TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Tel: (713)690-4444

TestAmerica Job ID: 600-153606-2
Client Project/Site: Sikes Disposal Pits

For:
CH2M Hill Constructors, Inc.
14701 St. Mary's Lane
Suite 300
Houston, Texas 77079-2923

Attn: Mr. John Ynfante

Authorized for release by:
9/13/2017 7:18:33 PM

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7080243

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

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

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Job ID: 600-153606-2

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-153606-2

Comments
No additional comments.

Receipt
The samples were received on 9/10/2017 8:08 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.0º C.

GC/MS VOA
The laboratory is not NELAC certified for Methyl acetate in soils.

Method(s) 8260B: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 600-220982 recovered outside control limits for the following analyte: 1,4-Dioxane. This analyte was biased high in the LCS/LCSD and was not detected in the associated samples; therefore, the data have been reported.

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

GC/MS Semi VOA
Method(s) 8270C LL: The method blank for preparation batch 600-220951 and analytical batch 600-221013 contained Di-n-butyl phthalate above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 8270C LL: The laboratory control sample for preparation batch 600-220951 and analytical batch 600-221013 recovered outside control limits for the following analyte(s): Benzaldehyde. Benzaldehyde has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. The results have been reported and qualified.

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

Metals
Method(s) 6020: The method blank for preparation batch 560-143107 and analytical batch 560-143138 contained Copper, Lead and Zinc above the method detection limit. These target analyte concentrations were less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

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

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

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

Method Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Sikes Disposal Pits

TestAmerica Job ID: 600-153606-2

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL HOU
8270C LL	Semivolatile Organic Compounds by GCMS - Low Levels	SW846	TAL HOU
6020	Metals (ICP/MS)	SW846	TAL CC
7470A	Mercury (CVAA)	SW846	TAL CC
2540B	Percent Moisture	SM20	TAL HOU

Protocol References:

SM20 = "Standard Methods For The Examination Of Water And Wastewater", 20th Edition."

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

Laboratory References:

TAL CC = TestAmerica Corpus Christi, 1733 N. Padre Island Drive, Corpus Christi, TX 78408, TEL (361)289-2673

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Sample Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Sikes Disposal Pits

TestAmerica Job ID: 600-153606-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-153606-5	SDP-GW-001	Water	09/09/17 14:40	09/10/17 08:08
600-153606-6	SDP-GW-002	Water	09/09/17 15:20	09/10/17 08:08
600-153606-7	SDP-SS-001	Solid	09/09/17 16:10	09/10/17 08:08

Client Sample Results

Client: CH2M Hill Constructors, Inc.
Project/Site: Sikes Disposal Pits

TestAmerica Job ID: 600-153606-2

Client Sample ID: SDP-GW-001

Lab Sample ID: 600-153606-5
Date Collected: 09/09/17 14:40
Matrix: Water
Date Received: 09/10/17 08:08

Method: 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.050	U	0.10	0.050	mg/L		09/12/17 11:15	09/12/17 19:16	1
Antimony	0.0016	U	0.0050	0.0016	mg/L		09/12/17 11:15	09/12/17 19:16	1
Arsenic	**0.0030**	**J**	0.0050	0.0011	mg/L		09/12/17 11:15	09/12/17 19:16	1
Barium	**0.14**		0.0050	0.00081	mg/L		09/12/17 11:15	09/12/17 19:16	1
Beryllium	0.0012	U	0.0040	0.0012	mg/L		09/12/17 11:15	09/12/17 19:16	1
Cadmium	0.00085	U	0.0020	0.00085	mg/L		09/12/17 11:15	09/12/17 19:16	1
Calcium	**68**		0.50	0.20	mg/L		09/12/17 11:15	09/12/17 19:16	1
Chromium	0.0014	U	0.0050	0.0014	mg/L		09/12/17 11:15	09/12/17 19:16	1
Cobalt	0.0014	U	0.0050	0.0014	mg/L		09/12/17 11:15	09/12/17 19:16	1
Copper	0.0020	U	0.010	0.0020	mg/L		09/12/17 11:15	09/12/17 19:16	1
Iron	**4.0**		0.25	0.10	mg/L		09/12/17 11:15	09/12/17 19:16	1
Lead	**0.0017**	**J B**	0.0050	0.00073	mg/L		09/12/17 11:15	09/12/17 19:16	1
Magnesium	**9.6**		0.50	0.11	mg/L		09/12/17 11:15	09/12/17 19:16	1
Manganese	**2.2**		0.050	0.012	mg/L		09/12/17 11:15	09/12/17 19:16	1
Nickel	0.0022	U	0.0050	0.0022	mg/L		09/12/17 11:15	09/12/17 19:16	1
Potassium	**1.4**		1.0	0.41	mg/L		09/12/17 11:15	09/12/17 19:16	1
Selenium	0.0011	U	0.0050	0.0011	mg/L		09/12/17 11:15	09/12/17 19:16	1
Silver	0.00094	U	0.0050	0.00094	mg/L		09/12/17 11:15	09/12/17 19:16	1
Sodium	**23**		1.0	0.73	mg/L		09/12/17 11:15	09/12/17 19:16	1
Thallium	0.00069	U	0.0020	0.00069	mg/L		09/12/17 11:15	09/12/17 19:16	1
Vanadium	0.0014	U	0.0050	0.0014	mg/L		09/12/17 11:15	09/12/17 19:16	1
Zinc	0.0036	U	0.025	0.0036	mg/L		09/12/17 11:15	09/12/17 19:16	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00013	U	0.0020	0.00013	mg/L		09/12/17 10:30	09/12/17 16:49	1

Client Sample ID: SDP-GW-002

Lab Sample ID: 600-153606-6
Date Collected: 09/09/17 15:20
Matrix: Water
Date Received: 09/10/17 08:08

Method: 6020 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.050	U	0.10	0.050	mg/L		09/12/17 11:15	09/12/17 19:21	1
Antimony	0.0016	U	0.0050	0.0016	mg/L		09/12/17 11:15	09/12/17 19:21	1
Arsenic	**0.0011**	**J**	0.0050	0.0011	mg/L		09/12/17 11:15	09/12/17 19:21	1
Barium	**0.15**		0.0050	0.00081	mg/L		09/12/17 11:15	09/12/17 19:21	1
Beryllium	0.0012	U	0.0040	0.0012	mg/L		09/12/17 11:15	09/12/17 19:21	1
Cadmium	0.00085	U	0.0020	0.00085	mg/L		09/12/17 11:15	09/12/17 19:21	1
Calcium	**84**		0.50	0.20	mg/L		09/12/17 11:15	09/12/17 19:21	1
Chromium	0.0014	U	0.0050	0.0014	mg/L		09/12/17 11:15	09/12/17 19:21	1
Cobalt	0.0014	U	0.0050	0.0014	mg/L		09/12/17 11:15	09/12/17 19:21	1
Copper	0.0020	U	0.010	0.0020	mg/L		09/12/17 11:15	09/12/17 19:21	1
Iron	0.10	U	0.25	0.10	mg/L		09/12/17 11:15	09/12/17 19:21	1
Lead	**0.0014**	**J B**	0.0050	0.00073	mg/L		09/12/17 11:15	09/12/17 19:21	1
Magnesium	**2.4**		0.50	0.11	mg/L		09/12/17 11:15	09/12/17 19:21	1
Manganese	0.012	U	0.050	0.012	mg/L		09/12/17 11:15	09/12/17 19:21	1
Nickel	0.0022	U	0.0050	0.0022	mg/L		09/12/17 11:15	09/12/17 19:21	1
Potassium	0.41	U	1.0	0.41	mg/L		09/12/17 11:15	09/12/17 19:21	1
Selenium	**0.0035**	**J**	0.0050	0.0011	mg/L		09/12/17 11:15	09/12/17 19:21	1

Client Sample Results

Client: CH2M Hill Constructors, Inc.
Project/Site: Sikes Disposal Pits

TestAmerica Job ID: 600-153606-2

Client Sample ID: SDP-GW-002

Lab Sample ID: 600-153606-6
Date Collected: 09/09/17 15:20
Matrix: Water
Date Received: 09/10/17 08:08

Method: 6020 - Metals (ICP/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	0.00094	U	0.0050	0.00094	mg/L		09/12/17 11:15	09/12/17 19:21	1
Sodium	**12**		1.0	0.73	mg/L		09/12/17 11:15	09/12/17 19:21	1
Thallium	0.00069	U	0.0020	0.00069	mg/L		09/12/17 11:15	09/12/17 19:21	1
Vanadium	0.0014	U	0.0050	0.0014	mg/L		09/12/17 11:15	09/12/17 19:21	1
Zinc	0.0036	U	0.025	0.0036	mg/L		09/12/17 11:15	09/12/17 19:21	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00013	U	0.0020	0.00013	mg/L		09/12/17 10:30	09/12/17 16:51	1

Client Sample ID: SDP-SS-001

Lab Sample ID: 600-153606-7
Date Collected: 09/09/17 16:10
Matrix: Solid
Date Received: 09/10/17 08:08
Percent Solids: 81.8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.66	U	4.5	0.66	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
1,1,2,2-Tetrachloroethane	0.78	U	4.5	0.78	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.3	U	4.5	1.3	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
1,1,2-Trichloroethane	0.66	U	36	0.66	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
1,1-Dichloroethane	0.78	U	4.5	0.78	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
1,1-Dichloroethene	1.1	U	4.5	1.1	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
1,2,3-Trichlorobenzene	0.56	U	4.5	0.56	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
1,2,4-Trichlorobenzene	1.8	U	4.5	1.8	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
1,2-Dibromo-3-Chloropropane	2.2	U	4.5	2.2	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
1,2-Dibromoethane	0.92	U	4.5	0.92	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
1,2-Dichlorobenzene	0.72	U	4.5	0.72	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
1,2-Dichloroethane	0.81	U	4.5	0.81	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
1,2-Dichloroethene, Total	1.7	U	9.0	1.7	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
1,2-Dichloropropane	0.64	U	4.5	0.64	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
1,3-Dichlorobenzene	0.64	U	4.5	0.64	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
1,4-Dichlorobenzene	0.59	U	4.5	0.59	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
1,4-Dioxane	56	U	450	56	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
2-Butanone (MEK)	1.7	U	9.0	1.7	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
2-Hexanone	0.91	U	9.0	0.91	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
4-Methyl-2-pentanone (MIBK)	1.3	U	9.0	1.3	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
Acetone	1.5	U	9.0	1.5	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
Benzene	0.57	U	4.5	0.57	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
Bromodichloromethane	0.59	U	4.5	0.59	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
Bromoform	1.2	U	4.5	1.2	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
Bromomethane	0.74	U	9.0	0.74	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
Carbon disulfide	0.49	U	9.0	0.49	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
Carbon tetrachloride	1.0	U	4.5	1.0	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
Chlorobenzene	0.86	U	4.5	0.86	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
Chlorobromomethane	1.6	U	4.5	1.6	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
Chloroethane	1.3	U	9.0	1.3	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
Chloroform	0.59	U	9.0	0.59	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
Chloromethane	1.5	U	9.0	1.5	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
cis-1,2-Dichloroethene	0.74	U	4.5	0.74	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
cis-1,3-Dichloropropene	0.48	U	4.5	0.48	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1

Client Sample Results

Client: CH2M Hill Constructors, Inc.
Project/Site: Sikes Disposal Pits

TestAmerica Job ID: 600-153606-2

Client Sample ID: SDP-SS-001

Date Collected: 09/09/17 16:10
Date Received: 09/10/17 08:08

Lab Sample ID: 600-153606-7

Matrix: Solid
Percent Solids: 81.8

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyclohexane	1.7	U	4.5	1.7	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
Dibromochloromethane	0.84	U	4.5	0.84	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
Dichlorodifluoromethane	1.4	U	4.5	1.4	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
Ethylbenzene	0.92	U	4.5	0.92	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
Isopropylbenzene	0.83	U	4.5	0.83	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
Methyl acetate	2.6	U	4.5	2.6	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
Methyl tert-butyl ether	1.6	U	4.5	1.6	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
Methylcyclohexane	1.3	U	4.5	1.3	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
Methylene Chloride	2.0	U	9.0	2.0	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
m-Xylene & p-Xylene	1.4	U	4.5	1.4	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
o-Xylene	1.0	U	4.5	1.0	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
Styrene	0.64	U	4.5	0.64	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
Tetrachloroethene	0.64	U	4.5	0.64	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
Toluene	1.2	U	4.5	1.2	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
trans-1,2-Dichloroethene	1.0	U	4.5	1.0	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
trans-1,3-Dichloropropene	0.52	U	4.5	0.52	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
Trichloroethene	1.3	U	4.5	1.3	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
Trichlorofluoromethane	0.59	U	9.0	0.59	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
Vinyl acetate	0.83	U	9.0	0.83	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
Vinyl chloride	0.81	U	9.0	0.81	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1
Xylenes, Total	1.0	U	4.5	1.0	ug/Kg	☼	09/10/17 08:48	09/11/17 10:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*61 - 130*	*09/10/17 08:48*	*09/11/17 10:42*	*1*
4-Bromofluorobenzene	*117*		*57 - 140*	*09/10/17 08:48*	*09/11/17 10:42*	*1*
Dibromofluoromethane	*77*		*68 - 140*	*09/10/17 08:48*	*09/11/17 10:42*	*1*
Toluene-d8 (Surr)	*83*		*50 - 130*	*09/10/17 08:48*	*09/11/17 10:42*	*1*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	4.9	U	41	4.9	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
1,2,4,5-Tetrachlorobenzene	8.2	U	41	8.2	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
2,3,4,6-Tetrachlorophenol	20	U	41	20	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
2,4,5-Trichlorophenol	12	U	41	12	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
2,4,6-Trichlorophenol	3.3	U	41	3.3	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
2,4-Dichlorophenol	4.7	U	41	4.7	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
2,4-Dimethylphenol	10	U	41	10	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
2,4-Dinitrophenol	5.8	U	120	5.8	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
2,4-Dinitrotoluene	4.4	U	41	4.4	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
2,6-Dinitrotoluene	3.6	U	41	3.6	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
2-Chloronaphthalene	1.5	U	41	1.5	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
2-Chlorophenol	2.4	U	41	2.4	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
2-Methylnaphthalene	3.3	U	41	3.3	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
2-Methylphenol	3.9	U	41	3.9	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
2-Nitroaniline	6.0	U	41	6.0	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
2-Nitrophenol	4.7	U	41	4.7	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
3 & 4 Methylphenol	**11**	**J**	41	3.4	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
3,3'-Dichlorobenzidine	12	U	41	12	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
3-Nitroaniline	8.7	U	41	8.7	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
4,6-Dinitro-2-methylphenol	6.1	U	210	6.1	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1

Client Sample Results

Client: CH2M Hill Constructors, Inc.
Project/Site: Sikes Disposal Pits

TestAmerica Job ID: 600-153606-2

Client Sample ID: SDP-SS-001

Date Collected: 09/09/17 16:10
Date Received: 09/10/17 08:08

Lab Sample ID: 600-153606-7

Matrix: Solid
Percent Solids: 81.8

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Bromophenyl phenyl ether	3.5	U	41	3.5	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
4-Chloro-3-methylphenol	19	U	41	19	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
4-Chloroaniline	7.1	U	41	7.1	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
4-Chlorophenyl phenyl ether	2.2	U	41	2.2	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
4-Nitroaniline	14	U	41	14	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
4-Nitrophenol	6.2	U	240	6.2	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Acenaphthene	1.8	U	41	1.8	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Acenaphthylene	**2.9**	**J**	41	1.2	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Acetophenone	**9.3**	**J**	41	4.0	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Anthracene	1.6	U	41	1.6	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Atrazine	6.1	U	41	6.1	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Benzaldehyde	**87**		41	20	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Benzo[a]anthracene	**7.8**	**J**	41	1.7	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Benzo[a]pyrene	**6.3**	**J**	41	2.0	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Benzo[b]fluoranthene	**16**	**J**	41	2.1	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Benzo[g,h,i]perylene	6.2	U	41	6.2	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Benzo[k]fluoranthene	**6.6**	**J**	41	1.8	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
bis (2-Chloroisopropyl) ether	11	U	41	11	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Bis(2-chloroethoxy)methane	1.7	U	41	1.7	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Bis(2-chloroethyl)ether	2.0	U	41	2.0	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Bis(2-ethylhexyl) phthalate	6.6	U	41	6.6	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Butyl benzyl phthalate	**21**	**J**	81	7.6	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Caprolactam	20	U	41	20	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Carbazole	**10**	**J**	41	3.8	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Chrysene	**11**	**J**	41	1.2	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Dibenz(a,h)anthracene	4.4	U	41	4.4	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Dibenzofuran	2.2	U	41	2.2	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Diethyl phthalate	10	U	81	10	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Dimethyl phthalate	6.0	U	81	6.0	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Di-n-butyl phthalate	**13**	**J**	81	3.2	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Di-n-octyl phthalate	**3.6**	**J**	81	2.3	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Fluoranthene	3.8	U	41	3.8	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Fluorene	2.9	U	41	2.9	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Hexachlorobenzene	1.9	U	41	1.9	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Hexachlorobutadiene	2.3	U	41	2.3	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Hexachlorocyclopentadiene	5.6	U	41	5.6	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Hexachloroethane	2.8	U	41	2.8	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Indeno[1,2,3-cd]pyrene	4.3	U	41	4.3	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Isophorone	1.2	U	41	1.2	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Naphthalene	1.6	U	41	1.6	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Nitrobenzene	3.6	U	41	3.6	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
N-Nitrosodi-n-propylamine	2.7	U	41	2.7	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
N-Nitrosodiphenylamine	2.3	U	41	2.3	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Pentachlorophenol	4.9	U	200	4.9	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Phenanthrene	**8.6**	**J**	41	6.0	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Phenol	**24**	**J**	41	5.2	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1
Pyrene	**13**	**J**	41	2.2	ug/Kg	☼	09/10/17 12:18	09/12/17 14:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol	*49*		*25 - 132*	*09/10/17 12:18*	*09/12/17 14:15*	*1*

Client Sample Results

Client: CH2M Hill Constructors, Inc.
Project/Site: Sikes Disposal Pits

TestAmerica Job ID: 600-153606-2

Client Sample ID: SDP-SS-001

Date Collected: 09/09/17 16:10
Date Received: 09/10/17 08:08

Lab Sample ID: 600-153606-7

Matrix: Solid
Percent Solids: 81.8

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Nitrobenzene-d5	*38*		*10 - 155*	*09/10/17 12:18*	*09/12/17 14:15*	*1*
2-Fluorobiphenyl	*52*		*38 - 130*	*09/10/17 12:18*	*09/12/17 14:15*	*1*
2,4,6-Tribromophenol	*62*		*10 - 148*	*09/10/17 12:18*	*09/12/17 14:15*	*1*
Terphenyl-d14	*56*		*53 - 134*	*09/10/17 12:18*	*09/12/17 14:15*	*1*
Phenol-d5 (Surr)	*48*		*27 - 130*	*09/10/17 12:18*	*09/12/17 14:15*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**18.2**		1.0	1.0	%			09/11/17 16:23	1
Percent Solids	**81.8**		1.0	1.0	%			09/11/17 16:23	1

Definitions/Glossary

Client: CH2M Hill Constructors, Inc.
Project/Site: Sikes Disposal Pits

TestAmerica Job ID: 600-153606-2

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
*	LCS or LCSD is outside acceptance limits.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	LCS or LCSD is outside acceptance limits.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.

Glossary

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

Surrogate Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Sikes Disposal Pits

TestAmerica Job ID: 600-153606-2

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

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

		Percent Surrogate Recovery (Acceptance Limits)			
		12DCE	BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(61-130)	(57-140)	(68-140)	(50-130)
600-153606-7	SDP-SS-001	94	117	77	83
LCS 600-220982/3	Lab Control Sample	92	120	82	94
LCSD 600-220982/4	Lab Control Sample Dup	92	122	84	96
MB 600-220982/6	Method Blank	108	111	86	85

Surrogate Legend

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

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

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

		Percent Surrogate Recovery (Acceptance Limits)					
		2FP	NBZ	FBP	TBP	TPH	PHL
Lab Sample ID	Client Sample ID	(25-132)	(10-155)	(38-130)	(10-148)	(53-134)	(27-130)
600-153606-7	SDP-SS-001	49	38	52	62	56	48
LCS 600-220951/2-A	Lab Control Sample	80	68	71	76	81	70
MB 600-220951/1-A	Method Blank	66	61	56	52	73	52

Surrogate Legend

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

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

Lab Sample ID: MB 600-220982/6
Matrix: Solid
Analysis Batch: 220982

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.74	U	5.0	0.74	ug/Kg			09/11/17 09:53	1
1,1,2,2-Tetrachloroethane	0.87	U	5.0	0.87	ug/Kg			09/11/17 09:53	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.4	U	5.0	1.4	ug/Kg			09/11/17 09:53	1
1,1,2-Trichloroethane	0.73	U	40	0.73	ug/Kg			09/11/17 09:53	1
1,1-Dichloroethane	0.87	U	5.0	0.87	ug/Kg			09/11/17 09:53	1
1,1-Dichloroethene	1.2	U	5.0	1.2	ug/Kg			09/11/17 09:53	1
1,2,3-Trichlorobenzene	0.62	U	5.0	0.62	ug/Kg			09/11/17 09:53	1
1,2,4-Trichlorobenzene	2.0	U	5.0	2.0	ug/Kg			09/11/17 09:53	1
1,2-Dibromo-3-Chloropropane	2.4	U	5.0	2.4	ug/Kg			09/11/17 09:53	1
1,2-Dibromoethane	1.0	U	5.0	1.0	ug/Kg			09/11/17 09:53	1
1,2-Dichlorobenzene	0.80	U	5.0	0.80	ug/Kg			09/11/17 09:53	1
1,2-Dichloroethane	0.90	U	5.0	0.90	ug/Kg			09/11/17 09:53	1
1,2-Dichloroethene, Total	1.9	U	10	1.9	ug/Kg			09/11/17 09:53	1
1,2-Dichloropropane	0.71	U	5.0	0.71	ug/Kg			09/11/17 09:53	1
1,3-Dichlorobenzene	0.71	U	5.0	0.71	ug/Kg			09/11/17 09:53	1
1,4-Dichlorobenzene	0.66	U	5.0	0.66	ug/Kg			09/11/17 09:53	1
1,4-Dioxane	62	U	500	62	ug/Kg			09/11/17 09:53	1
2-Butanone (MEK)	1.9	U	10	1.9	ug/Kg			09/11/17 09:53	1
2-Hexanone	1.0	U	10	1.0	ug/Kg			09/11/17 09:53	1
4-Methyl-2-pentanone (MIBK)	1.5	U	10	1.5	ug/Kg			09/11/17 09:53	1
Acetone	1.7	U	10	1.7	ug/Kg			09/11/17 09:53	1
Benzene	0.63	U	5.0	0.63	ug/Kg			09/11/17 09:53	1
Bromodichloromethane	0.66	U	5.0	0.66	ug/Kg			09/11/17 09:53	1
Bromoform	1.4	U	5.0	1.4	ug/Kg			09/11/17 09:53	1
Bromomethane	0.83	U	10	0.83	ug/Kg			09/11/17 09:53	1
Carbon disulfide	0.55	U	10	0.55	ug/Kg			09/11/17 09:53	1
Carbon tetrachloride	1.1	U	5.0	1.1	ug/Kg			09/11/17 09:53	1
Chlorobenzene	0.96	U	5.0	0.96	ug/Kg			09/11/17 09:53	1
Chlorobromomethane	1.8	U	5.0	1.8	ug/Kg			09/11/17 09:53	1
Chloroethane	1.4	U	10	1.4	ug/Kg			09/11/17 09:53	1
Chloroform	0.66	U	10	0.66	ug/Kg			09/11/17 09:53	1
Chloromethane	1.7	U	10	1.7	ug/Kg			09/11/17 09:53	1
cis-1,2-Dichloroethene	0.83	U	5.0	0.83	ug/Kg			09/11/17 09:53	1
cis-1,3-Dichloropropene	0.54	U	5.0	0.54	ug/Kg			09/11/17 09:53	1
Cyclohexane	1.9	U	5.0	1.9	ug/Kg			09/11/17 09:53	1
Dibromochloromethane	0.94	U	5.0	0.94	ug/Kg			09/11/17 09:53	1
Dichlorodifluoromethane	1.5	U	5.0	1.5	ug/Kg			09/11/17 09:53	1
Ethylbenzene	1.0	U	5.0	1.0	ug/Kg			09/11/17 09:53	1
Isopropylbenzene	0.92	U	5.0	0.92	ug/Kg			09/11/17 09:53	1
Methyl acetate	2.9	U	5.0	2.9	ug/Kg			09/11/17 09:53	1
Methyl tert-butyl ether	1.8	U	5.0	1.8	ug/Kg			09/11/17 09:53	1
Methylcyclohexane	1.5	U	5.0	1.5	ug/Kg			09/11/17 09:53	1
Methylene Chloride	2.2	U	10	2.2	ug/Kg			09/11/17 09:53	1
m-Xylene & p-Xylene	1.5	U	5.0	1.5	ug/Kg			09/11/17 09:53	1
o-Xylene	1.1	U	5.0	1.1	ug/Kg			09/11/17 09:53	1
Styrene	0.71	U	5.0	0.71	ug/Kg			09/11/17 09:53	1
Tetrachloroethene	0.71	U	5.0	0.71	ug/Kg			09/11/17 09:53	1
Toluene	1.4	U	5.0	1.4	ug/Kg			09/11/17 09:53	1

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

Lab Sample ID: MB 600-220982/6
Matrix: Solid
Analysis Batch: 220982

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	1.1	U	5.0	1.1	ug/Kg			09/11/17 09:53	1
trans-1,3-Dichloropropene	0.58	U	5.0	0.58	ug/Kg			09/11/17 09:53	1
Trichloroethene	1.4	U	5.0	1.4	ug/Kg			09/11/17 09:53	1
Trichlorofluoromethane	0.66	U	10	0.66	ug/Kg			09/11/17 09:53	1
Vinyl acetate	0.93	U	10	0.93	ug/Kg			09/11/17 09:53	1
Vinyl chloride	0.90	U	10	0.90	ug/Kg			09/11/17 09:53	1
Xylenes, Total	1.1	U	5.0	1.1	ug/Kg			09/11/17 09:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*61 - 130*		*09/11/17 09:53*	*1*
4-Bromofluorobenzene	*111*		*57 - 140*		*09/11/17 09:53*	*1*
Dibromofluoromethane	*86*		*68 - 140*		*09/11/17 09:53*	*1*
Toluene-d8 (Surr)	*85*		*50 - 130*		*09/11/17 09:53*	*1*

Lab Sample ID: LCS 600-220982/3
Matrix: Solid
Analysis Batch: 220982

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	50.0	37.2		ug/Kg		74	59 - 130
1,1,2,2-Tetrachloroethane	50.0	59.2		ug/Kg		118	61 - 138
1,1,2-Trichloro-1,2,2-trifluoroetha ne	50.0	36.2		ug/Kg		72	48 - 150
1,1,2-Trichloroethane	50.0	50.7		ug/Kg		101	67 - 134
1,1-Dichloroethane	50.0	38.2		ug/Kg		76	63 - 140
1,1-Dichloroethene	50.0	36.5		ug/Kg		73	62 - 142
1,2,3-Trichlorobenzene	50.0	42.2		ug/Kg		84	52 - 135
1,2,4-Trichlorobenzene	50.0	39.6		ug/Kg		79	53 - 136
1,2-Dibromo-3-Chloropropane	50.0	54.9		ug/Kg		110	29 - 150
1,2-Dibromoethane	50.0	55.1		ug/Kg		110	65 - 136
1,2-Dichlorobenzene	50.0	43.1		ug/Kg		86	61 - 131
1,2-Dichloroethane	50.0	50.1		ug/Kg		100	58 - 137
1,2-Dichloroethene, Total	100	77.2		ug/Kg		77	70 - 130
1,2-Dichloropropane	50.0	46.1		ug/Kg		92	70 - 130
1,3-Dichlorobenzene	50.0	41.8		ug/Kg		84	63 - 132
1,4-Dichlorobenzene	50.0	42.9		ug/Kg		86	65 - 131
1,4-Dioxane	1000	1650	*	ug/Kg		165	31 - 150
2-Butanone (MEK)	100	146		ug/Kg		146	33 - 150
2-Hexanone	100	131		ug/Kg		131	35 - 150
4-Methyl-2-pentanone (MIBK)	100	130		ug/Kg		130	21 - 150
Acetone	100	147		ug/Kg		147	13 - 150
Benzene	50.0	40.3		ug/Kg		81	70 - 131
Bromodichloromethane	50.0	45.5		ug/Kg		91	67 - 138
Bromoform	50.0	51.6		ug/Kg		103	43 - 150
Bromomethane	50.0	43.9		ug/Kg		88	37 - 147
Carbon disulfide	50.0	38.0		ug/Kg		76	51 - 141
Carbon tetrachloride	50.0	35.2		ug/Kg		70	58 - 130
Chlorobenzene	50.0	42.3		ug/Kg		85	63 - 131

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

Lab Sample ID: LCS 600-220982/3
Matrix: Solid
Analysis Batch: 220982

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chlorobromomethane	50.0	43.5		ug/Kg		87	70 - 132
Chloroethane	50.0	34.2		ug/Kg		68	40 - 150
Chloroform	50.0	39.7		ug/Kg		79	69 - 130
Chloromethane	50.0	44.7		ug/Kg		89	44 - 141
cis-1,2-Dichloroethene	50.0	38.8		ug/Kg		78	70 - 130
cis-1,3-Dichloropropene	50.0	46.6		ug/Kg		93	65 - 130
Cyclohexane	50.0	37.4		ug/Kg		75	54 - 130
Dibromochloromethane	50.0	47.7		ug/Kg		95	65 - 134
Dichlorodifluoromethane	50.0	41.4		ug/Kg		83	24 - 147
Ethylbenzene	50.0	39.2		ug/Kg		78	66 - 130
Isopropylbenzene	50.0	36.8		ug/Kg		74	64 - 131
Methyl acetate	250	334		ug/Kg		134	10 - 150
Methyl tert-butyl ether	50.0	46.2		ug/Kg		92	63 - 132
Methylcyclohexane	50.0	37.4		ug/Kg		75	51 - 137
Methylene Chloride	50.0	42.4		ug/Kg		85	61 - 150
m-Xylene & p-Xylene	50.0	39.2		ug/Kg		78	64 - 130
o-Xylene	50.0	39.2		ug/Kg		78	62 - 130
Styrene	50.0	43.7		ug/Kg		87	65 - 133
Tetrachloroethene	50.0	35.5		ug/Kg		71	43 - 143
Toluene	50.0	39.8		ug/Kg		80	67 - 130
trans-1,2-Dichloroethene	50.0	38.4		ug/Kg		77	69 - 130
trans-1,3-Dichloropropene	50.0	54.0		ug/Kg		108	70 - 130
Trichloroethene	50.0	37.6		ug/Kg		75	63 - 135
Trichlorofluoromethane	50.0	39.2		ug/Kg		78	53 - 134
Vinyl acetate	100	114		ug/Kg		114	40 - 150
Vinyl chloride	50.0	44.2		ug/Kg		88	40 - 148
Xylenes, Total	100	78.4		ug/Kg		78	63 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*92*		*61 - 130*
4-Bromofluorobenzene	*120*		*57 - 140*
Dibromofluoromethane	*82*		*68 - 140*
Toluene-d8 (Surr)	*94*		*50 - 130*

Lab Sample ID: LCSD 600-220982/4
Matrix: Solid
Analysis Batch: 220982

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	50.0	43.2		ug/Kg		86	59 - 130	15	30
1,1,2,2-Tetrachloroethane	50.0	62.0		ug/Kg		124	61 - 138	5	30
1,1,2-Trichloro-1,2,2-trifluoroetha ne	50.0	42.6		ug/Kg		85	48 - 150	16	30
1,1,2-Trichloroethane	50.0	55.9		ug/Kg		112	67 - 134	10	30
1,1-Dichloroethane	50.0	43.0		ug/Kg		86	63 - 140	12	30
1,1-Dichloroethene	50.0	41.9		ug/Kg		84	62 - 142	14	30
1,2,3-Trichlorobenzene	50.0	47.3		ug/Kg		95	52 - 135	11	30
1,2,4-Trichlorobenzene	50.0	46.4		ug/Kg		93	53 - 136	16	30

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

Lab Sample ID: LCSD 600-220982/4
Matrix: Solid
Analysis Batch: 220982

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dibromo-3-Chloropropane	50.0	58.2		ug/Kg		116	29 - 150	6	30
1,2-Dibromoethane	50.0	59.7		ug/Kg		119	65 - 136	8	30
1,2-Dichlorobenzene	50.0	48.6		ug/Kg		97	61 - 131	12	30
1,2-Dichloroethane	50.0	53.3		ug/Kg		107	58 - 137	6	30
1,2-Dichloroethene, Total	100	87.2		ug/Kg		87	70 - 130	12	30
1,2-Dichloropropane	50.0	50.3		ug/Kg		101	70 - 130	9	30
1,3-Dichlorobenzene	50.0	47.6		ug/Kg		95	63 - 132	13	30
1,4-Dichlorobenzene	50.0	48.9		ug/Kg		98	65 - 131	13	30
1,4-Dioxane	1000	1640	*	ug/Kg		164	31 - 150	1	30
2-Butanone (MEK)	100	145		ug/Kg		145	33 - 150	1	30
2-Hexanone	100	138		ug/Kg		138	35 - 150	5	30
4-Methyl-2-pentanone (MIBK)	100	131		ug/Kg		131	21 - 150	1	30
Acetone	100	131		ug/Kg		131	13 - 150	11	30
Benzene	50.0	45.6		ug/Kg		91	70 - 131	12	30
Bromodichloromethane	50.0	49.8		ug/Kg		100	67 - 138	9	30
Bromoform	50.0	55.5		ug/Kg		111	43 - 150	7	30
Bromomethane	50.0	52.0		ug/Kg		104	37 - 147	17	30
Carbon disulfide	50.0	44.9		ug/Kg		90	51 - 141	17	30
Carbon tetrachloride	50.0	39.4		ug/Kg		79	58 - 130	11	30
Chlorobenzene	50.0	48.3		ug/Kg		97	63 - 131	13	30
Chlorobromomethane	50.0	47.2		ug/Kg		94	70 - 132	8	30
Chloroethane	50.0	43.2		ug/Kg		86	40 - 150	23	30
Chloroform	50.0	44.4		ug/Kg		89	69 - 130	11	30
Chloromethane	50.0	48.5		ug/Kg		97	44 - 141	8	30
cis-1,2-Dichloroethene	50.0	43.6		ug/Kg		87	70 - 130	12	30
cis-1,3-Dichloropropene	50.0	52.1		ug/Kg		104	65 - 130	11	30
Cyclohexane	50.0	43.2		ug/Kg		86	54 - 130	14	30
Dibromochloromethane	50.0	52.5		ug/Kg		105	65 - 134	10	30
Dichlorodifluoromethane	50.0	42.3		ug/Kg		85	24 - 147	2	30
Ethylbenzene	50.0	45.6		ug/Kg		91	66 - 130	15	30
Isopropylbenzene	50.0	41.9		ug/Kg		84	64 - 131	13	30
Methyl acetate	250	334		ug/Kg		134	10 - 150	0	30
Methyl tert-butyl ether	50.0	50.4		ug/Kg		101	63 - 132	9	30
Methylcyclohexane	50.0	42.5		ug/Kg		85	51 - 137	13	30
Methylene Chloride	50.0	47.8		ug/Kg		96	61 - 150	12	30
m-Xylene & p-Xylene	50.0	46.0		ug/Kg		92	64 - 130	16	30
o-Xylene	50.0	45.7		ug/Kg		91	62 - 130	15	30
Styrene	50.0	49.9		ug/Kg		100	65 - 133	13	30
Tetrachloroethene	50.0	41.3		ug/Kg		83	43 - 143	15	30
Toluene	50.0	45.3		ug/Kg		91	67 - 130	13	30
trans-1,2-Dichloroethene	50.0	43.6		ug/Kg		87	69 - 130	13	30
trans-1,3-Dichloropropene	50.0	58.7		ug/Kg		117	70 - 130	8	30
Trichloroethene	50.0	41.9		ug/Kg		84	63 - 135	11	30
Trichlorofluoromethane	50.0	43.6		ug/Kg		87	53 - 134	11	30
Vinyl acetate	100	116		ug/Kg		116	40 - 150	2	30
Vinyl chloride	50.0	47.0		ug/Kg		94	40 - 148	6	30
Xylenes, Total	100	91.7		ug/Kg		92	63 - 130	16	30

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

Lab Sample ID: LCSD 600-220982/4
Matrix: Solid
Analysis Batch: 220982

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

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*92*		*61 - 130*
4-Bromofluorobenzene	*122*		*57 - 140*
Dibromofluoromethane	*84*		*68 - 140*
Toluene-d8 (Surr)	*96*		*50 - 130*

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels

Lab Sample ID: MB 600-220951/1-A
Matrix: Solid
Analysis Batch: 221013

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 220951

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	4.0	U	33	4.0	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
1,2,4,5-Tetrachlorobenzene	6.7	U	33	6.7	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
2,3,4,6-Tetrachlorophenol	17	U	33	17	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
2,4,5-Trichlorophenol	10	U	33	10	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
2,4,6-Trichlorophenol	2.7	U	33	2.7	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
2,4-Dichlorophenol	3.9	U	33	3.9	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
2,4-Dimethylphenol	8.6	U	33	8.6	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
2,4-Dinitrophenol	4.7	U	100	4.7	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
2,4-Dinitrotoluene	3.6	U	33	3.6	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
2,6-Dinitrotoluene	2.9	U	33	2.9	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
2-Chloronaphthalene	1.2	U	33	1.2	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
2-Chlorophenol	2.0	U	33	2.0	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
2-Methylnaphthalene	2.7	U	33	2.7	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
2-Methylphenol	3.2	U	33	3.2	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
2-Nitroaniline	4.9	U	33	4.9	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
2-Nitrophenol	3.9	U	33	3.9	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
3 & 4 Methylphenol	2.8	U	33	2.8	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
3,3'-Dichlorobenzidine	10	U	33	10	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
3-Nitroaniline	7.1	U	33	7.1	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
4,6-Dinitro-2-methylphenol	5.0	U	170	5.0	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
4-Bromophenyl phenyl ether	2.8	U	33	2.8	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
4-Chloro-3-methylphenol	16	U	33	16	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
4-Chloroaniline	5.8	U	33	5.8	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
4-Chlorophenyl phenyl ether	1.8	U	33	1.8	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
4-Nitroaniline	11	U	33	11	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
4-Nitrophenol	5.1	U	200	5.1	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Acenaphthene	1.4	U	33	1.4	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Acenaphthylene	1.0	U	33	1.0	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Acetophenone	3.3	U	33	3.3	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Anthracene	1.3	U	33	1.3	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Atrazine	5.0	U	33	5.0	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Benzaldehyde	17	U	33	17	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Benzo[a]anthracene	1.4	U	33	1.4	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Benzo[a]pyrene	1.6	U	33	1.6	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Benzo[b]fluoranthene	1.7	U	33	1.7	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Benzo[g,h,i]perylene	5.1	U	33	5.1	ug/Kg		09/10/17 09:36	09/11/17 15:30	1

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Lab Sample ID: MB 600-220951/1-A
Matrix: Solid
Analysis Batch: 221013

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 220951

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[k]fluoranthene	1.5	U	33	1.5	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
bis (2-Chloroisopropyl) ether	8.8	U	33	8.8	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Bis(2-chloroethoxy)methane	1.4	U	33	1.4	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Bis(2-chloroethyl)ether	1.6	U	33	1.6	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Bis(2-ethylhexyl) phthalate	5.4	U	33	5.4	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Butyl benzyl phthalate	6.2	U	67	6.2	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Caprolactam	17	U	33	17	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Carbazole	3.1	U	33	3.1	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Chrysene	1.0	U	33	1.0	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Dibenz(a,h)anthracene	3.6	U	33	3.6	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Dibenzofuran	1.8	U	33	1.8	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Diethyl phthalate	8.4	U	67	8.4	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Dimethyl phthalate	4.9	U	67	4.9	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Di-n-butyl phthalate	49.9	J	67	2.6	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Di-n-octyl phthalate	1.9	U	67	1.9	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Fluoranthene	3.1	U	33	3.1	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Fluorene	2.4	U	33	2.4	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Hexachlorobenzene	1.5	U	33	1.5	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Hexachlorobutadiene	1.9	U	33	1.9	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Hexachlorocyclopentadiene	4.6	U	33	4.6	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Hexachloroethane	2.3	U	33	2.3	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Indeno[1,2,3-cd]pyrene	3.5	U	33	3.5	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Isophorone	1.0	U	33	1.0	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Naphthalene	1.3	U	33	1.3	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Nitrobenzene	3.0	U	33	3.0	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
N-Nitrosodi-n-propylamine	2.2	U	33	2.2	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
N-Nitrosodiphenylamine	1.9	U	33	1.9	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Pentachlorophenol	4.0	U	170	4.0	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Phenanthrene	4.9	U	33	4.9	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Phenol	4.2	U	33	4.2	ug/Kg		09/10/17 09:36	09/11/17 15:30	1
Pyrene	1.8	U	33	1.8	ug/Kg		09/10/17 09:36	09/11/17 15:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol	*66*		*25 - 132*	*09/10/17 09:36*	*09/11/17 15:30*	*1*
Nitrobenzene-d5	*61*		*10 - 155*	*09/10/17 09:36*	*09/11/17 15:30*	*1*
2-Fluorobiphenyl	*56*		*38 - 130*	*09/10/17 09:36*	*09/11/17 15:30*	*1*
2,4,6-Tribromophenol	*52*		*10 - 148*	*09/10/17 09:36*	*09/11/17 15:30*	*1*
Terphenyl-d14	*73*		*53 - 134*	*09/10/17 09:36*	*09/11/17 15:30*	*1*
Phenol-d5 (Surr)	*52*		*27 - 130*	*09/10/17 09:36*	*09/11/17 15:30*	*1*

Lab Sample ID: LCS 600-220951/2-A
Matrix: Solid
Analysis Batch: 221013

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 220951

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1'-Biphenyl	666	432		ug/Kg		65	40 - 130
1,2,4,5-Tetrachlorobenzene	666	457		ug/Kg		69	37 - 130
2,3,4,6-Tetrachlorophenol	666	445		ug/Kg		67	44 - 130

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Lab Sample ID: LCS 600-220951/2-A
Matrix: Solid
Analysis Batch: 221013

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 220951

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4,5-Trichlorophenol	666	500		ug/Kg		75	41 - 130
2,4,6-Trichlorophenol	666	457		ug/Kg		69	39 - 130
2,4-Dichlorophenol	666	448		ug/Kg		67	38 - 130
2,4-Dimethylphenol	666	366		ug/Kg		55	32 - 139
2,4-Dinitrophenol	1330	659		ug/Kg		49	15 - 130
2,4-Dinitrotoluene	666	450		ug/Kg		68	45 - 130
2,6-Dinitrotoluene	666	459		ug/Kg		69	44 - 130
2-Chloronaphthalene	666	444		ug/Kg		67	41 - 130
2-Chlorophenol	666	467		ug/Kg		70	37 - 130
2-Methylnaphthalene	666	426		ug/Kg		64	43 - 130
2-Methylphenol	666	428		ug/Kg		64	30 - 130
2-Nitroaniline	666	389		ug/Kg		58	42 - 130
2-Nitrophenol	666	492		ug/Kg		74	38 - 130
3 & 4 Methylphenol	666	409		ug/Kg		61	28 - 133
3,3'-Dichlorobenzidine	666	314		ug/Kg		47	13 - 146
3-Nitroaniline	666	439		ug/Kg		66	41 - 130
4,6-Dinitro-2-methylphenol	1330	793		ug/Kg		60	38 - 130
4-Bromophenyl phenyl ether	666	497		ug/Kg		75	46 - 130
4-Chloro-3-methylphenol	666	491		ug/Kg		74	43 - 130
4-Chloroaniline	666	302		ug/Kg		45	32 - 130
4-Chlorophenyl phenyl ether	666	493		ug/Kg		74	44 - 130
4-Nitroaniline	666	599		ug/Kg		90	46 - 130
4-Nitrophenol	1330	619		ug/Kg		46	42 - 130
Acenaphthene	666	465		ug/Kg		70	42 - 130
Acenaphthylene	666	462		ug/Kg		69	39 - 130
Acetophenone	666	333		ug/Kg		50	36 - 130
Anthracene	666	482		ug/Kg		72	51 - 130
Atrazine	666	206		ug/Kg		31	10 - 140
Benzaldehyde	666	50.9	*	ug/Kg		8	10 - 130
Benzo[a]anthracene	666	502		ug/Kg		75	54 - 130
Benzo[a]pyrene	666	539		ug/Kg		81	44 - 131
Benzo[b]fluoranthene	666	513		ug/Kg		77	41 - 139
Benzo[g,h,i]perylene	666	540		ug/Kg		81	38 - 142
Benzo[k]fluoranthene	666	509		ug/Kg		76	42 - 134
bis (2-Chloroisopropyl) ether	666	371		ug/Kg		56	38 - 130
Bis(2-chloroethoxy)methane	666	417		ug/Kg		63	39 - 130
Bis(2-chloroethyl)ether	666	423		ug/Kg		64	40 - 130
Bis(2-ethylhexyl) phthalate	666	460		ug/Kg		69	41 - 145
Butyl benzyl phthalate	666	469		ug/Kg		70	48 - 141
Caprolactam	666	505		ug/Kg		76	41 - 130
Carbazole	666	603		ug/Kg		91	49 - 131
Chrysene	666	500		ug/Kg		75	52 - 130
Dibenz(a,h)anthracene	666	533		ug/Kg		80	40 - 137
Dibenzofuran	666	475		ug/Kg		71	43 - 130
Diethyl phthalate	666	455		ug/Kg		68	50 - 130
Dimethyl phthalate	666	469		ug/Kg		71	40 - 130
Di-n-butyl phthalate	666	516		ug/Kg		77	51 - 135
Di-n-octyl phthalate	666	471		ug/Kg		71	38 - 153

Method: 8270C LL - Semivolatile Organic Compounds by GCMS - Low Levels (Continued)

Lab Sample ID: LCS 600-220951/2-A
Matrix: Solid
Analysis Batch: 221013

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 220951

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoranthene	666	498		ug/Kg		75	53 - 130
Fluorene	666	475		ug/Kg		71	46 - 130
Hexachlorobenzene	666	495		ug/Kg		74	44 - 130
Hexachlorobutadiene	666	502		ug/Kg		75	36 - 130
Hexachlorocyclopentadiene	666	283		ug/Kg		42	10 - 130
Hexachloroethane	666	439		ug/Kg		66	37 - 130
Indeno[1,2,3-cd]pyrene	666	549		ug/Kg		82	35 - 146
Isophorone	666	343		ug/Kg		52	39 - 130
Naphthalene	666	460		ug/Kg		69	40 - 130
Nitrobenzene	666	410		ug/Kg		62	42 - 130
N-Nitrosodi-n-propylamine	666	428		ug/Kg		64	36 - 130
N-Nitrosodiphenylamine	666	488		ug/Kg		73	48 - 130
Pentachlorophenol	1330	651		ug/Kg		49	40 - 130
Phenanthrene	666	479		ug/Kg		72	51 - 130
Phenol	666	437		ug/Kg		66	30 - 130
Pyrene	666	508		ug/Kg		76	53 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorophenol	*80*		*25 - 132*
Nitrobenzene-d5	*68*		*10 - 155*
2-Fluorobiphenyl	*71*		*38 - 130*
2,4,6-Tribromophenol	*76*		*10 - 148*
Terphenyl-d14	*81*		*53 - 134*
Phenol-d5 (Surr)	*70*		*27 - 130*

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 560-143107/1-A
Matrix: Water
Analysis Batch: 143138

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 143107

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.050	U	0.10	0.050	mg/L		09/12/17 11:15	09/12/17 18:42	1
Antimony	0.0016	U	0.0050	0.0016	mg/L		09/12/17 11:15	09/12/17 18:42	1
Arsenic	0.0011	U	0.0050	0.0011	mg/L		09/12/17 11:15	09/12/17 18:42	1
Barium	0.00081	U	0.0050	0.00081	mg/L		09/12/17 11:15	09/12/17 18:42	1
Beryllium	0.0012	U	0.0040	0.0012	mg/L		09/12/17 11:15	09/12/17 18:42	1
Cadmium	0.00085	U	0.0020	0.00085	mg/L		09/12/17 11:15	09/12/17 18:42	1
Calcium	0.20	U	0.50	0.20	mg/L		09/12/17 11:15	09/12/17 18:42	1
Chromium	0.0014	U	0.0050	0.0014	mg/L		09/12/17 11:15	09/12/17 18:42	1
Cobalt	0.0014	U	0.0050	0.0014	mg/L		09/12/17 11:15	09/12/17 18:42	1
Copper	0.00352	J	0.010	0.0020	mg/L		09/12/17 11:15	09/12/17 18:42	1
Iron	0.10	U	0.25	0.10	mg/L		09/12/17 11:15	09/12/17 18:42	1
Lead	0.00292	J	0.0050	0.00073	mg/L		09/12/17 11:15	09/12/17 18:42	1
Magnesium	0.11	U	0.50	0.11	mg/L		09/12/17 11:15	09/12/17 18:42	1
Manganese	0.012	U	0.050	0.012	mg/L		09/12/17 11:15	09/12/17 18:42	1
Nickel	0.0022	U	0.0050	0.0022	mg/L		09/12/17 11:15	09/12/17 18:42	1
Potassium	0.41	U	1.0	0.41	mg/L		09/12/17 11:15	09/12/17 18:42	1

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 560-143107/1-A
Matrix: Water
Analysis Batch: 143138

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 143107

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	0.0011	U	0.0050	0.0011	mg/L		09/12/17 11:15	09/12/17 18:42	1
Silver	0.00094	U	0.0050	0.00094	mg/L		09/12/17 11:15	09/12/17 18:42	1
Sodium	0.73	U	1.0	0.73	mg/L		09/12/17 11:15	09/12/17 18:42	1
Thallium	0.00069	U	0.0020	0.00069	mg/L		09/12/17 11:15	09/12/17 18:42	1
Vanadium	0.0014	U	0.0050	0.0014	mg/L		09/12/17 11:15	09/12/17 18:42	1
Zinc	0.0149	J	0.025	0.0036	mg/L		09/12/17 11:15	09/12/17 18:42	1

Lab Sample ID: LCS 560-143107/2-A
Matrix: Water
Analysis Batch: 143138

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 143107

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	25.0	29.4		mg/L		118	80 - 120
Antimony	0.250	0.252		mg/L		101	80 - 120
Arsenic	0.250	0.252		mg/L		101	80 - 120
Barium	0.250	0.254		mg/L		102	80 - 120
Beryllium	0.250	0.254		mg/L		101	80 - 120
Cadmium	0.250	0.250		mg/L		100	80 - 120
Calcium	25.0	25.1		mg/L		100	80 - 120
Chromium	0.250	0.247		mg/L		99	80 - 120
Cobalt	0.250	0.248		mg/L		99	80 - 120
Copper	0.250	0.241		mg/L		96	80 - 120
Iron	25.0	23.8		mg/L		95	80 - 120
Lead	0.250	0.241		mg/L		96	80 - 120
Magnesium	25.0	24.7		mg/L		99	80 - 120
Manganese	2.50	2.54		mg/L		102	80 - 120
Nickel	0.250	0.238		mg/L		95	80 - 120
Potassium	25.0	25.2		mg/L		101	80 - 120
Selenium	0.250	0.237		mg/L		95	80 - 120
Silver	0.250	0.236		mg/L		95	80 - 120
Sodium	25.0	23.9		mg/L		96	80 - 120
Thallium	0.100	0.0958		mg/L		96	80 - 120
Vanadium	0.250	0.247		mg/L		99	80 - 120
Zinc	0.250	0.242		mg/L		97	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 560-143104/4-A
Matrix: Water
Analysis Batch: 143136

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 143104

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00013	U	0.0020	0.00013	mg/L		09/12/17 10:30	09/12/17 16:20	1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 560-143104/5-A
Matrix: Water
Analysis Batch: 143136

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 143104

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00500	0.00535		mg/L		107	80 - 120

QC Association Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Sikes Disposal Pits

TestAmerica Job ID: 600-153606-2

GC/MS VOA

Prep Batch: 220968

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-153606-7	SDP-SS-001	Total/NA	Solid	5035	

Analysis Batch: 220982

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-153606-7	SDP-SS-001	Total/NA	Solid	8260B	220968
MB 600-220982/6	Method Blank	Total/NA	Solid	8260B	
LCS 600-220982/3	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 600-220982/4	Lab Control Sample Dup	Total/NA	Solid	8260B	

GC/MS Semi VOA

Prep Batch: 220951

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-153606-7	SDP-SS-001	Total/NA	Solid	3546	
MB 600-220951/1-A	Method Blank	Total/NA	Solid	3546	
LCS 600-220951/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 221013

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 600-220951/1-A	Method Blank	Total/NA	Solid	8270C LL	220951
LCS 600-220951/2-A	Lab Control Sample	Total/NA	Solid	8270C LL	220951

Analysis Batch: 221104

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-153606-7	SDP-SS-001	Total/NA	Solid	8270C LL	220951

Metals

Prep Batch: 143104

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-153606-5	SDP-GW-001	Total/NA	Water	7470A	
600-153606-6	SDP-GW-002	Total/NA	Water	7470A	
MB 560-143104/4-A	Method Blank	Total/NA	Water	7470A	
LCS 560-143104/5-A	Lab Control Sample	Total/NA	Water	7470A	

Prep Batch: 143107

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-153606-5	SDP-GW-001	Total/NA	Water	3010A	
600-153606-6	SDP-GW-002	Total/NA	Water	3010A	
MB 560-143107/1-A	Method Blank	Total/NA	Water	3010A	
LCS 560-143107/2-A	Lab Control Sample	Total/NA	Water	3010A	

Analysis Batch: 143136

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-153606-5	SDP-GW-001	Total/NA	Water	7470A	143104
600-153606-6	SDP-GW-002	Total/NA	Water	7470A	143104
MB 560-143104/4-A	Method Blank	Total/NA	Water	7470A	143104
LCS 560-143104/5-A	Lab Control Sample	Total/NA	Water	7470A	143104

QC Association Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Sikes Disposal Pits

TestAmerica Job ID: 600-153606-2

Metals (Continued)

Analysis Batch: 143138

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-153606-5	SDP-GW-001	Total/NA	Water	6020	143107
600-153606-6	SDP-GW-002	Total/NA	Water	6020	143107
MB 560-143107/1-A	Method Blank	Total/NA	Water	6020	143107
LCS 560-143107/2-A	Lab Control Sample	Total/NA	Water	6020	143107

General Chemistry

Analysis Batch: 221062

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-153606-7	SDP-SS-001	Total/NA	Solid	2540B	

Lab Chronicle

Client: CH2M Hill Constructors, Inc.
Project/Site: Sikes Disposal Pits

TestAmerica Job ID: 600-153606-2

Client Sample ID: SDP-GW-001 — Lab Sample ID: 600-153606-5

Date Collected: 09/09/17 14:40 — **Matrix: Water**
Date Received: 09/10/17 08:08

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	143107	09/12/17 11:15	AKM	TAL CC
Total/NA	Analysis	6020		1			143138	09/12/17 19:16	JEM	TAL CC
Total/NA	Prep	7470A			50 mL	50 mL	143104	09/12/17 10:30	HHB	TAL CC
Total/NA	Analysis	7470A		1			143136	09/12/17 16:49	HHB	TAL CC

Client Sample ID: SDP-GW-002 — Lab Sample ID: 600-153606-6

Date Collected: 09/09/17 15:20 — **Matrix: Water**
Date Received: 09/10/17 08:08

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			50 mL	50 mL	143107	09/12/17 11:15	AKM	TAL CC
Total/NA	Analysis	6020		1			143138	09/12/17 19:21	JEM	TAL CC
Total/NA	Prep	7470A			50 mL	50 mL	143104	09/12/17 10:30	HHB	TAL CC
Total/NA	Analysis	7470A		1			143136	09/12/17 16:51	HHB	TAL CC

Client Sample ID: SDP-SS-001 — Lab Sample ID: 600-153606-7

Date Collected: 09/09/17 16:10 — **Matrix: Solid**
Date Received: 09/10/17 08:08

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540B		1			221062	09/11/17 16:23	B1K	TAL HOU

Client Sample ID: SDP-SS-001 — Lab Sample ID: 600-153606-7

Date Collected: 09/09/17 16:10 — **Matrix: Solid**
Date Received: 09/10/17 08:08 — **Percent Solids: 81.8**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			6.809 g	5 mL	220968	09/10/17 08:48	WS1	TAL HOU
Total/NA	Analysis	8260B		1	5 g	5 g	220982	09/11/17 10:42	WS1	TAL HOU
Total/NA	Prep	3546			15.03 g	1.0 mL	220951	09/10/17 12:18	SMB	TAL HOU
Total/NA	Analysis	8270C LL		1	1 mL	1.0 mL	221104	09/12/17 14:15	TTD	TAL HOU

Laboratory References:

TAL CC = TestAmerica Corpus Christi, 1733 N. Padre Island Drive, Corpus Christi, TX 78408, TEL (361)289-2673

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Accreditation/Certification Summary

Client: CH2M Hill Constructors, Inc.
Project/Site: Sikes Disposal Pits

TestAmerica Job ID: 600-153606-2

Laboratory: TestAmerica Houston

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Texas	NELAP	6	T104704223-17-21	10-31-17

The following analytes are included in this report, but are not accredited/certified under this accreditation/certification:

Analysis Method	Prep Method	Matrix	Analyte
8260B	5035	Solid	Methyl acetate

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

Analysis Method	Prep Method	Matrix	Analyte
2540B		Solid	Percent Moisture
2540B		Solid	Percent Solids
8260B	5035	Solid	1,2-Dichloroethene, Total
8260B	5035	Solid	Cyclohexane
8270C LL	3546	Solid	Atrazine
8270C LL	3546	Solid	Benzaldehyde

Laboratory: TestAmerica Corpus Christi

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Oklahoma	State Program	6	2017-139	08-31-18
Texas	NELAP	6	T104704210-17-20	03-31-18
USDA	Federal		P330-16-00403	12-28-19

TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Phone (713) 690-4444 Fax (713) 690-5646

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Victor Martinez	Lab PM: Upton, Cathy L	Carrier Tracking No(s): Drop @ Lab	COC No: 600-54931-16099.5
Client Contact: Mr. John Ynfante	Phone: 915-820-5668	E-Mail: cathy.upton@testamericainc.com		Page: Page 5 of 32
Company: CH2M Hill Constructors, Inc.				Job #:
Address: 14701 St. Mary's Lane Suite 300	Due Date Requested:			
City: Houston	TAT Requested (days):			
State, Zip: TX, 77079-2923				
Phone: 281-721-8546(Tel)	PO #: Purchase Order not required			
Email: john.ynfante@ch2m.com	WO #:			
Project Name: Hurricane Harvey Environmental Response	Project #: 60008995			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

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

Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020, 7471A	8260B - TCL Volatiles TX - default	8270C_LL - TCL 4.2 Default List	8082 - PCBs	300_ORGFM_28D, 9045C	6020, 7470A	8260B_LL - TCL Volatiles TX - default	9040B - pH	300_ORGFM_28D, SM2310B					Total Number of containers	Special Instructions/Note:
				Preservation Code:			N	N	N	N	N	D	A	N	N						
PSI - SS - 001	9/9/17	09:35	C	Solid				X	X			X								4	
PSI - SS - 002	9/9/17	10:10	C	Solid				X	X											5	
PSI - GW - 001	9/9/17	11:10	G	~~Solid~~ Water								X								1	
PSI - GW - 002	9/9/17	11:30	G	~~Solid~~ Water								X								1	
SDP - GW - 001	9/9/17	14:40	G	~~Solid~~ Water								X								1	
SDP - GW - 002	9/9/17	15:20	G	~~Solid~~ Water								X								1	
SDP - SS - 001	9/9/17	16:10	C	Solid				X	X											5	
				Solid																	
				Solid																	
				Solid																	
				Solid																	

600-153606 Chain of Custody

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

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

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

Special Instructions/QC Requirements:

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

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	9/9/17 17:55		Sherry JUSTUS	9/10/17 0808	TAL

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

TestAmerica Houston

Loc: 600
153606

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sample Receipt Checklist

Date/Time Received: 17 SEP 10 8:08

JOB NUMBER: _____

CLIENT: CH2M

UNPACKED BY: SJ

CARRIER/DRIVER: client

Custody Seal Present: ☒ YES ☐ NO

Number of Coolers Received: 1

Cooler ID	Temp Blank	Trip Blank	Observed Temp (°C)	Therm ID	Them CF	Corrected Temp (°C)
B/W	~~Y~~ / N	Y / ~~N~~	1.3	549	-.3	1.0
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N	SJ	9/10/17		
	Y / N	Y / N				

CF = correction factor

Samples received on ice? ☒ YES ☐ NO

LABORATORY PRESERVATION OF SAMPLES REQUIRED: ☒ NO ☐ YES

Base samples are>pH 12: ☐ YES ☐ NO

Acid preserved are<pH 2: ☒ YES ☐ NO

pH paper Lot # HC601355

VOA headspace acceptable (5-6mm): ☐ YES ☐ NO ☒ NA

	YES	NO
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	☒	

COMMENTS:

SJ 9/10/17

HS-SA-WI-013

Rev. 3; 07/01/2014

TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Phone (713) 690-4444 Fax (713) 690-5646

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler	Lab PM: Upton, Cathy L	Carrier Tracking No(s)	COC No.: 600-28397.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: cathy.upton@testamericainc.com	State of Origin: Texas	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): NELAP - Texas		Job #: 600-153606-1
Address: 1733 N. Padre Island Drive, ,	Due Date Requested: 9/13/2017			
City: Corpus Christi	TAT Requested (days):			
State, Zip: TX, 78408				
Phone: 361-289-2673(Tel) 361-289-2471(Fax)	PO #:			
Email:	WO #:			
Project Name: Hurricane Harvey Environmental Response	Project #: 60008995			
Site	SSOW#:			

Analysis Requested

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

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020/3010A Target Analyte List	7470A/7470A_Prep	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
PSI-GW-001 (600-153606-3)	9/9/17	11:10 Central		Water			X	X	1	
PSI-GW-002 (600-153606-4)	9/9/17	11:30 Central		Water			X	X	1	
SDP-GW-001 (600-153606-5)	9/9/17	14:40 Central		Water			X	X	1	
SDP-GW-002 (600-153606-6)	9/9/17	15:20 Central		Water			X	X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification
Unconfirmed

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

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 9/11/17 1700	Company: TAH	Received by:	Date/Time: 9/12/17 0940	Company: TAC
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 0052b cc 2.5°C Tell		

Login Sample Receipt Checklist

Client: CH2M Hill Constructors, Inc.

Job Number: 600-153606-2

Login Number: 153606
List Number: 1
Creator: Justus, Sherry E

List Source: TestAmerica Houston

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	1.0
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

Login Sample Receipt Checklist

Client: CH2M Hill Constructors, Inc.

Job Number: 600-153606-2

Login Number: 153606
List Number: 2
Creator: Adams, Juanita A

List Source: TestAmerica Corpus Christi
List Creation: 09/12/17 09:57 AM

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