW-01D	Trichloroethene	ug/L	0.31	J	1	0.20	no

Duplicate Criteria: Aqueous matrices <30 % RPD or < ± 1*RL, Soil/Solid matrices <40 %RPD or < ± 2*RL.

*** - Denotes %RPD or difference outside criteria.**

NA - Duplicate relative percent difference or difference cannot be calculated.

U / ND - Not detected.

AK
01/15/2019

FORM III
GC/MS VOA MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Edison Job No.: 460-171966-1

SDG No.:

Matrix: Water Level: Low Lab File ID: O48844.D

Lab ID: 460-171966-10 MS Client ID: IW-8 MS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#
1,1,1-Trichloroethane	20.0	1.3	20.3	95	75-125	
1,1,2,2-Tetrachloroethane	20.0	0.37 U	22.6	113	74-120	
1,1,2-Trichloroethane	20.0	0.43 U	19.4	97	78-120	
1,1-Dichloroethane	20.0	0.26 U	20.2	101	77-123	
1,1-Dichloroethene	20.0	0.12 U	17.3	86	74-123	
1,2-Dichloroethane	20.0	0.43 U	21.5	108	76-121	
1,2-Dichloropropane	20.0	0.35 U	21.3	107	77-123	
2-Butanone	100	1.9 U	90.0	90	64-120	
2-Hexanone	100	2.9 U	93.7	94	71-125	
4-Methyl-2-pentanone	100	2.7 U	96.1	96	78-124	
Acetone	100	5.0 U	64.2	64	39-150	
Benzene	20.0	0.43 U	20.7	104	77-121	
Bromodichloromethane	20.0	0.34 U	19.6	98	76-120	
Bromoform	20.0	0.54 U	15.4	77	53-120	
Bromomethane	20.0	1.0 U	10.8	54	10-150	
Carbon disulfide	20.0	0.16 U	16.8	84	69-133	
Carbon tetrachloride	20.0	0.21 U	17.0	85	70-132	
Chlorobenzene	20.0	0.38 U	20.2	101	80-120	
Chloroethane	20.0	0.32 U	17.0	85	52-150	
Chloroform	20.0	0.68 J	21.3	103	80-120	
Chloromethane	20.0	0.14 U	33.9	* 170	56-131	F1
cis-1,2-Dichloroethene	20.0	0.22 U	19.8	99	80-120	
cis-1,3-Dichloropropene	20.0	0.46 U	20.1	101	77-120	
Dibromochloromethane	20.0	0.28 U	16.8	84	73-120	
Ethylbenzene	20.0	0.30 U	20.1	100	80-120	
Methylene Chloride	20.0	0.32 U	18.7	93	77-123	
Styrene	20.0	0.42 U	18.8	94	80-120	
Tetrachloroethene	20.0	4.7	20.8	80	78-122	
Toluene	20.0	0.38 U	20.2	101	80-120	
trans-1,2-Dichloroethene	20.0	0.24 U	17.5	87	79-120	
trans-1,3-Dichloropropene	20.0	0.49 U	19.1	** 95	76-120	
Trichloroethene	20.0	28	43.3	76	77-120	F1
Vinyl chloride	20.0	0.17 U	17.9	90	62-138	
Xylenes, Total	40.0	0.65 U	38.2	95	80-120	

* FYI MS/MSD Recovery outside of the laboratory control limits (high), associated batched samples include VP-1, VP-2, VP-3, VP-7, VP-8, VP-11, VP-10, ASMP-1, VP-9, IW-8, IW-7, IW-7D, MB-3, MW-4, EB-1-121318 and IW-6. All sample results non-detect.

* FYI MS Recovery slightly outside of the laboratory control limits (low), associated batched samples include VP-1, VP-2, VP-3, VP-7, VP-8, VP-11, VP-10, ASMP-1, VP-9, IW-8, IW-7, IW-7D, MB-3, MW-4, EB-1-121318 and IW-6. Parent sample IW-8.

Column to be used to flag recovery and RPD values

01/15/2019

FORM III 8260C

FORM III
GC/MS VOA MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Edison Job No.: 460-171966-1

SDG No.:

Matrix: Water Level: Low Lab File ID: O48845.D

Lab ID: 460-171966-10 MSD Client ID: IW-8 MSD

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
1,1,1-Trichloroethane	20.0	21.0	99	3	30	75-125	
1,1,2,2-Tetrachloroethane	20.0	23.2	116	2	30	74-120	
1,1,2-Trichloroethane	20.0	20.1	100	4	30	78-120	
1,1-Dichloroethane	20.0	22.2	111	9	30	77-123	
1,1-Dichloroethene	20.0	17.6	88	2	30	74-123	
1,2-Dichloroethane	20.0	22.4	112	4	30	76-121	
1,2-Dichloropropane	20.0	21.4	107	0	30	77-123	
2-Butanone	100	89.5	89	1	30	64-120	
2-Hexanone	100	93.4	93	0	30	71-125	
4-Methyl-2-pentanone	100	94.5	94	2	30	78-124	
Acetone	100	65.2	65	2	30	39-150	
Benzene	20.0	21.6	108	4	30	77-121	
Bromodichloromethane	20.0	20.6	103	5	30	76-120	
Bromoform	20.0	16.3	81	5	30	53-120	
Bromomethane	20.0	11.5	58	6	30	10-150	
Carbon disulfide	20.0	18.1	90	7	30	69-133	
Carbon tetrachloride	20.0	18.0	90	6	30	70-132	
Chlorobenzene	20.0	20.3	101	1	30	80-120	
Chloroethane	20.0	18.5	92	8	30	52-150	
Chloroform	20.0	22.1	107	4	30	80-120	
Chloromethane	20.0	34.5 *	172	2	30	56-131	F1
cis-1,2-Dichloroethene	20.0	20.3	101	2	30	80-120	
cis-1,3-Dichloropropene	20.0	20.9	104	4	30	77-120	
Dibromochloromethane	20.0	18.0	90	7	30	73-120	
Ethylbenzene	20.0	21.0	105	5	30	80-120	
Methylene Chloride	20.0	19.2	96	3	30	77-123	
Styrene	20.0	20.0	100	6	30	80-120	
Tetrachloroethene	20.0	21.5	84	4	30	78-122	
Toluene	20.0	21.2	106	5	30	80-120	
trans-1,2-Dichloroethene	20.0	17.8	89	2	30	79-120	
trans-1,3-Dichloropropene	20.0	20.4	102	7	30	76-120	
Trichloroethene	20.0	44.1	80	2	30	77-120	
Vinyl chloride	20.0	18.9	95	5	30	62-138	
Xylenes, Total	40.0	38.6	97	1	30	80-120	

* FYI MS/MSD Recovery outside of the laboratory control limits (high), associated batched samples include VP-1, VP-2, VP-3, VP-7, VP-8, VP-11, VP-10, ASMP-1, VP-9, IW-8, IW-7, IW-7D, MB-3, MW-4, EB-1-121318 and IW-6. All sample results non-detect.

Column to be used to flag recovery and RPD values

AKG 01/15/2019

FORM III 8260C

FORM III
GC/MS VOA MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Edison Job No.: 460-171966-1

SDG No.:

Matrix: Water Level: Low Lab File ID: O48862.D

Lab ID: 460-171966-23 MS Client ID: OSMW-3 MS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#
1,1,1-Trichloroethane	20.0	0.96 J	21.0	100	75-125	
1,1,2,2-Tetrachloroethane	20.0	0.37 U	23.9	119	74-120	
1,1,2-Trichloroethane	20.0	0.43 U	19.9	100	78-120	
1,1-Dichloroethane	20.0	0.26 U	20.9	104	77-123	
1,1-Dichloroethene	20.0	0.12 U	18.2	91	74-123	
1,2-Dichloroethane	20.0	0.43 U	22.2	111	76-121	
1,2-Dichloropropane	20.0	0.35 U	21.6	108	77-123	
2-Butanone	100	1.9 U	91.5	92	64-120	
2-Hexanone	100	2.9 U	95.5	95	71-125	
4-Methyl-2-pentanone	100	2.7 U	98.9	99	78-124	
Acetone	100	5.0 U	60.4	60	39-150	
Benzene	20.0	0.43 U	22.0	110	77-121	
Bromodichloromethane	20.0	0.34 U	20.4	102	76-120	
Bromoform	20.0	0.54 U	16.8	84	53-120	
Bromomethane	20.0	1.0 U	11.3	57	10-150	
Carbon disulfide	20.0	0.16 U	20.0	100	69-133	
Carbon tetrachloride	20.0	0.21 U	17.9	89	70-132	
Chlorobenzene	20.0	0.38 U	20.4	102	80-120	
Chloroethane	20.0	0.32 U	16.9	85	52-150	
Chloroform	20.0	0.77 J	22.4	108	80-120	
Chloromethane	20.0	0.14 U	32.6	163	56-131	F1
cis-1,2-Dichloroethene	20.0	0.22 U	20.1	101	80-120	
cis-1,3-Dichloropropene	20.0	0.46 U	22.1	110	77-120	
Dibromochloromethane	20.0	0.28 U	18.2	91	73-120	
Ethylbenzene	20.0	0.30 U	21.0	105	80-120	
Methylene Chloride	20.0	0.32 U	18.5	93	77-123	
Styrene	20.0	0.42 U	20.5	103	80-120	
Tetrachloroethene	20.0	0.25 U	18.7	93	78-122	
Toluene	20.0	0.38 U	21.4	107	80-120	
trans-1,2-Dichloroethene	20.0	0.24 U	18.0	90	79-120	
trans-1,3-Dichloropropene	20.0	0.49 U	21.4	107	76-120	
Trichloroethene	20.0	7.7	27.5	99	77-120	
Vinyl chloride	20.0	0.17 U	18.0	90	62-138	
Xylenes, Total	40.0	0.65 U	40.5	101	80-120	

FYI MS/MSD Recovery outside of the laboratory control limits (high), associated batched samples includeMW-7S, IW-9, Trip Blank, OSMW-01, OSMW-01D, OSMW-02 and OSMW-03. All associated samples results non-detect.

Column to be used to flag recovery and RPD values

01/15/2019

FORM III 8260C

FORM III
GC/MS VOA MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Edison Job No.: 460-171966-1

SDG No.:

Matrix: Water Level: Low Lab File ID: O48863.D

Lab ID: 460-171966-23 MSD Client ID: OSMW-3 MSD

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
1,1,1-Trichloroethane	20.0	22.4	107	7	30	75-125	
1,1,2,2-Tetrachloroethane	20.0	24.1	121	1	30	74-120	F1
1,1,2-Trichloroethane	20.0	20.6	103	3	30	78-120	
1,1-Dichloroethane	20.0	21.5	108	3	30	77-123	
1,1-Dichloroethene	20.0	18.7	93	3	30	74-123	
1,2-Dichloroethane	20.0	22.4	112	1	30	76-121	
1,2-Dichloropropane	20.0	22.8	114	5	30	77-123	
2-Butanone	100	92.5	93	1	30	64-120	
2-Hexanone	100	95.3	95	0	30	71-125	
4-Methyl-2-pentanone	100	100	100	1	30	78-124	
Acetone	100	63.0	63	4	30	39-150	
Benzene	20.0	22.9	115	4	30	77-121	
Bromodichloromethane	20.0	22.0	110	7	30	76-120	
Bromoform	20.0	18.1	90	7	30	53-120	
Bromomethane	20.0	12.8	64	12	30	10-150	
Carbon disulfide	20.0	20.6	103	3	30	69-133	
Carbon tetrachloride	20.0	19.4	97	8	30	70-132	
Chlorobenzene	20.0	21.3	106	4	30	80-120	
Chloroethane	20.0	17.7	89	5	30	52-150	
Chloroform	20.0	22.7	110	1	30	80-120	
Chloromethane	20.0	34.8	174	7	30	56-131	F1
cis-1,2-Dichloroethene	20.0	20.8	104	3	30	80-120	
cis-1,3-Dichloropropene	20.0	22.7	113	3	30	77-120	
Dibromochloromethane	20.0	18.7	94	3	30	73-120	
Ethylbenzene	20.0	21.5	108	2	30	80-120	
Methylene Chloride	20.0	19.2	96	4	30	77-123	
Styrene	20.0	21.2	106	3	30	80-120	
Tetrachloroethene	20.0	19.3	97	3	30	78-122	
Toluene	20.0	22.3	111	4	30	80-120	
trans-1,2-Dichloroethene	20.0	19.2	96	6	30	79-120	
trans-1,3-Dichloropropene	20.0	22.3	111	4	30	76-120	
Trichloroethene	20.0	27.8	100	1	30	77-120	
Vinyl chloride	20.0	19.7	98	9	30	62-138	
Xylenes, Total	40.0	41.6	104	3	30	80-120	

FYI MS/MSD Recovery outside of the laboratory control limits (high), associated batched samples includeMW-7S, IW-9, Trip Blank, OSMW-01, OSMW-01D, OSMW-02 and OSMW-03. All associated samples results non-detect.

Column to be used to flag recovery and RPD values

AKG 01/15/2019

FORM III 8260C

FORM III
GC/MS VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Edison Job No.: 460-171966-1

SDG No.:

Matrix: Water Level: Low Lab File ID: O48821.D

Lab ID: LCS 460-578474/3 Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
1,1,1-Trichloroethane	20.0	21.5	107	75-125	
1,1,2,2-Tetrachloroethane	20.0	25.7	129	74-120	*
1,1,2-Trichloroethane	20.0	20.4	102	78-120	
1,1-Dichloroethane	20.0	21.7	108	77-123	
1,1-Dichloroethene	20.0	19.9	100	74-123	
1,2-Dichloroethane	20.0	23.9	119	76-121	
1,2-Dichloropropane	20.0	22.2	111	77-123	
2-Butanone	100	91.8	92	64-120	
2-Hexanone	100	98.0	98	71-125	
4-Methyl-2-pentanone	100	96.6	97	78-124	
Acetone	100	100	100	39-150	
Benzene	20.0	21.6	108	77-121	
Bromodichloromethane	20.0	21.2	106	76-120	
Bromoform	20.0	15.5	78	53-120	
Bromomethane	20.0	11.6	58	10-150	
Carbon disulfide	20.0	19.2	96	69-133	
Carbon tetrachloride	20.0	19.2	96	70-132	
Chlorobenzene	20.0	20.4	102	80-120	
Chloroethane	20.0	19.1	96	52-150	
Chloroform	20.0	22.7	114	80-120	
Chloromethane	20.0	35.7	179	56-131	*
cis-1,2-Dichloroethene	20.0	21.5	108	80-120	
cis-1,3-Dichloropropene	20.0	22.9	114	77-120	
Dibromochloromethane	20.0	17.3	87	73-120	
Ethylbenzene	20.0	21.1	106	80-120	
Methylene Chloride	20.0	19.8	99	77-123	
Styrene	20.0	19.3	97	80-120	
Tetrachloroethene	20.0	18.5	92	78-122	
Toluene	20.0	21.6	108	80-120	
trans-1,2-Dichloroethene	20.0	19.5	98	79-120	
trans-1,3-Dichloropropene	20.0	21.9	110	76-120	
Trichloroethene	20.0	21.1	106	77-120	
Vinyl chloride	20.0	21.3	106	62-138	
Xylenes, Total	40.0	38.1	95	80-120	

FYI LCS Recovery outside of the laboratory control limits (high), associated batched samples include VP-1, VP-2, VP-3, VP-7, VP-8, VP-11, VP-10, ASMP-1, VP-9, IW-8, IW-7, IW-7D, MB-3, MW-4, EB-1-121318 and IW-6. All sample results non-detect.

Column to be used to flag recovery and RPD values

AKG 01/15/2019

FORM III 8260C