



WAREHAM WATER POLLUTION CONTROL FACILITY

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#17-IFB-003

Long Term Disposal of Liquid Sludge From Wareham Water Pollution Control Facility

June 8, 2017

PROJECT: Disposal of Liquid Sludge
DATE ISSUED: June 1, 2017

ADDENDUM NO. 2

The specification documents for the above-referenced project are hereby amended and/or clarified as per the particular listed below:

Attachment 1 Sludge Analytical Testing Reports

BIDDER MUST ACKNOWLEDGE RECEIPT OF THIS ADDENDUM BY SIGNING BELOW AND INCLUDING THIS ADDENDUM IN THEIR BID SUBMITTAL.

Signature of Authorized Bidder

Date



ANALYTICAL REPORT

Lab Number:	L1700766
Client:	Wareham WPCF 6 Tony's Lane Wareham, MA 02571
ATTN:	George Holdsworth
Phone:	(508) 295-6144
Project Name:	Not Specified
Project Number:	Not Specified
Report Date:	01/24/17

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Certifications & Approvals: MA (M-MA086), NY (11148), CT (PH-0574), NH (2003), NJ NELAP (MA935), RI (LAO00065), ME (MA00086), PA (68-03671), VA (460195), MD (348), IL (200077), NC (666), TX (T104704476), DOD (L2217), USDA (Permit #P-330-11-00240).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com



Serial_No:01241714:28

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L1700766
Report Date: 01/24/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1700766-01	SLUDGE	SLUDGE	Not Specified	01/09/17 10:30	01/10/17

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L1700766
Report Date: 01/24/17

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEX data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L1700766
Report Date: 01/24/17

Case Narrative (continued)

TCLP Herbicides

WG970115-2/-3: One or more compounds failed to meet the recovery and/or RPD limits. Please refer to the QC section of the report for specific details.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

Melissa Cripps Melissa Cripps

Title: Technical Director/Representative

Date: 01/24/17

ORGANICS



VOLATILES

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L1700766
Report Date: 01/24/17

SAMPLE RESULTS

Lab ID: L1700766-01
 Client ID: SLUDGE
 Sample Location: Not Specified
 Matrix: Sludge
 Analytical Method: 1,8260C
 Analytical Date: 01/16/17 07:44
 Analyst: MM
 Percent Solids: 7%
 TCLP/SPLP Ext. Date: 01/12/17 12:18

Date Collected: 01/09/17 10:30
 Date Received: 01/10/17
 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
TCLP Volatiles by EPA 1311 - Westborough Lab						
Chloroform	ND		ug/l	7.5	--	10
Carbon tetrachloride	ND		ug/l	5.0	--	10
Tetrachloroethene	ND		ug/l	5.0	--	10
Chlorobenzene	ND		ug/l	5.0	--	10
1,2-Dichloroethane	ND		ug/l	5.0	--	10
Benzene	ND		ug/l	5.0	--	10
Vinyl chloride	ND		ug/l	10	--	10
1,1-Dichloroethene	ND		ug/l	5.0	--	10
Trichloroethene	ND		ug/l	5.0	--	10
1,4-Dichlorobenzene	ND		ug/l	25	--	10
2-Butanone	220		ug/l	50	--	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	115		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	102		70-130
dibromofluoromethane	118		70-130



Project Name: Not Specified
Project Number: Not Specified

Lab Number: L1700766
Report Date: 01/24/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
 Analytical Date: 01/16/17 06:03
 Analyst: MM
 TCLP/SPLP Extraction Date: 01/12/17 12:18

Extraction Date: 01/12/17 12:18

Parameter	Result	Qualifier	Units	RL	MDL
TCLP Volatiles by EPA 1311 - Westborough Lab for sample(s): 01 Batch: WG969951-5					
Chloroform	ND		ug/l	7.5	--
Carbon tetrachloride	ND		ug/l	5.0	--
Tetrachloroethene	ND		ug/l	5.0	--
Chlorobenzene	ND		ug/l	5.0	--
1,2-Dichloroethane	ND		ug/l	5.0	--
Benzene	ND		ug/l	5.0	--
Vinyl chloride	ND		ug/l	10	--
1,1-Dichloroethene	ND		ug/l	5.0	--
Trichloroethene	ND		ug/l	5.0	--
1,4-Dichlorobenzene	ND		ug/l	25	--
2-Butanone	ND		ug/l	50	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	107		70-130
dibromofluoromethane	109		70-130



Serial_No:01241714:28

Lab Control Sample Analysis
Batch Quality Control

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L1700766
Report Date: 01/24/17

Parameter	LCS		LCSD		%Recovery Limits	RPD	Qual	RPD Limits
	%Recovery	Qual	%Recovery	Qual				
TCLP Volatiles by EPA 1311 - Westborough Lab Associated sample(s): 01 Batch: WG969951-3 WG969951-4								
Chloroform	100		100		70-130	0		20
Carbon tetrachloride	100		99		63-132	1		20
Tetrachloroethene	95		93		70-130	2		20
Chlorobenzene	97		96		75-130	1		25
1,2-Dichloroethane	100		99		70-130	1		20
Benzene	100		100		70-130	0		25
Vinyl chloride	89		88		55-140	1		20
1,1-Dichloroethene	110		99		61-145	11		25
Trichloroethene	100		100		70-130	0		25
1,4-Dichlorobenzene	92		93		70-130	1		20
2-Butanone	110		120		63-138	9		20

Surrogate	LCS		LCSD		Acceptance Criteria
	%Recovery	Qual	%Recovery	Qual	
1,2-Dichloroethane-d4	97		96		70-130
Toluene-d8	100		100		70-130
4-Bromofluorobenzene	100		103		70-130
dibromofluoromethane	103		99		70-130



SEMIVOLATILES

Project Name: Not Specified

Lab Number: L1700766

Project Number: Not Specified

Report Date: 01/24/17

SAMPLE RESULTS

Lab ID: L1700766-01
 Client ID: SLUDGE
 Sample Location: Not Specified
 Matrix: Sludge
 Analytical Method: 1,8270D
 Analytical Date: 01/19/17 14:40
 Analyst: CB
 Percent Solids: 7%
 TCLP/SPLP Ext. Date: 01/15/17 18:22

Date Collected: 01/09/17 10:30
 Date Received: 01/10/17
 Field Prep: Not Specified
 Extraction Method: EPA 3510C
 Extraction Date: 01/18/17 21:28

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
TCLP Semivolatiles by EPA 1311 - Westborough Lab						
Hexachlorobenzene	ND		ug/l	10	--	1
2,4-Dinitrotoluene	ND		ug/l	25	--	1
Hexachlorobutadiene	ND		ug/l	10	--	1
Hexachloroethane	ND		ug/l	10	--	1
Nitrobenzene	ND		ug/l	10	--	1
2,4,6-Trichlorophenol	ND		ug/l	25	--	1
Pentachlorophenol	ND		ug/l	50	--	1
2-Methylphenol	ND		ug/l	25	--	1
3-Methylphenol/4-Methylphenol	210		ug/l	25	--	1
2,4,5-Trichlorophenol	ND		ug/l	25	--	1
Pyridine	ND		ug/l	18	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	67		21-120
Phenol-d6	82		10-120
Nitrobenzene-d5	94		23-120
2-Fluorobiphenyl	81		15-120
2,4,6-Tribromophenol	75		10-120
4-Terphenyl-d14	82		33-120

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L1700766
Report Date: 01/24/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 01/19/17 13:24
Analyst: CB
TCLP/SPLP Extraction Date: 01/15/17 18:22

Extraction Method: EPA 3510C
Extraction Date: 01/18/17 21:28

Parameter	Result	Qualifier	Units	RL	MDL
TCLP Semivolatiles by EPA 1311 - Westborough Lab for sample(s): 01 Batch: WG970809-1					
Hexachlorobenzene	ND		ug/l	10	--
2,4-Dinitrotoluene	ND		ug/l	25	--
Hexachlorobutadiene	ND		ug/l	10	--
Hexachloroethane	ND		ug/l	10	--
Nitrobenzene	ND		ug/l	10	--
2,4,6-Trichlorophenol	ND		ug/l	25	--
Pentachlorophenol	ND		ug/l	50	--
2-Methylphenol	ND		ug/l	25	--
3-Methylphenol/4-Methylphenol	ND		ug/l	25	--
2,4,5-Trichlorophenol	ND		ug/l	25	--
Pyridine	ND		ug/l	18	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	48		21-120
Phenol-d6	55		10-120
Nitrobenzene-d5	73		23-120
2-Fluorobiphenyl	67		15-120
2,4,6-Tribromophenol	63		10-120
4-Terphenyl-d14	71		33-120

Serial_No:01241714:28

Lab Control Sample Analysis
Batch Quality Control

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L1700766
Report Date: 01/24/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
TCLP Semivolatiles by EPA 1311 - Westborough Lab Associated sample(s): 01 Batch: WG970809-2 WG970809-3								
Hexachlorobenzene	72		71		40-140	1		30
2,4-Dinitrotoluene	79		80		40-132	1		30
Hexachlorobutadiene	73		78		28-111	7		30
Hexachloroethane	59		66		21-105	11		30
Nitrobenzene	79		87		40-140	10		30
2,4,6-Trichlorophenol	86		83		30-130	4		30
Pentachlorophenol	74		73		9-103	1		30
2-Methylphenol	76		83		30-130	9		30
3-Methylphenol/4-Methylphenol	74		80		30-130	8		30
2,4,5-Trichlorophenol	87		87		30-130	0		30
Pyridine	48		12		10-66	120	Q	30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	64		65		21-120
Phenol-d6	68		72		10-120
Nitrobenzene-d5	78		85		23-120
2-Fluorobiphenyl	71		72		15-120
2,4,6-Tribromophenol	65		69		10-120
4-Terphenyl-d14	72		72		33-120



PESTICIDES

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L1700766
Report Date: 01/24/17

SAMPLE RESULTS

Lab ID: L1700766-01
 Client ID: SLUDGE
 Sample Location: Not Specified
 Matrix: Sludge
 Analytical Method: 1,8081B
 Analytical Date: 01/19/17 21:09
 Analyst: RL
 Percent Solids: 7%
 TCLP/SPLP Ext. Date: 01/15/17 18:22

Date Collected: 01/09/17 10:30
 Date Received: 01/10/17
 Field Prep: Not Specified
 Extraction Method: EPA 3510C
 Extraction Date: 01/18/17 21:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
TCLP Pesticides by EPA 1311 - Westborough Lab							
Lindane	ND		ug/l	0.100	--	1	A
Heptachlor	ND		ug/l	0.100	--	1	A
Heptachlor epoxide	ND		ug/l	0.100	--	1	A
Endrin	ND		ug/l	0.200	--	1	A
Methoxychlor	ND		ug/l	1.00	--	1	A
Toxaphene	ND		ug/l	1.00	--	1	A
Chlordane	ND		ug/l	1.00	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	54		30-150	A
Decachlorobiphenyl	60		30-150	A
2,4,5,6-Tetrachloro-m-xylene	38		30-150	B
Decachlorobiphenyl	64		30-150	B



Serial_No:01241714:28

Project Name: Not Specified

Lab Number: L1700766

Project Number: Not Specified

Report Date: 01/24/17

SAMPLE RESULTS

Lab ID: L1700766-01

Date Collected: 01/09/17 10:30

Client ID: SLUDGE

Date Received: 01/10/17

Sample Location: Not Specified

Field Prep: Not Specified

Matrix: Sludge

Extraction Method: EPA 8151A

Analytical Method: 1,8151A

Extraction Date: 01/16/17 22:30

Analytical Date: 01/18/17 13:49

Analyst: DM

Percent Solids: 7%

TCLP/SPLP Ext. Date: 01/15/17 18:22

Methylation Date: 01/17/17 21:27

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
TCLP Herbicides by EPA 1311 - Westborough Lab							
2,4-D	ND		mg/l	0.025	--	1	A
2,4,5-TP (Silvex)	ND		mg/l	0.005	--	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
DCAA	78		30-150	A
DCAA	77		30-150	B



Project Name: Not Specified
Project Number: Not Specified

Lab Number: L1700766
Report Date: 01/24/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8151A
Analytical Date: 01/18/17 13:28
Analyst: DM
TCLP/SPLP Extraction Date: 01/15/17 18:22
Methylation Date: 01/17/17 21:27

Extraction Method: EPA 8151A
Extraction Date: 01/16/17 22:30

Parameter	Result	Qualifier	Units	RL	MDL	Column
TCLP Herbicides by EPA 1311 - Westborough Lab for sample(s): 01 Batch: WG970115-1						
2,4-D	ND		mg/l	0.025	--	A
2,4,5-TP (Silvex)	ND		mg/l	0.005	--	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
DCAA	82		30-150	A
DCAA	68		30-150	B



Project Name: Not Specified
Project Number: Not Specified

Lab Number: L1700766
Report Date: 01/24/17

**Method Blank Analysis
 Batch Quality Control**

Analytical Method: 1,8081B
 Analytical Date: 01/19/17 20:04
 Analyst: KEG
 TCLP/SPLP Extraction Date: 01/15/17 18:22

Extraction Method: EPA 3510C
 Extraction Date: 01/18/17 21:36

Parameter	Result	Qualifier	Units	RL	MDL	Column
TCLP Pesticides by EPA 1311 - Westborough Lab for sample(s): 01 Batch: WG970810-1						
Lindane	ND		ug/l	0.100	--	A
Heptachlor	ND		ug/l	0.100	--	A
Heptachlor epoxide	ND		ug/l	0.100	--	A
Endrin	ND		ug/l	0.200	--	A
Methoxychlor	ND		ug/l	1.00	--	A
Toxaphene	ND		ug/l	1.00	--	A
Chlordane	ND		ug/l	1.00	--	A

Surrogate	%Recovery	Qualifier	Acceptance	
			Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	73		30-150	A
Decachlorobiphenyl	75		30-150	A
2,4,5,6-Tetrachloro-m-xylene	52		30-150	B
Decachlorobiphenyl	79		30-150	B



Serial_No:01241714:28

Lab Control Sample Analysis
Batch Quality Control

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L1700766
Report Date: 01/24/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
TCLP Herbicides by EPA 1311 - Westborough Lab Associated sample(s): 01 Batch: WG970115-2 WG970115-3									
2,4-D	199	Q	102		30-150	64	Q	25	A
2,4,5-TP (Silvex)	55		48		30-150	14		25	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
DCAA	71		61		30-150	A
DCAA	80		66		30-150	B



Serial_No:01241714:28

Lab Control Sample Analysis
Batch Quality Control

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L1700766
Report Date: 01/24/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
TCLP Pesticides by EPA 1311 - Westborough Lab Associated sample(s): 01 Batch: WG970810-2 WG970810-3									
Lindane	86		94		30-150	9		20	A
Heptachlor	82		94		30-150	14		20	A
Heptachlor epoxide	91		102		30-150	12		20	A
Endrin	101		112		30-150	10		20	A
Methoxychlor	94		106		30-150	12		20	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	56		62		30-150	A
Decachlorobiphenyl	62		71		30-150	A
2,4,5,6-Tetrachloro-m-xylene	41		45		30-150	B
Decachlorobiphenyl	64		75		30-150	B



METALS



Project Name: Not Specified

Lab Number: L1700766

Project Number: Not Specified

Report Date: 01/24/17

SAMPLE RESULTS

Lab ID: L1700766-01

Date Collected: 01/09/17 10:30

Client ID: SLUDGE

Date Received: 01/10/17

Sample Location: Not Specified

Field Prep: Not Specified

Matrix: Sludge

TCLP/SPLP Ext. Date: 01/15/17 18:22

Percent Solids: 7%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab											
Arsenic, TCLP	ND		mg/l	1.0	--	1	01/17/17 13:58	01/18/17 03:08	EPA 3015	1,6010C	AB
Barium, TCLP	ND		mg/l	0.50	--	1	01/17/17 13:58	01/18/17 03:08	EPA 3015	1,6010C	AB
Cadmium, TCLP	ND		mg/l	0.10	--	1	01/17/17 13:58	01/18/17 03:08	EPA 3015	1,6010C	AB
Chromium, TCLP	ND		mg/l	0.20	--	1	01/17/17 13:58	01/18/17 03:08	EPA 3015	1,6010C	AB
Lead, TCLP	ND		mg/l	0.50	--	1	01/17/17 13:58	01/18/17 03:08	EPA 3015	1,6010C	AB
Mercury, TCLP	ND		mg/l	0.0010	--	1	01/23/17 13:44	01/23/17 19:04	EPA 7470A	1,7470A	EA
Selenium, TCLP	ND		mg/l	0.50	--	1	01/17/17 13:58	01/18/17 03:08	EPA 3015	1,6010C	AB
Silver, TCLP	ND		mg/l	0.10	--	1	01/17/17 13:58	01/18/17 03:08	EPA 3015	1,6010C	AB



Project Name: Not Specified

Lab Number: L1700766

Project Number: Not Specified

Report Date: 01/24/17

Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab for sample(s): 01 Batch: WG970010-1									
Arsenic, TCLP	ND	mg/l	1.0	--	1	01/17/17 13:58	01/18/17 02:04	1,6010C	AB
Barium, TCLP	ND	mg/l	0.50	--	1	01/17/17 13:58	01/18/17 02:04	1,6010C	AB
Cadmium, TCLP	ND	mg/l	0.10	--	1	01/17/17 13:58	01/18/17 02:04	1,6010C	AB
Chromium, TCLP	ND	mg/l	0.20	--	1	01/17/17 13:58	01/18/17 02:04	1,6010C	AB
Lead, TCLP	ND	mg/l	0.50	--	1	01/17/17 13:58	01/18/17 02:04	1,6010C	AB
Selenium, TCLP	ND	mg/l	0.50	--	1	01/17/17 13:58	01/18/17 02:04	1,6010C	AB
Silver, TCLP	ND	mg/l	0.10	--	1	01/17/17 13:58	01/18/17 02:04	1,6010C	AB

Prep Information

Digestion Method: EPA 3015

TCLP/SPLP Extraction Date: 01/15/17 18:22

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
TCLP Metals by EPA 1311 - Mansfield Lab for sample(s): 01 Batch: WG971814-1									
Mercury, TCLP	ND	mg/l	0.0010	--	1	01/23/17 13:44	01/23/17 19:00	1,7470A	EA

Prep Information

Digestion Method: EPA 7470A

TCLP/SPLP Extraction Date: 01/15/17 18:22



Serial_No:01241714:28

Lab Control Sample Analysis
Batch Quality Control

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L1700766
Report Date: 01/24/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 01 Batch: WG970010-2								
Arsenic, TCLP	100		-		75-125	-		20
Barium, TCLP	85		-		75-125	-		20
Cadmium, TCLP	94		-		75-125	-		20
Chromium, TCLP	90		-		75-125	-		20
Lead, TCLP	94		-		75-125	-		20
Selenium, TCLP	100		-		75-125	-		20
Silver, TCLP	88		-		75-125	-		20
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 01 Batch: WG971814-2								
Mercury, TCLP	102		-		80-120	-		



Serial_No:01241714:28

Matrix Spike Analysis
Batch Quality Control

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L1700766
Report Date: 01/24/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual	MSD Found	MSD %Recovery	MSD Qual	Recovery Limits	RPD	RPD Qual	RPD Limits
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG970010-3 QC Sample: L1701350-01 Client ID: MS Sample												
Arsenic, TCLP	ND	1.2	1.2	100	-	-	-	-	75-125	-	-	20
Barium, TCLP	ND	20	18	90	-	-	-	-	75-125	-	-	20
Cadmium, TCLP	ND	0.51	0.51	100	-	-	-	-	75-125	-	-	20
Chromium, TCLP	ND	2	1.8	90	-	-	-	-	75-125	-	-	20
Lead, TCLP	ND	5.1	4.8	94	-	-	-	-	75-125	-	-	20
Selenium, TCLP	ND	1.2	1.2	100	-	-	-	-	75-125	-	-	20
Silver, TCLP	ND	0.5	0.45	90	-	-	-	-	75-125	-	-	20
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG971814-3 QC Sample: L1700766-01 Client ID: SLUDGE												
Mercury, TCLP	ND	0.025	0.0240	96	-	-	-	-	80-120	-	-	20



Serial_No:01241714:28

Lab Duplicate Analysis
Batch Quality Control

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L1700766
Report Date: 01/24/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG970010-4 QC Sample: L1701350-01 Client ID: DUP Sample						
Arsenic, TCLP	ND	ND	mg/l	NC		20
Barium, TCLP	ND	ND	mg/l	NC		20
Cadmium, TCLP	ND	ND	mg/l	NC		20
Chromium, TCLP	ND	ND	mg/l	NC		20
Lead, TCLP	ND	ND	mg/l	NC		20
Selenium, TCLP	ND	ND	mg/l	NC		20
Silver, TCLP	ND	ND	mg/l	NC		20
TCLP Metals by EPA 1311 - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG971814-4 QC Sample: L1700766-01 Client ID: SLUDGE						
Mercury, TCLP	ND	ND	mg/l	NC		20



INORGANICS & MISCELLANEOUS

Serial_No:01241714:28

Project Name: Not Specified

Lab Number: L1700766

Project Number: Not Specified

Report Date: 01/24/17

SAMPLE RESULTS

Lab ID: L1700766-01

Date Collected: 01/09/17 10:30

Client ID: SLUDGE

Date Received: 01/10/17

Sample Location: Not Specified

Field Prep: Not Specified

Matrix: Sludge

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	6.75		%	0.100	NA	1	-	01/11/17 13:03	121,2540G	RI



Serial_No:01241714:28

Lab Duplicate Analysis
Batch Quality Control

Project Name: Not Specified
Project Number: Not Specified

Lab Number: L1700766
Report Date: 01/24/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG968720-1 QC Sample: L1700808-21 Client ID: DUP Sample						
Solids, Total	89.8	90.2	%	0		20



Project Name: Not Specified

Lab Number: L1700766

Project Number: Not Specified

Report Date: 01/24/17

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information Custody Seal**Cooler**

A Absent

Container Information

Container ID	Container Type	Cooler	pH	Temp deg C	Pres	Seal	Analysis(*)
L1700766-01A	Vial Large Septa unpreserved (4o	A	N/A	3.1	Y	Absent	TCLP-EXT-ZHE(14)
L1700766-01B	Glass 500ml/16oz unpreserved	A	N/A	3.1	Y	Absent	-
L1700766-01C	Plastic 2oz unpreserved for TS	A	N/A	3.1	Y	Absent	TS(7)
L1700766-01S	Vial unpreserved split	A	N/A	3.1	Y	Absent	TCLP-VOA(14)
L1700766-01T	Vial unpreserved split	A	N/A	3.1	Y	Absent	TCLP-VOA(14)
L1700766-01X	Plastic 120ml HNO3 preserved spl	A	<2	3.1	Y	Absent	CD-CI(180),AS-CI(180),BA-CI(180),HG-C(28),PB-CI(180),CR-CI(180),SE-CI(180),AG-CI(180)
L1700766-01X9	Tumble Vessel	A	N/A	3.1	Y	Absent	-
L1700766-01Y	Amber 1000ml unpreserved split	A	N/A	3.1	Y	Absent	TCLP-8270(14),HERB-TCLP*(14),PEST-TCLP*(14)

*Values in parentheses indicate holding time in days



Project Name: Not Specified
Project Number: Not Specified

Lab Number: L1700766
Report Date: 01/24/17

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the

Report Format: Data Usability Report



Project Name: Not Specified
Project Number: Not Specified

Lab Number: L1700766
Report Date: 01/24/17

Data Qualifiers

reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report



Project Name: Not Specified
Project Number: Not Specified

Lab Number: L1700766
Report Date: 01/24/17

REFERENCES

- 1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Alpha Analytical, Inc.
 Facility: **Company-wide**
 Department: **Quality Assurance**
 Title: **Certificate/Approval Program Summary**

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624: m/p-xylene, o-xylene
 EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
 EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
 EPA 300: DW: Bromide
 EPA 6860: NPW and SCM: Perchlorate
 EPA 9010: NPW and SCM: Amenable Cyanide Distillation
 EPA 9012B: NPW: Total Cyanide
 EPA 9050A: NPW: Specific Conductance
 SM3500: NPW: Ferrous Iron
 SM4500: NPW: Amenable Cyanide, Dissolved Oxygen; SCM: Total Phosphorus, TKN, NO2, NO3.
 SM5310C: DW: Dissolved Organic Carbon

Mansfield Facility

SM 2540D: TSS
 EPA 3005A NPW
 EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
 EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
 Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water

EPA 300.0: Nitrate-N, Fluoride, Sulfate; EPA 353.2: Nitrate-N, Nitrite-N; SM4500NO3-F: Nitrate-N, Nitrite-N; SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B
 EPA 332: Perchlorate; EPA 524.2: THMs and VOCs; EPA 504.1: EDB, DBCP.
 Microbiology: SM9215B; SM9223-P/A, SM9223B-Collert-QT, SM9222D.

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH, EPA 350.1: Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, SM4500NO3-F, EPA 353.2: Nitrate-N, EPA 351.1, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D.
 EPA 624: Volatile Halocarbons & Aromatics,
 EPA 608: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
 EPA 625: SVOC (Acid/Base/Neutral Extractables), EPA 600/4-81-045: PCB-Oil.
 Microbiology: SM9223B-Collert-QT; Enterolert-QT, SM9221E.

Mansfield Facility:

Drinking Water

EPA 200.7: Ba, Be, Cd, Cr, Cu, Ni, Na, Ca. EPA 200.8: Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se, TL. EPA 245.1 Hg.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
 EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn.
 EPA 245.1 Hg.
 SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.