



#### ANALYTICAL REPORT

Lab Number: L1725482

Client: Blueleaf Incorporated

57 Dresser Hill Road Charlton, MA 01507

ATTN: Erik Grotton

Phone: (508) 248-7094

Project Name: BARNSTABLE

Project Number: 20107 Report Date: 08/17/17

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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



Project Name: BARNSTABLE

Project Number: 20107

**Lab Number:** L1725482 **Report Date:** 08/17/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1725482-01	RAW-2	DW	MAITEL	07/25/17 11:00	07/25/17
L1725482-02	FILTER A-2	DW	MATTEL	07/25/17 11:00	07/25/17
L1725482-03	FILTER C-2	DW	MATTEL	07/25/17 11:00	07/25/17
L1725482-04	FILTER E-2	DW	MATTEL	07/25/17 11:00	07/25/17
L1725482-05	FILTER F-2	DW	MATTEL	07/25/17 11:00	07/25/17
L1725482-06	UV-2	DW	MATTEL	07/25/17 11:00	07/25/17



Project Name: BARNSTABLE Lab Number: L1725482

Project Number: 20107 Report Date: 08/17/17

#### **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:BARNSTABLELab Number:L1725482Project Number:20107Report Date:08/17/17

#### **Case Narrative (continued)**

#### Sample Receipt

The samples were not appropriately preserved for the 522 analysis; the analysis was cancelled at the client's request.

#### Semivolatile Organics

The surrogate recovery is outside the individual acceptance criteria for perfluoro-n-[1,2-13c2]decanoic acid (13c-pfda). The results of the original analysis are reported.

L1725482-01: 136% L1725482-04: 139% L1725482-05: 131% L1725482-06: 142%

The internal standard (IS) response for 13C2-PFOA and 13C-PFOS were above the acceptance criteria;

however, re-analysis achieved similar results.

L1725482-01: 131%/178% L1725482-04: 183%/195% L1725482-05: 168%/181% L1725482-06: 178%/186% WG1027227-2/-3: 132%/131%

WG1027227-1: The surrogate recoveries are above the acceptance criteria for perfluoro-n-[1,2-

13c2]hexanoic acid (13c-pfhxa) (132%) and perfluoro-n-[1,2-13c2]decanoic acid (13c-pfda) (153%).

The WG1027227-2 LCS recovery is outside the acceptance criteria for perfluorooctanoic acid (pfoa) (145%).

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:

Title: Technical Director/Representative Date: 08/17/17

Custen Walker Cristin Walker

ALPHA

### **ORGANICS**



### **SEMIVOLATILES**



Project Name: BARNSTABLE Lab Number: L1725482

Project Number: 20107 Report Date: 08/17/17

**SAMPLE RESULTS** 

Lab ID: L1725482-01 Date Collected: 07/25/17 11:00

Client ID: RAW-2 Date Received: 07/25/17
Sample Location: MAITEL Field Prep: Not Specified
Extraction Method: EPA 537

Matrix: Dw Extraction Date: 07/31/17 06:00
Analytical Method: 122,537

Analytical Date: 08/16/17 09:24

Qualifier Units RL MDL **Dilution Factor Parameter** Result Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab Perfluorooctanoic Acid (PFOA) 18.6 1.85 1 ng/l 83.2 Perfluorooctanesulfonic Acid (PFOS) 1.85 1 ng/l

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	128		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	136	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	101		70-130



Analyst:

AR

Project Name: BARNSTABLE Lab Number: L1725482

Project Number: 20107 Report Date: 08/17/17

**SAMPLE RESULTS** 

Lab ID: L1725482-04 Date Collected: 07/25/17 11:00

Client ID: FILTER E-2 Date Received: 07/25/17
Sample Location: MATTEL Field Prep: Not Specified
Extraction Method: EPA 537

Matrix: Dw Extraction Method: Extraction Date: 07/31/17 06:00
Analytical Method: 122,537

Analytical Date: 08/16/17 09:33
Analyst: AR

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor		
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab								
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.85		1		
Perfluorooctanesulfonic Acid (PFOS)	ND		na/l	1.85		1		

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	122		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	139	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	104		70-130



Project Name: BARNSTABLE Lab Number: L1725482

Project Number: 20107 Report Date: 08/17/17

**SAMPLE RESULTS** 

Lab ID: L1725482-05 Date Collected: 07/25/17 11:00

Client ID: FILTER F-2 Date Received: 07/25/17
Sample Location: MATTEL Field Prep: Not Specified

Matrix: Dw Extraction Method:EPA 537
Extraction Date: 07/31/17 06:00

Analytical Method: 122,537
Analytical Date: 08/16/17 09:43

Analyst: AR

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor		
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab								
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.85		1		
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.85		1		

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	122		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	131	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	107		70-130



Project Name: BARNSTABLE Lab Number: L1725482

Project Number: 20107 Report Date: 08/17/17

**SAMPLE RESULTS** 

Lab ID: L1725482-06 Date Collected: 07/25/17 11:00

Client ID: UV-2 Date Received: 07/25/17
Sample Location: MATTEL Field Prep: Not Specified
Extraction Method: EPA 537

Matrix: Dw Extraction Date: 07/31/17 06:00
Analytical Method: 122,537

Analyst: AR

08/16/17 09:52

Analytical Date:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor		
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab								
Perfluorooctanoic Acid (PFOA)	19.0		ng/l	1.92		1		
Perfluorooctanesulfonic Acid (PFOS)	90.6		ng/l	1.92		1		

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	118		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	142	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	98		70-130



L1725482

07/31/17 06:00

Lab Number:

Extraction Date:

Project Name: BARNSTABLE

Project Number: 20107 Report Date: 08/17/17

Method Blank Analysis Batch Quality Control

Analytical Method: 122,537

Analytical Date: 08/16/17 09:15

Analyst: AR

Extraction Method: EPA 537

Parameter	Result	Qualifier	Units	RL	MDL	<u>-</u>
Perfluorinated Alkyl Acids by EPA 5	37 - Mansfi	eld Lab for	sample(s):	01,04-06	Batch:	WG1027227-1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00		
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00		

			Acceptance	
Surrogate	%Recovery	Qualifier	Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	132	Q	70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	153	Q	70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	108		70-130	



## Lab Control Sample Analysis Batch Quality Control

Project Name: BARNSTABLE

**Project Number:** 20107

Lab Number: L1725482

**Report Date:** 08/17/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recove Limits	ry RPD	Qual	RPD Limits	
Perfluorinated Alkyl Acids by EPA 537 - N	Mansfield Lab Associ	ciated sample(	s): 01,04-06	Batch: V	WG1027227-2	WG1027227-3			
Perfluorooctanoic Acid (PFOA)	146	Q	129		70-130	12		30	
Perfluorooctanesulfonic Acid (PFOS)	126		117		70-130	7		30	

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA) Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA) N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	129 <b>132</b> 104	Q	125 <b>131</b> 96	Q	70-130 70-130 70-130	



### **METALS**



Project Name:BARNSTABLELab Number:L1725482Project Number:20107Report Date:08/17/17

SAMPLE RESULTS

Lab ID: L1725482-01
Client ID: RAW-2
Sample Location: MAITEL
Matrix: Dw

Date Collected: 07/25/17 11:00

Date Received: 07/25/17

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Man	sfield Lab										
Iron, Total	ND		mg/l	0.050		1	07/26/17 10:00	0 07/27/17 17:20	EPA 3005A	19,200.7	PS
Manganese, Total	0.1154		mg/l	0.0010		1	07/26/17 10:00	0 07/27/17 15:31	EPA 3005A	3,200.8	AM



Project Name:BARNSTABLELab Number:L1725482Project Number:20107Report Date:08/17/17

SAMPLE RESULTS

Lab ID:L1725482-02Date Collected:07/25/17 11:00Client ID:FILTER A-2Date Received:07/25/17Sample Location:MATTELField Prep:Not Specified

Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Man	sfield Lab										
Iron, Total	ND		mg/l	0.050		1	07/26/17 10:00	07/27/17 17:25	EPA 3005A	19,200.7	PS
Manganese, Total	ND		mg/l	0.010		1	07/26/17 10:00	07/27/17 17:25	EPA 3005A	19,200.7	PS



Not Specified

**Project Name: BARNSTABLE** Lab Number: L1725482

**Project Number: Report Date:** 20107 08/17/17

**SAMPLE RESULTS** 

Lab ID: L1725482-03 Date Collected: 07/25/17 11:00 Client ID: FILTER C-2 Date Received: 07/25/17

Sample Location: **MATTEL** Matrix: Dw

Analytical Method Dilution Date Date Prep **Factor** Prepared **Analyzed** Method **Parameter** Result Qualifier Units RL MDL Analyst Total Metals - Mansfield Lab Iron, Total ND 0.050 1 07/26/17 10:00 07/27/17 17:30 EPA 3005A 19,200.7 mg/l PS Manganese, Total ND mg/l 0.010 1 07/26/17 10:00 07/27/17 17:30 EPA 3005A 19,200.7 PS

Field Prep:



Project Name: BARNSTABLE

**Project Number: 20107** 

Lab Number:

L1725482

Report Date:

08/17/17

# Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfi	eld Lab for sample(s):	01-03 B	atch: W	G10258	31-1				
Iron, Total	ND	mg/l	0.050		1	07/26/17 10:00	07/27/17 15:53	19,200.7	PS
Manganese, Total	ND	mg/l	0.010		1	07/26/17 10:00	07/27/17 15:53	19,200.7	PS

**Prep Information** 

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfie	ld Lab for sample(s):	01 Batcl	h: WG10	025832-	·1				
Manganese, Total	ND	mg/l	0.0010		1	07/26/17 10:00	07/27/17 15:06	3,200.8	AM

**Prep Information** 

Digestion Method: EPA 3005A



## Lab Control Sample Analysis Batch Quality Control

**Project Name:** BARNSTABLE

Lab Number:

L1725482

**Project Number:** 20107

Report Date: 08/17/17

Parameter	LCS %Recovery Qu	LCSD ual %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits		
Total Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG1025831-2									
Iron, Total	102	-		85-115	-				
Manganese, Total	100	-		85-115	-				
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG1025832-2									
Manganese, Total	106	-		85-115	-				



### Matrix Spike Analysis Batch Quality Control

Project Name: BARNSTABLE

Project Number: 20107

Lab Number: L1725482

**Report Date:** 08/17/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Recover Qual Limits	y RPD Qual	RPD Limits
Total Metals - Mansfield Lab	Associated sam	nple(s): 01-03	3 QC Bat	ch ID: WG102	5831-3	QC Sam	nple: L1725414-	01 Client ID: N	/IS Sample	
Iron, Total	0.592	1	1.65	106		-	-	75-125	-	20
Manganese, Total	0.159	0.5	0.669	102		-	-	75-125	-	20
Total Metals - Mansfield Lab	Associated sam	nple(s): 01-03	3 QC Bat	ch ID: WG102	5831-7	QC Sam	nple: L1725501-	03 Client ID: N	/IS Sample	
Iron, Total	0.905	1	2.00	110		-	-	75-125	-	20
Manganese, Total	0.036	0.5	0.551	103		-	-	75-125	-	20
Total Metals - Mansfield Lab	Associated sam	nple(s): 01	QC Batch	ID: WG102583	32-3 C	QC Sample	e: L1725414-01	Client ID: MS	Sample	
Manganese, Total	0.1609	0.5	0.7088	110		-	-	70-130	-	20

Lab Duplicate Analysis
Batch Quality Control

Lab Number:

L1725482

Report Date:

08/17/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual RF	PD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-0	03 QC Batch ID:	WG1025831-8 QC Sample:	L1725501-03	Client ID:	DUP Sample	
Iron, Total	0.905	0.907	mg/l	0		20



**Project Name:** 

**Project Number:** 20107

BARNSTABLE

## INORGANICS & MISCELLANEOUS



Project Name: BARNSTABLE Lab Number: L1725482

Project Number: 20107 Report Date: 08/17/17

**SAMPLE RESULTS** 

Lab ID: L1725482-01

Client ID: RAW-2 Sample Location: MAITEL Matrix: Dw Date Collected: 07/25/17 11:00

Date Received: 07/25/17 Field Prep: Not Specified

Parameter	Result Q	ualifier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	Westborough Lab								
Turbidity	ND	NTU	0.20		1	-	07/26/17 18:30	44,180.1	AS
Alkalinity, Total	10.0	mg CaCO3/L	2.00	NA	1	-	07/26/17 09:47	121,2320B	BR
pH (H)	5.4	SU	-	NA	1	-	07/26/17 10:50	121,4500H+-B	LH



Project Name: BARNSTABLE Lab Number: L1725482

Project Number: 20107 Report Date: 08/17/17

**SAMPLE RESULTS** 

Lab ID: L1725482-02 Date Collected: 07/25/17 11:00

Client ID: FILTER A-2 Date Received: 07/25/17
Sample Location: MATTEL Field Prep: Not Specified

Matrix: Field Prep: Not Specific Matrix:

Parameter	Result	Qualifier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - \	Westborough Lab	)							
Turbidity	ND	NTU	0.20		1	-	07/25/17 17:18	44,180.1	AS
Alkalinity, Total	47.6	mg CaCO3	3/L 2.00	NA	1	-	07/26/17 09:47	121,2320B	BR



Project Name: BARNSTABLE Lab Number: L1725482

Project Number: 20107 Report Date: 08/17/17

**SAMPLE RESULTS** 

Lab ID: L1725482-03 Date Collected: 07/25/17 11:00

Client ID: FILTER C-2 Date Received: 07/25/17 Sample Location: MATTEL Pield Prep: Not Specified

Matrix: Field Prep: Not Specification: Dw

Parameter	Result	Qualifier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	Westborough Lab	)							
Turbidity	ND	NTU	0.20		1	-	07/25/17 17:18	44,180.1	AS
Alkalinity, Total	48.4	mg CaCO3/L	2.00	NA	1	-	07/26/17 09:47	121,2320B	BR



L1725482

Project Name: BARNSTABLE Lab Number:

Project Number: 20107 Report Date: 08/17/17

### Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westb	oorough Lab for san	nple(s): 02-	03 Bat	tch: WC	G1025618-1				
Turbidity	ND	NTU	0.20		1	-	07/25/17 17:18	44,180.1	AS
General Chemistry - Westh	oorough Lab for san	nple(s): 01-	03 Bat	tch: WC	G1025882-1				
Alkalinity, Total	ND	mg CaCO3/L	2.00	NA	1	-	07/26/17 09:47	121,2320B	BR
General Chemistry - Westb	oorough Lab for san	nple(s): 01	Batch:	WG10	26055-1				
Turbidity	ND	NTU	0.20		1	-	07/26/17 18:30	44,180.1	AS



## Lab Control Sample Analysis Batch Quality Control

Project Name: BARNSTABLE

**Project Number:** 20107

Lab Number: L1725482

**Report Date:** 08/17/17

Parameter	LCS %Recovery C	LCSD Qual %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab	Associated sample(s): 0	02-03 Batch: WG1025	618-2				
Turbidity	100	-		90-110	-		
General Chemistry - Westborough Lab	Associated sample(s): 0	01 Batch: WG1025859	)-1				
рН	100	-		99-101	-		5
General Chemistry - Westborough Lab	Associated sample(s): 0	01-03 Batch: WG1025	882-2				
Alkalinity, Total	104	-		90-110	-		10
General Chemistry - Westborough Lab	Associated sample(s): 0	01 Batch: WG1026055	i <b>-</b> 2				
Turbidity	100	-		90-110	-		

## Matrix Spike Analysis Batch Quality Control

**Project Name:** BARNSTABLE Lab Number:

L1725482

**Project Number:** 20107

Report Date: 08/17/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual Found	MSD %Recovery Q	Recovery ual Limits		RPD Qual Limits
General Chemistry - Westborou	igh Lab Asso	ciated samp	ole(s): 01-03	QC Batch ID	D: WG1025882-4	QC Sample: L17	725482-01 C	lient ID:	RAW-2
Alkalinity, Total	10.0	100	109	99	-	-	86-116	-	10



## Lab Duplicate Analysis Batch Quality Control

Project Name: BARNSTABLE

**Project Number:** 20107

Lab Number:

L1725482

Report Date:

08/17/17

Parameter	Native Sample	<b>Duplicate Sample</b>	Units	RPD	Qual R	RPD Limits	
General Chemistry - Westborough Lab Associated same	nple(s): 02-03 QC Batch	ID: WG1025618-3	QC Sample: L	1725501-05	Client ID: DU	IP Sample	
Turbidity	0.20	0.25	NTU	22	Q	13	
General Chemistry - Westborough Lab Associated sam	pple(s): 01 QC Batch ID:	WG1025859-2 QC	Sample: L172	25482-01 Cli	ent ID: RAW-	2	
pH (H)	5.4	5.5	SU	2		5	
General Chemistry - Westborough Lab Associated sam	pple(s): 01-03 QC Batch	ID: WG1025882-3	QC Sample: L	1725482-01	Client ID: RA	W-2	
Alkalinity, Total	10.0	10.1	mg CaCO3/L	1		10	
General Chemistry - Westborough Lab Associated sam	nple(s): 01 QC Batch ID:	WG1026055-3 QC	Sample: L172	25644-05 Cli	ent ID: DUP	Sample	
Turbidity	3.4	3.5	NTU	3		13	



**Lab Number:** L1725482

**Report Date:** 08/17/17

### Sample Receipt and Container Information

Were project specific reporting limits specified?

BARNSTABLE

YES

**Cooler Information** 

Project Name:

Project Number: 20107

Cooler Custody Seal

A Absent

Container Info	ormation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	pН	pН	deg C	Pres	Seal	Date/Time	Analysis(*)
L1725482-01A	Plastic 120ml HNO3 preserved	Α	<2	<2	3.9	Υ	Absent		MN-2008T(180),FE-UI(180)
L1725482-01B	Plastic 250ml unpreserved/No Headspace	Α	NA		3.9	Υ	Absent		ALK-T-2320(14),TURB-180(2),PH-4500(.01)
L1725482-01C	Plastic 250ml Trizma preserved	Α	NA		3.9	Υ	Absent		A2-537-PFOA/PFOS(14)
L1725482-01D	Plastic 250ml Trizma preserved	Α	NA		3.9	Υ	Absent		A2-537-PFOA/PFOS(14)
L1725482-01E	Plastic 250ml Trizma preserved	Α	NA		3.9	Υ	Absent		A2-537-PFOA/PFOS(14)
L1725482-01F	Amber 500ml NaSulfite/NaHSO4 preserved	Α	7	7	3.9	N	Absent		HOLD-522(28)
L1725482-01G	Amber 500ml NaSulfite/NaHSO4 preserved	Α	7	7	3.9	N	Absent		HOLD-522(28)
L1725482-02A	Plastic 120ml HNO3 preserved	Α	<2	<2	3.9	Υ	Absent		FE-UI(180),MN-UI(180)
L1725482-02B	Plastic 120ml unpreserved	Α	7	7	3.9	Υ	Absent		TURB-180(2)
L1725482-02C	Plastic 250ml unpreserved/No Headspace	Α	NA		3.9	Υ	Absent		ALK-T-2320(14)
L1725482-03A	Plastic 120ml HNO3 preserved	Α	<2	<2	3.9	Υ	Absent		FE-UI(180),MN-UI(180)
L1725482-03B	Plastic 120ml unpreserved	Α	7	7	3.9	Υ	Absent		TURB-180(2)
L1725482-03C	Plastic 250ml unpreserved/No Headspace	Α	NA		3.9	Υ	Absent		ALK-T-2320(14)
L1725482-04A	Plastic 250ml Trizma preserved	Α	NA		3.9	Υ	Absent		A2-537-PFOA/PFOS(14)
L1725482-04B	Plastic 250ml Trizma preserved	Α	NA		3.9	Υ	Absent		A2-537-PFOA/PFOS(14)
L1725482-04C	Plastic 250ml Trizma preserved	Α	NA		3.9	Υ	Absent		A2-537-PFOA/PFOS(14)
L1725482-04D	Amber 500ml NaSulfite/NaHSO4 preserved	Α	7	7	3.9	N	Absent		HOLD-522(28)
L1725482-04E	Amber 500ml NaSulfite/NaHSO4 preserved	Α	7	7	3.9	N	Absent		HOLD-522(28)
L1725482-05A	Plastic 250ml Trizma preserved	Α	NA		3.9	Υ	Absent		A2-537-PFOA/PFOS(14)
L1725482-05B	Plastic 250ml Trizma preserved	Α	NA		3.9	Υ	Absent		A2-537-PFOA/PFOS(14)
L1725482-05C	Plastic 250ml Trizma preserved	Α	NA		3.9	Υ	Absent		A2-537-PFOA/PFOS(14)
L1725482-05D	Amber 500ml NaSulfite/NaHSO4 preserved	Α	7	7	3.9	N	Absent		HOLD-522(28)
L1725482-05E	Amber 500ml NaSulfite/NaHSO4 preserved	Α	7	7	3.9	N	Absent		HOLD-522(28)



**Lab Number:** L1725482

**Report Date:** 08/17/17

Proj	ect	Nur	nber:	20107

BARNSTABLE

Project Name:

Container Info	Plastic 250ml Trizma preserved A		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	pН	рН	deg C	Pres	Seal	Date/Time	Analysis(*)
L1725482-06A	Plastic 250ml Trizma preserved	Α	NA		3.9	Υ	Absent		A2-537-PFOA/PFOS(14)
L1725482-06B	Plastic 250ml Trizma preserved	Α	NA		3.9	Υ	Absent		A2-537-PFOA/PFOS(14)
L1725482-06C	Plastic 250ml Trizma preserved	Α	NA		3.9	Υ	Absent		A2-537-PFOA/PFOS(14)
L1725482-06D	Amber 500ml NaSulfite/NaHSO4 preserved	Α	7	7	3.9	N	Absent		HOLD-522(28)
L1725482-06E	Amber 500ml NaSulfite/NaHSO4 preserved	Α	7	7	3.9	N	Absent		HOLD-522(28)

### **Container Comments**

L1725482-01F	Cannot be perserve in Login
L1725482-01G	Cannot be perserve in Login
L1725482-04D	Cannot be perserve in Login
L1725482-04E	Cannot be perserve in Login
L1725482-05D	Cannot be perserve in Login
L1725482-05E	Cannot be perserve in Login
L1725482-06D	Cannot be perserve in Login
L1725482-06E	Cannot be perserve in Login



Project Name: BARNSTABLE Lab Number: L1725482

Project Number: 20107 Report Date: 08/17/17

#### **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

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**

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

#### Terms

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.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

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.

#### 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

Report Format: Data Usability Report



Project Name:BARNSTABLELab Number:L1725482Project Number:20107Report Date:08/17/17

#### Data Qualifiers

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

- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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: BARNSTABLE Lab Number: L1725482

Project Number: 20107 Report Date: 08/17/17

#### REFERENCES

Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.

- Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.
- Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.
- Determination of Selected Perfluorintated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537, EPA/600/R-08/092. Version 1.1, September 2009.

### 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

ID No.:17873 Revision 10

Published Date: 1/16/2017 11:00:05 AM

Page 1 of 1

#### 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-Colilert-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 II, 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-Colilert-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.

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.

Document Type: Form

Pre-Qualtrax Document ID: 08-113

ALPHA N	ANSFIELD CHAIN	OF C	USTOI	DY	PAGE_	_ OF	_ Da	ate R	ec'd ir	n Lab	);	7/2	5/1-	)		AL	LPHA	Job#: L 172 548	32	
WESTBORO, MA	MANSFIELD, MA	Projec	t Informa	ation		o	R	epor	t Info	orma	ition -	Data D	eliver	able	es	Bi	illing	Information	1	
TEL: 508-898-9220 FAX: 508-898-9193	TEL: 508-822-9300 FAX: 508-822-3288	Project	Project Name: Bywww.ie						<			/AIL				☐ Same as Client info PO #:				
Client Informat	ion	Project	Project Location: MAIN					ADEx Add'l Deliverables												
Client: BLUEL	EAF he	Project	#: 20	57								nts/Re	port l	₋imi	ts					
	resser hil po			ERTK	Gratio	10	Sta	ite /Fe	ed Pro	ogran	n		Criter	ria						
DEPARTMENT LINE	ton MA 01507	ALPHA	Quote #:		0.0110										576					
	248-7094	Turn-/	Around T	ime																
Fax:																				
Email: egrotto	nethodeations.com	Stand Date Du		RUSH (onl)	confirmed if pre-	-approved!)		5)	7 /	,ix	1 /		/ /	/	/		/ /	7/	Ţ	
☐ These samples h	ave been previously analyzed by Alpha							20		*///*////*////////////////////////////	AIC	//			/			SAMPLE HANDLII	NG TAL	
Other Project	Specific Requirements/Comm	nents/De	etection L	_imits:			13	SISATION		1,	70	/~/						/ Filtration □ Done	- L	
	E nit cost) will be omitted unless	s you ch	The British		-		A	11/2/21	71.00.77	7.0.000	0F. OK 3	1 Pro 1	//	/ _/	//	//	//	☐ Not needed ☐ Lab to do Preservation ☐ Lab to do	В О Т Т	
ALPHA Lab ID (Lab Use Only)	Sample ID		Coll Date	lection Time	Sample Matrix	Sampler' Initials	S	1/2	1/1	5/2	7/3					Ι,	/ /	(Please specify below)  Sample Specific Commen	nts S	
25482 - 01	RAW-Z		3/25	11:00 N	YW	BJS	1	1		ı	1				2				4	
02	FILTER A -2		Ì	1	li	1	1		1				Ιi						2	
03	FILTERC-L						1		1										Z	
04	FRITHE - 2									1									-	
05	FELTER F - 2			1-			-						++	-					2	
06	UV -2		1	V						1	1			-					2	
					- 7	W				1	l			-	-		-		2	
						-	-				-	-	+		-	+	+			
							$\vdash$			-		+		-	-					
								-					-			-				
				L		ainer Type	P		_			_		_				Please print clearly, legibly a pletely. Samples can not be	nd com-	
	1	Relinqui	shod Pur			eservative	C							_			i	in and turnaround time clock	will not	
	Tul	Kennquis	ыней ву:			e/Time	-	2	Red	ceive	d By:	AAL		7/25	ate/		- I	start until any ambiguities are All samples submitted are su	bject to	
ORM NO: 101-09 (rev. 27-	SEP-10)	1-4	/		1-7	(1)			1		<	AMI		1123	111	13 0	Alpha's Terms and Conditions. See reverse side.			
Page 35 of 35	•					Life										1-22				



## ANALYTICAL REPORT

Lab Number: L1726662

Client: Blueleaf Incorporated

57 Dresser Hill Road Charlton, MA 01507

ATTN: Erik Grotton

Phone: (508) 248-7094

Project Name: MAHER WELLS

Project Number: 20107 Report Date: 08/08/17

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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



Project Name: MAHER WELLS

Project Number: 20107

 Lab Number:
 L1726662

 Report Date:
 08/08/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1726662-01	FILTER A CBW	DW	BARNSTABLE, MA	07/28/17 09:30	08/02/17
L1726662-02	FILTER A SSN	DW	BARNSTABLE, MA	07/31/17 10:20	08/02/17
L1726662-03	FILTER C CBW	DW	BARNSTABLE, MA	07/28/17 09:30	08/02/17
L1726662-04	FILTER C SSN	DW	BARNSTABLE, MA	07/31/17 10:20	08/02/17



L1726662

Lab Number:

Project Name: MAHER WELLS

Project Number: 20107 Report Date: 08/08/17

## **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: MAHER WELLS Lab Number: L1726662

Project Number: 20107 Report Date: 08/08/17

**Case Narrative (continued)** 

Chlorine, Total Residual

L1726662-01 through -04 were analyzed with the method required holding time exceeded.

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.

Amita Naik

Authorized Signature:

Title: Technical Director/Representative Date: 08/08/17

Nails

ANALYTICAL

## **METALS**



Project Name: MAHER WELLS Lab Number: L1726662

Project Number: 20107 Report Date: 08/08/17

**SAMPLE RESULTS** 

Lab ID:L1726662-01Date Collected:07/28/17 09:30Client ID:FILTER A CBWDate Received:08/02/17Sample Location:BARNSTABLE, MAField Prep:Not Specified

Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab										
Iron, Total	7.10		mg/l	0.050		1	08/03/17 16:1	1 08/04/17 15:20	EPA 3005A	19,200.7	PS
Manganese, Total	3.32		mg/l	0.010		1	08/03/17 16:1	1 08/04/17 15:20	EPA 3005A	19,200.7	PS



Not Specified

Project Name: MAHER WELLS Lab Number: L1726662

Project Number: 20107 Report Date: 08/08/17

**SAMPLE RESULTS** 

 Lab ID:
 L1726662-02
 Date Collected:
 07/31/17 10:20

 Client ID:
 FILTER A SSN
 Date Received:
 08/02/17

Matrix: Dw

BARNSTABLE, MA

Sample Location:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab										
Iron, Total	0.173		mg/l	0.050		1	08/03/17 16:1	1 08/04/17 15:24	EPA 3005A	19,200.7	PS
Manganese, Total	0.099		mg/l	0.010		1	08/03/17 16:1	1 08/04/17 15:24	EPA 3005A	19,200.7	PS

Field Prep:



**Project Name:** MAHER WELLS **Report Date:** 

Lab Number: L1726662

**Project Number:** 20107 08/08/17

07/28/17 09:30

**SAMPLE RESULTS** 

Lab ID: L1726662-03 Client ID: FILTER C CBW Sample Location: BARNSTABLE, MA

Date Received: 08/02/17

Date Collected:

Matrix: Dw Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	field Lab										
Iron, Total	8.20		mg/l	0.050		1	08/03/17 16:11	08/04/17 15:28	EPA 3005A	19,200.7	PS
Manganese, Total	3.74		mg/l	0.010		1	08/03/17 16:11	08/04/17 15:28	EPA 3005A	19,200.7	PS



Not Specified

Project Name: MAHER WELLS Lab Number: L1726662

Project Number: 20107 Report Date: 08/08/17

**SAMPLE RESULTS** 

 Lab ID:
 L1726662-04
 Date Collected:
 07/31/17 10:20

 Client ID:
 FILTER C SSN
 Date Received:
 08/02/17

Sample Location: BARNSTABLE, MA Field Prep:
Matrix: Dw

Dilution Date Date Prep Analytical Method **Factor** Prepared **Analyzed** Method **Parameter** Result Qualifier Units RL MDL Analyst Total Metals - Mansfield Lab Iron, Total 0.080 0.050 1 08/03/17 16:11 08/04/17 15:32 EPA 3005A 19,200.7 mg/l PS Manganese, Total 0.137 mg/l 0.010 1 08/03/17 16:11 08/04/17 15:32 EPA 3005A 19,200.7 PS



Project Name: MAHER WELLS

Project Number: 20107

Lab Number:

L1726662

**Report Date:** 08/08/17

# Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfi	eld Lab for sample(s):	01-04 B	atch: W	G10286	42-1				
Iron, Total	ND	mg/l	0.050		1	08/03/17 16:11	08/04/17 14:17	19,200.7	PS
Manganese, Total	ND	mg/l	0.010		1	08/03/17 16:11	08/04/17 14:17	19,200.7	PS

**Prep Information** 

Digestion Method: EPA 3005A



## Lab Control Sample Analysis Batch Quality Control

Project Name: MAHER WELLS

Lab Number:

L1726662

**Project Number:** 20107

Report Date:

ort Date: 08/08/17

Parameter	LCS %Recovery Qu	LCSD al %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sam	nple(s): 01-04 Batch: W	G1028642-2					
Iron, Total	110	-		85-115	-		
Manganese, Total	100	-		85-115	-		

## Matrix Spike Analysis Batch Quality Control

Project Name: MAHER WELLS

Project Number: 20107

Lab Number: L1726662

**Report Date:** 08/08/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery Qu	Recovery lal Limits	RPD Qual	RPD Limits
Total Metals - Mansfield Lab As	ssociated sam	nple(s): 01-04	QC Bat	tch ID: WG1028	8642-3	QC Sam	ple: L1726569-01	Client ID: MS	Sample	
Iron, Total	16.6	1	17.6	100		-	-	75-125	-	20
Manganese, Total	1.58	0.5	2.06	96		-	-	75-125	-	20
Total Metals - Mansfield Lab As	ssociated sam	nple(s): 01-04	QC Bat	tch ID: WG1028	8642-7	QC Sam	ple: L1726739-01	Client ID: MS	Sample	
Iron, Total	0.215	1	1.30	108		-	-	75-125	-	20
Manganese, Total	0.057	0.5	0.535	96		-	-	75-125	-	20



## INORGANICS & MISCELLANEOUS



Project Name: MAHER WELLS

WATER WELLS

Project Number: 20107

Lab Number:

L1726662

Report Date:

08/08/17

**SAMPLE RESULTS** 

Lab ID: L1726662-01

Client ID:

FILTER A CBW

Sample Location:

BARNSTABLE, MA

Matrix:

Dw

Date Collected:

07/28/17 09:30

Date Received:

08/02/17

Field Prep:

Not Specified

**Dilution** Date Date Analytical Factor Prepared Analyzed Method Result Qualifier Units RL MDL **Parameter Analyst** General Chemistry - Westborough Lab Solids, Total Suspended 32. mg/l 10 NA 2 08/03/17 05:50 121,2540D VΒ Chlorine, Total Residual 0.02 1 0.36 mg/l --08/02/17 22:52 121,4500CL-D AS



**Project Name:** MAHER WELLS

Project Number: 20107

Lab Number:

L1726662

Report Date: 08/08/17

**SAMPLE RESULTS** 

Lab ID:

L1726662-02

Client ID:

FILTER A SSN

Sample Location: BARNSTABLE, MA

Matrix:

Dw

Date Collected:

07/31/17 10:20

Date Received:

08/02/17

Not Specified Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Wes	tborough Lal	)								
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	08/03/17 05:50	121,2540D	VB
Chlorine, Total Residual	ND		mg/l	0.02		1	-	08/02/17 22:52	121,4500CL-D	AS



**Project Name:** MAHER WELLS

Project Number: 20107

Lab Number:

L1726662

Report Date:

08/08/17

**SAMPLE RESULTS** 

Lab ID:

L1726662-03

Client ID:

FILTER C CBW

Sample Location: BARNSTABLE, MA

Matrix:

Dw

Date Collected:

07/28/17 09:30

Date Received:

08/02/17

Field Prep:

Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Wes	stborough Lab									
Solids, Total Suspended	78.		mg/l	10	NA	2	-	08/03/17 05:50	121,2540D	VB
Chlorine, Total Residual	ND		mg/l	0.02		1	-	08/02/17 22:52	121,4500CL-D	AS



L1726662

Lab Number:

**Project Name:** MAHER WELLS

Project Number: 20107 Report Date:

08/08/17

**SAMPLE RESULTS** 

Lab ID: Date Collected: L1726662-04 07/31/17 10:20

FILTER C SSN Client ID: Date Received: 08/02/17 Sample Location: BARNSTABLE, MA Not Specified Field Prep:

Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - We	stborough Lab	)								
Solids, Total Suspended	ND		mg/l	5.0	NA	1	-	08/03/17 05:50	121,2540D	VB
Chlorine, Total Residual	ND		mg/l	0.02		1	-	08/02/17 22:52	121,4500CL-D	AS



L1726662

**Project Name:** MAHER WELLS

Project Number: 20107 **Report Date:** 

08/08/17

Lab Number:

Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - We	estborough Lab for sam	ple(s): 01	-04 Ba	tch: Wo	G1028281-1				
Chlorine, Total Residual	ND	mg/l	0.02		1	-	08/02/17 22:52	121,4500CL-E	) AS
General Chemistry - We	estborough Lab for sam	ple(s): 01	-04 Ba	tch: Wo	G1028365-1				
Solids, Total Suspended	ND	mg/l	5.0	NA	1	-	08/03/17 05:50	121,2540D	VB



## Lab Control Sample Analysis Batch Quality Control

Project Name: MAHER WELLS

Lab Number: L1726662

Project Number: 20107 Report Date: 08/08/17

Parameter Parameter	LCS %Recovery Qual	LCSD %Recovery Q	%Recovery ual Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab	Associated sample(s): 01-04	Batch: WG1028281-	2			
Chlorine, Total Residual	93	-	90-110	-		



## Matrix Spike Analysis Batch Quality Control

Project Name: MAHER WELLS

Project Number: 20107

Lab Number:

L1726662

Report Date:

08/08/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		ISD ound	MSD %Recovery Qu	Recover	y RPD	RPD Qual Limits
General Chemistry - Westborou	gh Lab Asso	ciated samp	ole(s): 01-04	QC Batch ID	D: WG1028	281-4	QC Sample: L17	26725-02 C	Client ID:	MS Sample
Chlorine, Total Residual	ND	0.248	ND	0	Q	-	-	80-120	-	20



## Lab Duplicate Analysis Batch Quality Control

Project Name: MAHER WELLS

**Project Number:** 20107

Lab Number:

L1726662

Report Date:

08/08/17

Parameter	Native Sam	ple D	uplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab	Associated sample(s): 01-04	QC Batch ID:	WG1028281-3	QC Sample:	L1726725-01	Client ID:	DUP Sample
Chlorine, Total Residual	ND		ND	mg/l	NC		20
General Chemistry - Westborough Lab	Associated sample(s): 01-04	QC Batch ID:	WG1028365-2	QC Sample:	L1726662-03	Client ID:	FILTER C CBW
Solids, Total Suspended	78		73	mg/l	7		29



Project Name: MAHER WELLS Lab Number: L1726662

Project Number: 20107 Report Date: 08/08/17

## Sample Receipt and Container Information

Were project specific reporting limits specified?

**Cooler Information** 

Cooler Custody Seal

A Absent

Container Info	ormation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	рН	рН	deg C	Pres	Seal	Date/Time	Analysis(*)
L1726662-01A	Plastic 120ml HNO3 preserved	Α	<2	<2	5.6	Υ	Absent		FE-UI(180),MN-UI(180)
L1726662-01B	Plastic 250ml unpreserved	Α	7	7	5.6	Υ	Absent		TRC-4500(1)
L1726662-01C	Plastic 950ml unpreserved	Α	7	7	5.6	Υ	Absent		TSS-2540(7)
L1726662-02A	Plastic 120ml HNO3 preserved	Α	<2	<2	5.6	Υ	Absent		FE-UI(180),MN-UI(180)
L1726662-02B	Plastic 250ml unpreserved	Α	7	7	5.6	Υ	Absent		TRC-4500(1)
L1726662-02C	Plastic 950ml unpreserved	Α	7	7	5.6	Υ	Absent		TSS-2540(7)
L1726662-03A	Plastic 120ml HNO3 preserved	Α	<2	<2	5.6	Υ	Absent		FE-UI(180),MN-UI(180)
L1726662-03B	Plastic 250ml unpreserved	Α	7	7	5.6	Υ	Absent		TRC-4500(1)
L1726662-03C	Plastic 950ml unpreserved	Α	7	7	5.6	Υ	Absent		TSS-2540(7)
L1726662-04A	Plastic 120ml HNO3 preserved	Α	<2	<2	5.6	Υ	Absent		FE-UI(180),MN-UI(180)
L1726662-04B	Plastic 250ml unpreserved	Α	7	7	5.6	Υ	Absent		TRC-4500(1)
L1726662-04C	Plastic 950ml unpreserved	Α	7	7	5.6	Υ	Absent		TSS-2540(7)



Project Name: MAHER WELLS Lab Number: L1726662

Project Number: 20107 Report Date: 08/08/17

### **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**

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

### Terms

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.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

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.

## 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

Report Format: Data Usability Report



Project Name:MAHER WELLSLab Number:L1726662Project Number:20107Report Date:08/08/17

#### Data Qualifiers

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

- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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:MAHER WELLSLab Number:L1726662Project Number:20107Report Date:08/08/17

## REFERENCES

Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

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

ID No.:17873 Revision 10

Published Date: 1/16/2017 11:00:05 AM

Page 1 of 1

## 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-Colilert-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 II, 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-Colilert-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.

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.

Pre-Qualtrax Document ID: 08-113 Document Type: Form

ALPHA	CHAIN O	F CUS	OTE	YC	AGE_ (	OF	Dat	e Rec	d in L	ab:	8	12	1	1-	7	AI	LPH	A Jo	b#:	11	72666	62	
8 Walkup Drive	320 Forbes Blvd	Project I	Informati	ion			Re	port	Inforn	natio	n - Da	ta De	live	able	es			-	rmat				
Westboro, MA Tel: 508-898-9	01581 Mansfield, MA 02048	Project Nar	me: MA	itez u	rects		ŮSK.	ADEx			EMAII	L					Same	as C	lient ir	nfo I	PO #:		
Client Information		Project Loc	cation: 13	ARNEN	Mse u	ΛA	Re	gulat	tory R	equii	emen	ts &	& F	roje	ect li	ıfor	matic	on R	equir	eme	nts		
Client: Bueze	me inc	Project #:	2010	7		*	O Y	es 🖫	No Ma	MCF	Analy	tical M	lethod	ds hic S	DC3	/Da	☐ Ye	s 😂 N	VO C	T RCI	P Analytical	Method	sb
Address: \$7 0	resser ull ro	Project Mar	nager: 🔼	RIKE	NOTTON	1	□ Y	es 🛱	No GV	V1 Sta	andards	s (Info	Requ	ired	for N	fetal:	s & El	PH wi	ith Tar	norga rgets)	nics)		
	1 mA 01507	ALPHA Qu	uote #:	1-1-2					No NF State /F								(	Criteri	ia				
Phone: 508 29	18 7094	Turn-Arc	ound Tim	ne				/	/ /			7	7	7	/	7	7	7	7	/			
Email:egrono	e dielateuroriam	Ctandar	rd D	DUCU				- /			DPP42	S Only	s Only					1	/ /	/ /			
	roject Information:	Date Due		RUSH (only t	confirmed if pre-ap	pprovedl)	ANALYON	Z/60 D 624 D 524	METALS: CIMCS CIPAH	S. URCRA DMCP 14	VPL. CRanges & Taros. CPP4.	D PCR Target Conjy	TPH: CO.	want Only DFin	Man ( W. M. M. Merprint		TOUTHNE DEC'S	) 300 cm			SAMPLE Filtration Field Lab to Preservat	do tion	TOTAL # BOTTL
ALPHA Lab ID (Lab Use Only)	Sample ID	-	Collec	ction Time	Sample Matrix	Sampler	ပို့	SVO.	METAL	METAL		D PCB	HA	L	3 2	7 3	3/		/ /				T L E S
26662-01	FELTER A CISW		21/	9:30	DW	BJS						/ 1		6	•			-	-	Sa	ample Comr	ments	S
-02	ETITIM A SSU		7/31	10:20	DW	CHW								,	1	1	$\rightarrow$		-				
-03	FELTER C CSW FELTER C SSW		-	9:30	DW	375								ı	,	1	-	-	+				
-04	FEI TON ( SEN)			10:20	DW	CAW		-	+	+				1	1	,	+	$\dashv$	-		*		
	10010000	/	121		1200	Color				+	-			•		1	-	-	+				
															-	-	-	_	_				
								_	-						_		_	_					
								-	-	-	-			4	-		$\rightarrow$	$\rightarrow$	4				
								-		-				-	$\dashv$	-	_	+	_				
								-		-	-		$\dashv$	1	$\dashv$	4	_	_	+				
Container Type P= Plastic A= Amber glass V= Vial G= Glass B= Bacteria cup	Preservative A= None B= HCI C= HNO <sub>3</sub> D= H <sub>2</sub> SO <sub>4</sub>				-	ner Type servative																	
C= Cube O= Other E= Encore D= BOD Bottle	E= NaOH F= MeOH G= NaHSO4 H = Na <sub>2</sub> S <sub>2</sub> O3 I= Ascorbic Acid J = NH <sub>4</sub> CI K= Zn Acetate O= Other	Relinquishe	ed By:		8/2/	Time 17 14	03		Rece	ived E	By:	2	-{	12	ate/1	ime /L/		Alph: See	a's Ter	rms a	mitted are s nd Condition e. v. 12-Mar-2012)	ns.	to



## ANALYTICAL REPORT

Lab Number: L1726666

Client: Blueleaf Incorporated

57 Dresser Hill Road Charlton, MA 01507

ATTN: Erik Grotton
Phone: (508) 248-7094

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 08/23/17

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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



Project Name: MAHER WELL PILOT

Project Number: 20107

 Lab Number:
 L1726666

 Report Date:
 08/23/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1726666-01	RAW-1	DW	BARNSTABLE, MA	08/02/17 09:00	08/02/17
L1726666-02	FILTER A-1	DW	BARNSTABLE, MA	08/02/17 09:00	08/02/17
L1726666-03	FILTER B-1	DW	BARNSTABLE, MA	08/02/17 09:00	08/02/17
L1726666-04	FILTER C-1	DW	BARNSTABLE, MA	08/02/17 09:00	08/02/17
L1726666-05	FILTER D-1	DW	BARNSTABLE, MA	08/02/17 09:00	08/02/17
L1726666-06	FILTER B-1	DW	BARNSTABLE, MA	08/02/17 09:00	08/02/17
L1726666-07	FILTER D-1	DW	BARNSTABLE, MA	08/02/17 09:00	08/02/17
L1726666-08	FILTER B-1 (DAY 7)	WATER	BARNSTABLE, MA	08/02/17 09:00	08/02/17
L1726666-09	FILTER D-1 (DAY 7)	WATER	BARNSTABLE, MA	08/02/17 09:00	08/02/17



L1726666

Lab Number:

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 08/23/17

## **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.	



L1726666

Lab Number:

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 08/23/17

## **Case Narrative (continued)**

## Report Submission

The analyses of Bromate and Haloacetic Acids were subcontracted. Copies of the laboratory reports are included as an addendum. Please note: This data is only available in PDF format and is not available on Data Merger.

## Volatile Organics by Method 524

WG1030986: A Matrix Spike and Laboratory Duplicate were prepared with the sample batch, however, the native sample was canceled; therefore, the Matrix Spike and Laboratory Duplicate results could not be reported.

## Total Metals

The WG1030338-2 LCS recovery, associated with L1726666-02 through -05, is above the acceptance criteria for aluminum (118%); however, the associated samples are non-detect to the RL for this target analyte. The results of the original analysis are reported.

## Chlorine, Total Residual

The WG1030455-4 MS recovery (52%), performed on L1726666-07, is outside the acceptance criteria; however, the associated LCS recovery is within criteria. No further action was taken.

## Anions by Ion Chromatography

The WG1029082-3 MS recovery, performed on L1726666-01, is outside the acceptance criteria for chloride (83%); however, the associated LCS recovery is within criteria. No further action was taken.

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.

Then fingent Kara Lindquist

Authorized Signature:

Title: Technical Director/Representative

Al au

Date: 08/23/17

## **ORGANICS**



## **VOLATILES**



Serial\_No:08231715:28

**Project Name:** MAHER WELL PILOT

**Project Number:** 20107

**SAMPLE RESULTS** 

Lab Number: L1726666

Report Date:

08/23/17

Lab ID: L1726666-01

Client ID: RAW-1

Sample Location: BARNSTABLE, MA

Matrix: Dw

Analytical Method: 16,524.2

Analytical Date: 08/10/17 17:30

Analyst: MM Date Collected: 08/02/17 09:00 Date Received: 08/02/17 Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Wes	stborough Lab						
Methyl tert butyl ether	ND		ug/l	0.50		1	
Surrogate			% Recovery	Qualifier		eptance riteria	
1,2-Dichlorobenzene-d4			105			80-120	
4-Bromofluorobenzene			95			80-120	

Serial\_No:08231715:28

L1726666

**Project Name:** MAHER WELL PILOT

**Project Number:** 20107

**SAMPLE RESULTS** 

Lab Number:

Report Date: 08/23/17

Lab ID: L1726666-08

Client ID: FILTER B-1 (DAY 7) Sample Location: BARNSTABLE, MA

Date Collected: 08/02/17 09:00 Date Received: 08/02/17 Field Prep: Not Specified

Matrix: Water Analytical Method: 16,524.2 Analytical Date: 08/11/17 16:08

Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westboroug	jh Lab						
Chloroform	ND		ug/l	0.50		1	
Bromodichloromethane	1.4		ug/l	0.50		1	
Dibromochloromethane	2.4		ug/l	0.50		1	
Bromoform	1.2		ug/l	0.50		1	
THMs, Total	5.0		ug/l	0.50		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
1,2-Dichlorobenzene-d4	105		80-120	
4-Bromofluorobenzene	95		80-120	



Serial\_No:08231715:28

L1726666

08/02/17 09:00

**Project Name:** MAHER WELL PILOT

**Project Number:** 20107

**SAMPLE RESULTS** 

Lab Number:

Date Collected:

Report Date: 08/23/17

Lab ID: L1726666-09

Client ID: FILTER D-1 (DAY 7) Sample Location: BARNSTABLE, MA

Date Received: 08/02/17 Field Prep: Not Specified

Matrix: Water Analytical Method: 16,524.2 Analytical Date: 08/11/17 14:57

Analyst: GT

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Volatile Organics by GC/MS - Westbord	ough Lab						
			_				
Chloroform	ND		ug/l	0.50		1	
Bromodichloromethane	0.86		ug/l	0.50		1	
Dibromochloromethane	2.2		ug/l	0.50		1	
Bromoform	1.5		ug/l	0.50		1	
THMs, Total	4.6		ug/l	0.50		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
1,2-Dichlorobenzene-d4	104		80-120	
4-Bromofluorobenzene	93		80-120	



L1726666

Lab Number:

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 08/23/17

thed Dienis Analysis

Method Blank Analysis Batch Quality Control

Analytical Method: 16,524.2
Analytical Date: 08/11/17 07:14

Analyst: GT

Parameter	Result	Qualifier U	nits	RL	MDL
Volatile Organics by GC/MS - West	borough Lab	for sample(s	s): 08-09	Batch:	WG1030986-10
Methyl tert butyl ether	ND	ı	ug/l	0.50	
Chloroform	ND	l	ug/l	0.50	
Bromodichloromethane	ND	l	ug/l	0.50	
Dibromochloromethane	ND	ı	ug/l	0.50	
Bromoform	ND	ı	ug/l	0.50	
THMs, Total	ND	ı	ug/l	0.50	

		Acceptance
Surrogate	%Recovery Qualifie	er Criteria
1,2-Dichlorobenzene-d4	102	80-120
4-Bromofluorobenzene	94	80-120



L1726666

**Project Name:** MAHER WELL PILOT

**Project Number:** 20107 Report Date: 08/23/17

Lab Number:

Method Blank Analysis Batch Quality Control

Analytical Method: 16,524.2 Analytical Date: 08/10/17 11:35

Analyst: BD

Parameter	Result	Qualifier	Units	RL	MDL	
olatile Organics by GC/MS - Wes	tborough Lab	for sample	e(s): 01	Batch:	WG1030986-4	
Methyl tert butyl ether	ND		ug/l	0.50		
Chloroform	ND		ug/l	0.50		
Bromodichloromethane	ND		ug/l	0.50		
Dibromochloromethane	ND		ug/l	0.50		
Bromoform	ND		ug/l	0.50		
THMs, Total	ND		ug/l	0.50		

Tentatively Identified Compounds

No Tentatively Identified Compounds ND ug/l

		Acceptance	
Surrogate	%Recovery Qualifi	er Criteria	
1,2-Dichlorobenzene-d4	96	80-120	
4-Bromofluorobenzene	93	80-120	



L1726666

### Lab Control Sample Analysis Batch Quality Control

**Project Name:** MAHER WELL PILOT

**Project Number:** 20107

Report Date: 08/23/17

Lab Number:

2	LCS	Occal	LCSD	01	%Recovery		01	RPD	
Parameter	%Recovery	Qual	%Recovery	Qual	Limits	RPD	Qual	Limits	
Valatila Organica by CC/MC M/	anthorough Lab Appainted a	ampla/al	. 01 Botob: MC10	20006 2					

Parameter	%Recovery	Qual	%Recovery	Qual	Limits	RPD	Qual	Limits
olatile Organics by GC/MS - Westborough L	ab Associated	sample(s): 0	1 Batch: WG1	030986-3				
Methyl tert butyl ether	98		-		70-130	-		20
Chloroform	105		-		70-130	-		20
Bromodichloromethane	108		-		70-130	-		20
Dibromochloromethane	105		-		70-130	-		20
Bromoform	102		-		70-130	-		20

Surrogate	LCS %Recovery	.CSD covery Q	Acceptance ual Criteria	
1,2-Dichlorobenzene-d4 4-Bromofluorobenzene	96 99		80-120 80-120	

### Lab Control Sample Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

**Project Number:** 20107

Lab Number:

L1726666

Report Date:

08/23/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	/ Qual	%Recovery Limits	RPD	Qual	RPD Limits	
Volatile Organics by GC/MS - Westborough L	ab Associated	sample(s):	08-09 Batch:	WG1030986-9	)				
Methyl tert butyl ether	95		-		70-130	-		20	
Chloroform	102		-		70-130	-		20	
Bromodichloromethane	98		-		70-130	-		20	
Dibromochloromethane	95		-		70-130	-		20	
Bromoform	90		-		70-130	-		20	

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichlorobenzene-d4 4-Bromofluorobenzene	100 99				80-120 80-120

### **METALS**



Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: Report Date: L1726666 08/23/17

**SAMPLE RESULTS** 

Lab ID: L1726666-01

Client ID: RAW-1

Sample Location: BARNSTABLE, MA

Matrix: Dw

Date Collected:

08/02/17 09:00

Date Received: 08/02/17

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Man	sfield Lab										
Aluminum, Total	ND		mg/l	0.100		1	08/03/17 10:00	08/08/17 19:46	EPA 3005A	19,200.7	AB
Antimony, Total	ND		mg/l	0.0040		1	08/03/17 10:00	08/04/17 14:22	EPA 3005A	3,200.8	BV
Arsenic, Total	ND		mg/l	0.0010		1	08/03/17 10:00	08/04/17 14:22	EPA 3005A	3,200.8	BV
Barium, Total	0.0102		mg/l	0.0010		1	08/03/17 10:00	08/04/17 14:22	EPA 3005A	3,200.8	BV
Beryllium, Total	ND		mg/l	0.0010		1	08/03/17 10:00	08/04/17 14:22	EPA 3005A	3,200.8	BV
Cadmium, Total	ND		mg/l	0.0002		1	08/03/17 10:00	08/04/17 14:22	EPA 3005A	3,200.8	BV
Calcium, Total	4.86		mg/l	0.100		1	08/03/17 10:00	08/08/17 19:46	EPA 3005A	19,200.7	AB
Chromium, Total	ND		mg/l	0.0030		1	08/03/17 10:00	08/04/17 14:22	EPA 3005A	3,200.8	BV
Copper, Total	ND		mg/l	0.010		1	08/03/17 10:00	08/08/17 19:46	EPA 3005A	19,200.7	AB
Iron, Total	0.060		mg/l	0.050		1	08/03/17 10:00	08/08/17 19:46	EPA 3005A	19,200.7	AB
Magnesium, Total	2.76		mg/l	0.100		1	08/03/17 10:00	08/08/17 19:46	EPA 3005A	19,200.7	AB
Manganese, Total	0.042		mg/l	0.010		1	08/03/17 10:00	08/08/17 19:46	EPA 3005A	19,200.7	AB
Mercury, Total	ND		mg/l	0.0002		1	08/03/17 11:38	08/03/17 15:24	EPA 245.1	3,245.1	MG
Nickel, Total	ND		mg/l	0.0020		1	08/03/17 10:00	08/04/17 14:22	EPA 3005A	3,200.8	BV
Potassium, Total	ND		mg/l	2.50		1	08/03/17 10:00	08/08/17 19:46	EPA 3005A	19,200.7	AB
Selenium, Total	ND		mg/l	0.0050		1	08/03/17 10:00	08/04/17 14:22	EPA 3005A	3,200.8	BV
Silver, Total	ND		mg/l	0.007		1	08/03/17 10:00	08/08/17 19:46	EPA 3005A	19,200.7	AB
Sodium, Total	13.9		mg/l	2.00		1	08/03/17 10:00	08/08/17 19:46	EPA 3005A	19,200.7	AB
Thallium, Total	ND		mg/l	0.0010		1	08/03/17 10:00	08/04/17 14:22	EPA 3005A	3,200.8	BV
Zinc, Total	ND		mg/l	0.050		1	08/03/17 10:00	08/08/17 19:46	EPA 3005A	19,200.7	AB
Total Hardness by	SM 2340E	3 - Mansfiel	d Lab								
Hardness	23.5		mg/l	0.660	NA	1	08/03/17 10:00	08/08/17 19:46	EPA 3005A	19,200.7	AB
Dissolved Metals -	Mansfield	Lab									
Iron, Dissolved	ND		mg/l	0.050		1	08/04/17 14:30	08/08/17 14:21	EPA 3005A	19,200.7	PS

1

08/04/17 14:30 08/08/17 14:21 EPA 3005A



19,200.7

PS

Manganese, Dissolved

0.043

mg/l

0.010

Project Name: MAHER WELL PILOT

**Project Number:** 20107

Lab Number: Report Date: L1726666

08/23/17

SAMPLE RESULTS

Lab ID: L1726666-02

Client ID: FILTER A-1

Sample Location: BARNSTABLE, MA

Matrix: Dw

Date Collected:

08/02/17 09:00

Date Received:

08/02/17

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab										
Aluminum, Total	ND		mg/l	0.100		1	08/09/17 12:1	0 08/09/17 19:49	EPA 3005A	19,200.7	PS
Calcium, Total	4.56		mg/l	0.100		1	08/09/17 12:1	0 08/09/17 19:49	EPA 3005A	19,200.7	PS
Copper, Total	ND		mg/l	0.010		1	08/09/17 12:1	0 08/09/17 19:49	EPA 3005A	19,200.7	PS
Iron, Total	ND		mg/l	0.050		1	08/09/17 12:1	0 08/09/17 19:49	EPA 3005A	19,200.7	PS
Manganese, Total	ND		mg/l	0.010		1	08/09/17 12:1	0 08/09/17 19:49	EPA 3005A	19,200.7	PS
Sodium, Total	13.8		mg/l	2.00		1	08/09/17 12:1	0 08/09/17 19:49	EPA 3005A	19,200.7	PS
Total Hardness by	SM 2340E	3 - Mansfiel	ld Lab								
Hardness	22.0		mg/l	0.660	NA	1	08/09/17 12:1	0 08/09/17 19:49	EPA 3005A	19,200.7	PS



**Project Name:** MAHER WELL PILOT

**Project Number:** 20107 Lab Number: **Report Date:** 

L1726666 08/23/17

**SAMPLE RESULTS** 

Lab ID: Client ID: L1726666-03 FILTER B-1

Sample Location:

BARNSTABLE, MA

Matrix: Dw Date Collected:

08/02/17 09:00

Date Received:

08/02/17

Not Specified Field Prep:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab										
Aluminum, Total	ND		mg/l	0.100		1	08/09/17 12:10	0 08/09/17 19:53	EPA 3005A	19,200.7	PS
Calcium, Total	4.49		mg/l	0.100		1	08/09/17 12:10	0 08/09/17 19:53	EPA 3005A	19,200.7	PS
Copper, Total	ND		mg/l	0.010		1	08/09/17 12:10	0 08/09/17 19:53	EPA 3005A	19,200.7	PS
Iron, Total	ND		mg/l	0.050		1	08/09/17 12:10	0 08/09/17 19:53	EPA 3005A	19,200.7	PS
Manganese, Total	ND		mg/l	0.010		1	08/09/17 12:10	0 08/09/17 19:53	EPA 3005A	19,200.7	PS
Sodium, Total	13.5		mg/l	2.00		1	08/09/17 12:10	0 08/09/17 19:53	EPA 3005A	19,200.7	PS
Total Hardness by	/ SM 2340E	3 - Mansfie	ld Lab								
Hardness	21.6		mg/l	0.660	NA	1	08/09/17 12:10	0 08/09/17 19:53	EPA 3005A	19,200.7	PS



Project Name: MAHER WELL PILOT

**Project Number:** 20107

Lab Number: Report Date: L1726666 08/23/17

**SAMPLE RESULTS** 

Lab ID: L1726666-04

Client ID: FILTER C-1

Sample Location: BARNSTABLE, MA

Matrix: Dw

Date Collected:

08/02/17 09:00

Date Received: 08/02/17

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab										
Aluminum, Total	ND		mg/l	0.100		1	08/09/17 12:10	0 08/09/17 19:57	EPA 3005A	19,200.7	PS
Calcium, Total	4.60		mg/l	0.100		1	08/09/17 12:10	0 08/09/17 19:57	EPA 3005A	19,200.7	PS
Copper, Total	ND		mg/l	0.010		1	08/09/17 12:10	0 08/09/17 19:57	EPA 3005A	19,200.7	PS
Iron, Total	ND		mg/l	0.050		1	08/09/17 12:10	0 08/09/17 19:57	EPA 3005A	19,200.7	PS
Manganese, Total	ND		mg/l	0.010		1	08/09/17 12:10	0 08/09/17 19:57	EPA 3005A	19,200.7	PS
Sodium, Total	13.6		mg/l	2.00		1	08/09/17 12:10	0 08/09/17 19:57	EPA 3005A	19,200.7	PS
Total Hardness by	SM 2340E	B - Mansfiel	d Lab								
Hardness	22.2		mg/l	0.660	NA	1	08/09/17 12:10	0 08/09/17 19:57	EPA 3005A	19,200.7	PS



Project Name: MAHER WELL PILOT

**Project Number:** 20107

Lab Number: Report Date: L1726666

08/23/17

**SAMPLE RESULTS** 

Lab ID: L1726666-05 Client ID: FILTER D-1

Client ID: FILTER D-1
Sample Location: BARNSTABLE, MA

Sample Location: BAI Matrix: Dw

Date Collected:

08/02/17 09:00

Date Received:

08/02/17

Field Prep:

Not Specified

Dilution Date Date Prep **Analytical** Method Factor Prepared Method **Analyzed Parameter** Result Qualifier Units RL MDL **Analyst** Total Metals - Mansfield Lab

ND Aluminum, Total mg/l 0.100 1 08/09/17 12:10 08/09/17 20:13 EPA 3005A 19,200.7 PS Calcium, Total 4.52 0.100 1 19,200.7 PS mg/l 08/09/17 12:10 08/09/17 20:13 EPA 3005A 1 19,200.7 PS Copper, Total ND 0.010 08/09/17 12:10 08/09/17 20:13 EPA 3005A mg/l 1 Iron, Total ND mg/l 0.050 08/09/17 12:10 08/09/17 20:13 EPA 3005A 19,200.7 PS ND 0.010 1 08/09/17 12:10 08/09/17 20:13 EPA 3005A 19,200.7 PS Manganese, Total mg/l Sodium, Total 13.4 2.00 1 08/09/17 12:10 08/09/17 20:13 EPA 3005A 19,200.7 PS mg/l --

Total Hardness by SM 2340B - Mansfield Lab

Hardness 22.1 mg/l 0.660 NA 1 08/09/17 12:10 08/09/17 20:13 EPA 3005A 19,200.7 PS



Lab Number:

**Project Name:** MAHER WELL PILOT

L1726666 Project Number: 20107 Report Date: 08/23/17

Method	Blank	Analysis
<b>Batch</b>	Quality	Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfi	ield Lab for sample(s):	01 Batc	h: WG10	)28413-	1				
Antimony, Total	ND	mg/l	0.0040		1	08/03/17 10:00	08/04/17 13:01	3,200.8	BV
Arsenic, Total	ND	mg/l	0.0010		1	08/03/17 10:00	08/04/17 13:01	3,200.8	BV
Barium, Total	ND	mg/l	0.0010		1	08/03/17 10:00	08/04/17 13:01	3,200.8	BV
Beryllium, Total	ND	mg/l	0.0010		1	08/03/17 10:00	08/04/17 13:01	3,200.8	BV
Cadmium, Total	ND	mg/l	0.0002		1	08/03/17 10:00	08/04/17 13:01	3,200.8	BV
Chromium, Total	ND	mg/l	0.0030		1	08/03/17 10:00	08/04/17 13:01	3,200.8	BV
Nickel, Total	ND	mg/l	0.00200		1	08/03/17 10:00	08/04/17 13:01	3,200.8	BV
Selenium, Total	ND	mg/l	0.0050		1	08/03/17 10:00	08/04/17 13:01	3,200.8	BV
Thallium, Total	ND	mg/l	0.0010		1	08/03/17 10:00	08/04/17 13:01	3,200.8	BV

**Prep Information** 

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfie	eld Lab for sample(s):	01 Batcl	n: WG10	028415-	1				
Aluminum, Total	ND	mg/l	0.100		1	08/03/17 10:00	08/08/17 17:51	19,200.7	AB
Calcium, Total	ND	mg/l	0.100		1	08/03/17 10:00	08/08/17 17:51	19,200.7	AB
Copper, Total	ND	mg/l	0.010		1	08/03/17 10:00	08/08/17 17:51	19,200.7	AB
Iron, Total	ND	mg/l	0.050		1	08/03/17 10:00	08/08/17 17:51	19,200.7	AB
Magnesium, Total	ND	mg/l	0.100		1	08/03/17 10:00	08/08/17 17:51	19,200.7	AB
Manganese, Total	ND	mg/l	0.010		1	08/03/17 10:00	08/08/17 17:51	19,200.7	AB
Potassium, Total	ND	mg/l	2.50		1	08/03/17 10:00	08/08/17 17:51	19,200.7	AB
Silver, Total	ND	mg/l	0.007		1	08/03/17 10:00	08/08/17 17:51	19,200.7	AB
Sodium, Total	ND	mg/l	2.00		1	08/03/17 10:00	08/08/17 17:51	19,200.7	AB
Zinc, Total	ND	mg/l	0.050		1	08/03/17 10:00	08/08/17 17:51	19,200.7	AB

**Prep Information** 

Digestion Method: EPA 3005A



Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number:

L1726666

Report Date:

08/23/17

# Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	
Total Hardness by SM	1 2340B - Mansfield La	b for sam	ple(s): 0	1 Bate	ch: WG102	8415-1			
Hardness	ND	mg/l	0.660	NA	1	08/03/17 10:00	08/08/17 17:51	19,200.7	AB

**Prep Information** 

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytica Method	
Total Metals - Mans	sfield Lab for sample(s):	01 Batc	h: WG10	028518-	1				
Mercury, Total	ND	mg/l	0.0002		1	08/03/17 11:38	08/03/17 15:01	1 3,245.1	MG

#### **Prep Information**

Digestion Method: EPA 245.1

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Ma	nsfield Lab	for sample	e(s): 01	Batch: V	VG1029	9006-1				
Iron, Dissolved	ND		mg/l	0.050		1	08/04/17 14:30	08/08/17 13:47	19,200.7	PS
Manganese, Dissolved	ND		mg/l	0.010		1	08/04/17 14:30	08/08/17 13:47	19,200.7	PS

#### **Prep Information**

Digestion Method: EPA 3005A

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield	d Lab for sample(s):	02-05 I	Batch: W	G10303	38-1				
Aluminum, Total	ND	mg/l	0.100		1	08/09/17 12:10	08/09/17 19:24	19,200.7	PS
Calcium, Total	ND	mg/l	0.100		1	08/09/17 12:10	08/09/17 19:24	19,200.7	PS
Copper, Total	ND	mg/l	0.010		1	08/09/17 12:10	08/09/17 19:24	19,200.7	PS
Iron, Total	ND	mg/l	0.050		1	08/09/17 12:10	08/09/17 19:24	19,200.7	PS
Manganese, Total	ND	mg/l	0.010		1	08/09/17 12:10	08/09/17 19:24	19,200.7	PS



L1726666

Project Name: MAHER WELL PILOT

R WELL PILOT Lab Number:

Project Number: 20107 Report Date: 08/23/17

Method Blank Analysis Batch Quality Control

Sodium, Total ND mg/l 2.00 -- 1 08/09/17 12:10 08/09/17 19:24 19,200.7 PS

**Prep Information** 

Digestion Method: EPA 3005A

**Dilution** Analytical **Date** Date Method Analyst **Parameter Result Qualifier** Units RLMDL **Factor Prepared** Analyzed Total Hardness by SM 2340B - Mansfield Lab for sample(s): 02-05 Batch: WG1030338-1 Hardness ND mg/l 0.660 NA 08/09/17 12:10 08/09/17 19:24 19,200.7 PS

**Prep Information** 

Digestion Method: EPA 3005A



08/23/17

### Lab Control Sample Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1726666

Report Date:

Parameter	LCS %Recovery	LCSD Qual %Recovery	%Recovery Qual Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample	e(s): 01 Batch:	WG1028413-2				
Antimony, Total	111	-	85-115	-		
Arsenic, Total	105	-	85-115	-		
Barium, Total	109	-	85-115	-		
Beryllium, Total	102	-	85-115	-		
Cadmium, Total	108	-	85-115	-		
Chromium, Total	113	-	85-115	-		
Nickel, Total	112	-	85-115	-		
Selenium, Total	109	-	85-115	-		
Thallium, Total	105	-	85-115	-		
otal Metals - Mansfield Lab Associated sample	e(s): 01 Batch:	WG1028415-2				
Aluminum, Total	115	-	85-115	-		
Calcium, Total	94	-	85-115	-		
Copper, Total	103	-	85-115	-		
Iron, Total	112	-	85-115	-		
Magnesium, Total	101	-	85-115	-		
Manganese, Total	106	-	85-115	-		
Potassium, Total	99	-	85-115	-		
Silver, Total	107	-	85-115	-		
Sodium, Total	99	-	85-115	-		
Zinc, Total	111	-	85-115	-		



### Lab Control Sample Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1726666

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Hardness by SM 2340B - Mansfield Lab	Associated sample(s):	01 Batch: WG1028415-2			
Hardness	98	-	85-115	-	
Total Metals - Mansfield Lab Associated samp	le(s): 01 Batch: WG1	028518-2			
Mercury, Total	108	-	85-115	-	
Dissolved Metals - Mansfield Lab Associated s	sample(s): 01 Batch: \	WG1029006-2			
Iron, Dissolved	113	-	85-115	-	
Manganese, Dissolved	105	-	85-115	-	
Total Metals - Mansfield Lab Associated samp	le(s): 02-05 Batch: W	/G1030338-2			
Aluminum, Total	<b>118</b> G	-	85-115	-	
Calcium, Total	99	-	85-115	-	
Copper, Total	108	-	85-115	-	
Iron, Total	112	-	85-115	-	
Manganese, Total	107	-	85-115	-	
Sodium, Total	100	-	85-115	-	
Total Hardness by SM 2340B - Mansfield Lab	Associated sample(s):	02-05 Batch: WG1030338-2			
Hardness	99	-	85-115	-	



Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1726666

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qua	MSD al Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield	Lab Associated san	nple(s): 01	QC Batch II	D: WG1028413	3-3	QC Sample	: L1726599-01	Clien	t ID: MS Sa	ample		
Antimony, Total	ND	0.5	0.5009	100		-	-		70-130	-		20
Arsenic, Total	ND	0.12	0.1228	102		-	-		70-130	-		20
Barium, Total	0.0984	2	2.010	96		-	-		70-130	-		20
Beryllium, Total	ND	0.05	0.0563	113		-	-		70-130	-		20
Cadmium, Total	ND	0.051	0.0533	104		-	-		70-130	-		20
Chromium, Total	ND	0.2	0.1932	97		-	-		70-130	-		20
Nickel, Total	ND	0.5	0.4752	95		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1342	112		-	-		70-130	-		20
Thallium, Total	ND	0.12	0.1132	94		-	-		70-130	-		20
otal Metals - Mansfield	Lab Associated san	nple(s): 01	QC Batch II	D: WG1028413	3-5	QC Sample	: L1726600-01	Clien	t ID: MS Sa	ample		
Antimony, Total	ND	0.5	0.5478	110		-	-		70-130	-		20
Arsenic, Total	ND	0.12	0.1216	101		-	-		70-130	-		20
Barium, Total	0.0386	2	2.103	103		-	-		70-130	-		20
Beryllium, Total	ND	0.05	0.0585	117		-	-		70-130	-		20
Cadmium, Total	ND	0.051	0.0567	111		-	-		70-130	-		20
Chromium, Total	ND	0.2	0.2106	105		-	-		70-130	-		20
Nickel, Total	0.0027	0.5	0.5248	104		-	-		70-130	-		20
Selenium, Total	ND	0.12	0.1124	94		-	-		70-130	-		20
Thallium, Total	ND	0.12	0.1182	98		-	-		70-130	-		20

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number:

L1726666

arameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield La	ab Associated sar	nple(s): 01	QC Batch I	D: WG1028415-	3 QC Sample	e: L1726599-01	Client ID: MS S	ample	
Aluminum, Total	ND	2	2.43	122	-	-	75-125	-	20
Calcium, Total	72.3	10	80.6	83	-	-	75-125	-	20
Copper, Total	ND	0.25	0.283	113	-	-	75-125	-	20
Iron, Total	0.114	1	1.23	112	-	-	75-125	-	20
Magnesium, Total	15.6	10	24.9	93	-	-	75-125	-	20
Manganese, Total	0.989	0.5	1.49	100	-	-	75-125	-	20
Potassium, Total	14.5	10	25.0	105	-	-	75-125	-	20
Silver, Total	ND	0.05	0.055	110	-	-	75-125	-	20
Sodium, Total	523	10	515	0	Q -	-	75-125	-	20
Zinc, Total	ND	0.5	0.539	108	-	-	75-125	-	20
Total Hardness by SM 234	40B - Mansfield La	b Associate	ed sample(s)	: 01 QC Batch	ID: WG102841	5-3 QC Samp	le: L1726599-01	Client ID:	MS Sample
Hardness	245	66.2	304	89	-	-	75-125	-	20
Γotal Metals - Mansfield La	ab Associated sar	nple(s): 01	QC Batch I	D: WG1028518-	3 QC Sample	e: L1726599-01	Client ID: MS S	ample	
Mercury, Total	ND	0.005	0.0046	91	-	-	70-130	-	20
Total Metals - Mansfield La	ab Associated sar	nple(s): 01	QC Batch I	D: WG1028518-	5 QC Sample	e: L1726745-01	Client ID: MS S	ample	
Mercury, Total	ND	0.005	0.0049	97	-	-	70-130	-	20
Dissolved Metals - Mansfie	eld Lab Associated	d sample(s)	: 01 QC Ba	atch ID: WG1029	006-3 QC Sa	ample: L1726916	6-01 Client ID: I	MS Sample	)
Iron, Dissolved	ND	1	1.13	113	-	-	75-125	-	20
Manganese, Dissolved	ND	0.5	0.524	105	-	-	75-125	-	20



Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1726666

arameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
otal Metals - Mansfield Lab	Associated san	nple(s): 02-05	QC Ba	tch ID: WG103	0338-3	QC Sam	ple: L1726830-02	Client ID: MS	Sample	
Aluminum, Total	ND	2	2.46	123		-	-	75-125	-	20
Calcium, Total	147	10	150	30	Q	-	-	75-125	-	20
Copper, Total	ND	0.25	0.287	115		-	-	75-125	-	20
Iron, Total	ND	1	1.14	114		-	-	75-125	-	20
Manganese, Total	0.094	0.5	0.615	104		-	-	75-125	-	20
Sodium, Total	662	10	627	0	Q	-	-	75-125	-	20
otal Hardness by SM 2340	B - Mansfield La	b Associated	sample(s	): 02-05 QC E	Batch ID	): WG1030	338-3 QC Samp	le: L1726830-0	2 Client II	D: MS Sam
Hardness	420	66.2	459	59	Q	-	-	75-125	-	20



# Lab Duplicate Analysis Batch Quality Control

**Project Name:** MAHER WELL PILOT

**Project Number:** 20107

L1726666 08/23/17

Lab Number:

Report Date:

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01	QC Batch ID: WG10	28413-4 QC Sample:	L1726599-01	Client ID:	DUP Sample	
Antimony, Total	ND	ND	mg/l	NC		20
Arsenic, Total	ND	ND	mg/l	NC		20
Cadmium, Total	ND	ND	mg/l	NC		20
Chromium, Total	ND	ND	mg/l	NC		20
Nickel, Total	ND	ND	mg/l	NC		20
Selenium, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01	QC Batch ID: WG10	28415-4 QC Sample:	L1726599-01	Client ID:	DUP Sample	
Iron, Total	0.114	0.095	mg/l	18		20
Total Metals - Mansfield Lab Associated sample(s): 01	QC Batch ID: WG10	28518-4 QC Sample:	L1726599-01	Client ID:	DUP Sample	
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01	QC Batch ID: WG10	28518-6 QC Sample:	L1726745-01	Client ID:	DUP Sample	
Mercury, Total	ND	ND	mg/l	NC		20
Total Metals - Mansfield Lab Associated sample(s): 02	-05 QC Batch ID: WG	G1030338-4 QC Samp	ole: L1726830-	02 Client	ID: DUP Samp	ole
Iron, Total	ND	ND	mg/l	NC		20



# INORGANICS & MISCELLANEOUS



Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number:

L1726666

**Report Date:** 08/23/17

#### **SAMPLE RESULTS**

Lab ID: L1726666-01

Client ID: RAW-1

Sample Location: BARNSTABLE, MA

Matrix: Dw

Date Collected: 08/02/17 09:00

Date Received: 08/02/17 Field Prep: Not Specified

Parameter	Result Q	ualifier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - We	estborough Lab								
Turbidity	ND	NTU	0.20		1	-	08/02/17 23:39	44,180.1	AS
Odor @ 60 C	NO ODOR	TON	1		1	-	08/02/17 20:30	30,2150B	AS
Color, True	ND	A.P.C.U.	5.0		1	-	08/02/17 20:40	121,2120B	AS
Color, Apparent	ND	A.P.C.U.	5.0		1	-	08/02/17 20:40	121,2120B	AS
Alkalinity, Total	15.0	mg CaCO3/L	2.00	NA	1	-	08/02/17 20:51	121,2320B	MR
Carbon Dioxide	130	mg/l	2.0		1	-	08/02/17 20:51	121,4500CO2-D	MR
Solids, Total Dissolved	42.	mg/l	10		1	-	08/03/17 13:35	121,2540C	DW
Cyanide, Total	ND	mg/l	0.005		1	08/03/17 10:45	08/03/17 14:30	121,4500CN-CE	LK
Fluoride	ND	mg/l	0.20		1	08/09/17 16:53	08/09/17 19:30	121,4500F-C	MM
pH (H)	6.4	SU	-	NA	1	-	08/02/17 18:09	121,4500H+-B	AS
Nitrogen, Nitrate	0.25	mg/l	0.10		1	-	08/02/17 21:06	44,353.2	MR
Total Organic Carbon	0.510	mg/l	0.500		1	-	08/07/17 13:03	121,5310C	AG
Surfactants, MBAS	ND	mg/l	0.050		1	08/02/17 18:00	08/02/17 21:44	121,5540C	CW
Bacteria in Water - Wes	stborough Lab								
Coliform, Total	Positive	col/100ml	-	NA	1	-	08/02/17 17:50	121,9223B	AJ
Escherichia Coli	Negative	col/100ml	-	NA	1	-	08/02/17 17:50	121,9223B	AJ
Anions by Ion Chromato	ography - Westbo	rough Lab							
Chloride	22.0	mg/l	0.500		1	-	08/03/17 18:20	44,300.0	AU
Sulfate	10.0	mg/l	1.00		1	-	08/03/17 18:20	44,300.0	AU



Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number:

L1726666

**Report Date:** 08/23/17

#### **SAMPLE RESULTS**

Lab ID: L1726666-02
Client ID: FILTER A-1
Sample Location: BARNSTABLE, MA

Matrix:

Dw

Date Collected:

08/02/17 09:00

Date Received:

08/02/17

Field Prep:

Not Specified

Parameter	Result Q	ualifier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	Westhorough Lab								
Turbidity	ND	NTU	0.20		1	-	08/02/17 23:39	44,180.1	AS
Color, True	ND	A.P.C.U.	5.0		1	-	08/02/17 20:40	121,2120B	AS
Color, Apparent	ND	A.P.C.U.	5.0		1	-	08/02/17 20:40	121,2120B	AS
Alkalinity, Total	41.1	mg CaCO3/L	2.00	NA	1	-	08/02/17 20:51	121,2320B	MR
Carbon Dioxide	200	mg/l	2.0		1	-	08/02/17 20:51	121,4500CO2-D	MR
pH (H)	6.9	SU	-	NA	1	-	08/02/17 18:09	121,4500H+-B	AS
Nitrogen, Nitrate	0.26	mg/l	0.10		1	-	08/02/17 21:13	44,353.2	MR
Bacteria in Water - W	Vestborough Lab								
Coliform, Total	Negative	col/100ml	-	NA	1	-	08/02/17 17:50	121,9223B	AJ
Escherichia Coli	Negative	col/100ml	-	NA	1	-	08/02/17 17:50	121,9223B	AJ
Anions by Ion Chrom	natography - Westbo	rough Lab							
Chloride	22.6	mg/l	0.500		1	-	08/03/17 18:32	44,300.0	AU
Sulfate	9.56	mg/l	1.00		1	-	08/03/17 18:32	44,300.0	AU



**Project Name:** MAHER WELL PILOT

Project Number: 20107

Lab Number:

L1726666

Report Date: 08/23/17

#### **SAMPLE RESULTS**

Lab ID: L1726666-03 FILTER B-1 Client ID: Sample Location: BARNSTABLE, MA

Matrix:

Dw

Date Collected:

08/02/17 09:00

Date Received:

08/02/17

Not Specified Field Prep:

Parameter	Result	Qualifier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Wes	tborough Lat	0							
Turbidity	ND	NTU	0.20		1	-	08/02/17 23:39	44,180.1	AS
Color, True	ND	A.P.C.U.	5.0		1	-	08/02/17 20:40	121,2120B	AS
Color, Apparent	ND	A.P.C.U.	5.0		1	-	08/02/17 20:40	121,2120B	AS
Alkalinity, Total	42.7	mg CaCO3/L	2.00	NA	1	-	08/02/17 20:51	121,2320B	MR
Carbon Dioxide	190	mg/l	2.0		1	-	08/02/17 20:51	121,4500CO2-D	MR
pH (H)	6.8	SU	-	NA	1	-	08/02/17 18:09	121,4500H+-B	AS
Nitrogen, Nitrate	0.27	mg/l	0.10		1	-	08/02/17 21:15	44,353.2	MR
Total Organic Carbon	0.510	mg/l	0.500		1	-	08/07/17 13:03	121,5310C	AG
Dissolved Organic Carbon	ND	mg/l	1.0		1	08/03/17 02:00	08/07/17 13:03	121,5310C	AG
Bacteria in Water - Westb	orough Lab								
Coliform, Total	Negative	col/100ml	-	NA	1	-	08/02/17 17:50	121,9223B	AJ
Escherichia Coli	Negative	col/100ml	-	NA	1	-	08/02/17 17:50	121,9223B	AJ
Anions by Ion Chromatog	raphy - West	tborough Lab							
Chloride	22.6	mg/l	0.500		1	-	08/03/17 18:44	44,300.0	AU
Sulfate	9.54	mg/l	1.00		1	-	08/03/17 18:44	44,300.0	AU



**Project Name:** MAHER WELL PILOT

Project Number: 20107

L1726666 **Report Date:** 08/23/17

Lab Number:

#### **SAMPLE RESULTS**

Lab ID: L1726666-04 FILTER C-1 Client ID: Sample Location: BARNSTABLE, MA

Matrix: Dw Date Collected: 08/02/17 09:00

Date Received: 08/02/17

Not Specified Field Prep:

Parameter	Result Q	ualifier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	Westborough Lab								
Turbidity	ND	NTU	0.20		1	-	08/02/17 23:39	44,180.1	AS
Color, True	ND	A.P.C.U.	5.0		1	-	08/02/17 20:40	121,2120B	AS
Color, Apparent	ND	A.P.C.U.	5.0		1	-	08/02/17 20:40	121,2120B	AS
Alkalinity, Total	43.2	mg CaCO3/L	2.00	NA	1	-	08/02/17 20:51	121,2320B	MR
Carbon Dioxide	200	mg/l	2.0		1	-	08/02/17 20:51	121,4500CO2-D	MR
pH (H)	6.9	SU	-	NA	1	-	08/02/17 18:09	121,4500H+-B	AS
Nitrogen, Nitrate	0.26	mg/l	0.10		1	-	08/02/17 21:16	44,353.2	MR
Bacteria in Water - V	Vestborough Lab								
Coliform, Total	Negative	col/100ml	-	NA	1	-	08/02/17 17:50	121,9223B	AJ
Escherichia Coli	Negative	col/100ml	-	NA	1	-	08/02/17 17:50	121,9223B	AJ
Anions by Ion Chrom	natography - Westbo	rough Lab							
Chloride	22.5	mg/l	0.500		1	-	08/03/17 18:56	44,300.0	AU
Sulfate	9.54	mg/l	1.00		1	-	08/03/17 18:56	44,300.0	AU



**Project Name:** MAHER WELL PILOT

Project Number: 20107

Lab Number:

L1726666

Report Date: 08/23/17

#### **SAMPLE RESULTS**

Lab ID: L1726666-05 FILTER D-1 Client ID: Sample Location: BARNSTABLE, MA

Date Collected:

08/02/17 09:00

Date Received:

08/02/17

Field Prep:

Not Specified

Matrix: Dw

Parameter	Result	Qualifier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Wes	stborough Lab	)							
Turbidity	ND	NTU	0.20		1	-	08/02/17 23:39	44,180.1	AS
Color, True	ND	A.P.C.U.	5.0		1	-	08/02/17 20:40	121,2120B	AS
Color, Apparent	ND	A.P.C.U.	5.0		1	-	08/02/17 20:40	121,2120B	AS
Alkalinity, Total	41.1	mg CaCO3/L	2.00	NA	1	-	08/02/17 20:51	121,2320B	MR
Carbon Dioxide	180	mg/l	2.0		1	-	08/02/17 20:51	121,4500CO2-D	MR
pH (H)	6.9	SU	-	NA	1	-	08/02/17 18:09	121,4500H+-B	AS
Nitrogen, Nitrate	0.26	mg/l	0.10		1	-	08/02/17 21:17	44,353.2	MR
Total Organic Carbon	0.520	mg/l	0.500		1	-	08/07/17 13:03	121,5310C	AG
Dissolved Organic Carbon	ND	mg/l	1.0		1	08/03/17 02:00	08/07/17 13:03	121,5310C	AG
Bacteria in Water - Westh	oorough Lab								
Coliform, Total	Negative	col/100ml	-	NA	1	-	08/02/17 17:50	121,9223B	AJ
Escherichia Coli	Negative	col/100ml	-	NA	1	-	08/02/17 17:50	121,9223B	AJ
Anions by Ion Chromatog	graphy - West	borough Lab							
Chloride	22.5	mg/l	0.500		1	-	08/03/17 19:08	44,300.0	AU
Sulfate	9.54	mg/l	1.00		1	-	08/03/17 19:08	44,300.0	AU



**Project Name:** MAHER WELL PILOT

Project Number: 20107 Lab Number:

L1726666

**Report Date:** 08/23/17

#### **SAMPLE RESULTS**

Lab ID: L1726666-06 FILTER B-1 Client ID: BARNSTABLE, MA

Sample Location:

Matrix:

Dw

Date Collected:

08/02/17 09:00

Date Received:

08/02/17

Field Prep:

Not Specified

Parameter	Result	Qualifier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Simulated Distribution S							•		
	•	•							
Chlorine Dose	ND	mg Cl2/L	-		1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
Incubation Time	168	hours	-		1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
pH, Initial	6.8	SU	-		1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
pH, Final	7.19	SU	-		1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
Incubation Temp, Initial	20	deg. C	-		1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
Incubation Temp, Final	20	deg. C	-		1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
Residual Chlorine, Initial	N/A	mg/l	.05		1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
Residual Chlorine, Final (as	s 0.560	mg/l	0.050		1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
Total) Residual Chlorine, Final (as Free)	s ND	mg/l	0.050		1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
General Chemistry - We	estborough Lab	)							
Chlorine, Total Residual	0.56	mg/l	0.04		2	-	08/09/17 17:21	121,4500CL-D	AS
Chlorine, Residual Free	ND	mg/l	0.05		1	-	08/09/17 17:21	121,4500CL-D	AS
pH (H)	7.2	SU	-	NA	1	-	08/09/17 19:56	121,4500H+-B	AS



Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number:

L1726666

Report Date:

08/23/17

#### **SAMPLE RESULTS**

Lab ID: L1726666-07 Client ID: FILTER D-1

Sample Location: BARNSTABLE, MA

Matrix: Dw

Date Collected:

08/02/17 09:00

Date Received:

08/02/17

Field Prep: Not Specified

Parameter		Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Simulated Distribution	n Syster	n - Westl	orough l	₋ab							
Chlorine Dose	١	ND		mg Cl2/L	-		1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
Incubation Time	1	68		hours	-		1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
pH, Initial	6	6.9		SU	-		1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
pH, Final	7	7.1		SU	-		1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
Incubation Temp, Initial	2	20		deg. C	-		1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
Incubation Temp, Final	2	20		deg. C	-		1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
Residual Chlorine, Initial	١	N/A		mg/l	.05		1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
Residual Chlorine, Final	(as (	).270		mg/l	0.050		1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
Total) Residual Chlorine, Final Free)	(as 1	ND		mg/l	0.050		1	08/02/17 17:30	08/09/17 13:00	8,5710C	JO
General Chemistry -	Westbor	ough Lal	)								
Chlorine, Total Residual	C	).27		mg/l	0.02		1	-	08/09/17 17:21	121,4500CL-D	AS
Chlorine, Residual Free	١	ND		mg/l	0.05		1	-	08/09/17 17:21	121,4500CL-D	AS
pH (H)	7	7.1		SU	-	NA	1	-	08/09/17 19:56	121,4500H+-B	AS



Lab Number:

**Project Name:** MAHER WELL PILOT

L1726666 Project Number: 20107 **Report Date:** 08/23/17

# Method Blank Analysis Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Bacteria in Water - Westl	borough Lat	o for samp	le(s): 01-0	5 Bato	h: WG1	1028244-1				
Coliform, Total	Negative		col/100ml	-	NA	1	-	08/02/17 17:50	121,9223B	AJ
Escherichia Coli	Negative		col/100ml	-	NA	1	-	08/02/17 17:50	121,9223B	AJ
General Chemistry - Wes	stborough L	ab for sam	ple(s): 01	Batch	: WG10	28252-1				
Odor	NO ODO	R	TON	1		1	-	08/02/17 20:30	30,2150B	AS
General Chemistry - Wes	stborough L	ab for sam	ple(s): 01-	∙05 Ba	tch: WC	G1028253-	1			
Nitrogen, Nitrate	ND		mg/l	0.10		1	-	08/02/17 20:48	44,353.2	MR
General Chemistry - Wes	stborough L	ab for sam	ple(s): 01-	∙05 Ba	tch: WC	G1028277-	1			
Alkalinity, Total	ND		mg CaCO3/L	2.00	NA	1	-	08/02/17 20:51	121,2320B	MR
General Chemistry - Wes	stborough L	ab for sam	ple(s): 01-	.05 Ba	tch: WC	G1028289-	1			
Turbidity	ND		NTU	0.20		1	-	08/02/17 23:39	44,180.1	AS
General Chemistry - Wes	stborough L	ab for sam	ple(s): 01	Batch	: WG10	28299-1				
Surfactants, MBAS	ND		mg/l	0.050		1	08/02/17 18:00	08/02/17 21:39	121,5540C	CW
General Chemistry - Wes	stborough L	ab for sam	ple(s): 01	Batch	: WG10	28387-1				
Solids, Total Dissolved	ND		mg/l	10		1	-	08/03/17 13:35	121,2540C	DW
General Chemistry - Wes	stborough L	ab for sam	ple(s): 01	Batch	: WG10	28503-1				
Cyanide, Total	ND		mg/l	0.005		1	08/03/17 10:45	08/03/17 14:16	121,4500CN-C	E LK
Anions by Ion Chromatog	graphy - We	stborough	Lab for sa	mple(s)	: 01-05	Batch: W	/G1029082-1			
Chloride	ND		mg/l	0.500		1	-	08/03/17 17:56	44,300.0	AU
Sulfate	ND		mg/l	1.00		1	-	08/03/17 17:56	44,300.0	AU
General Chemistry - Wes	stborough L	ab for sam	ple(s): 01,	03,05	Batch:	WG102944	15-1			
Total Organic Carbon	ND		mg/l	0.500		1	-	08/07/17 13:03	121,5310C	AG
General Chemistry - Wes	stborough L	ab for sam	ple(s): 03,	05 Ba	tch: WG	91029602-	1			
Dissolved Organic Carbon	ND		mg/l	1.0		1	08/03/17 02:00	08/07/17 13:03	121,5310C	AG
General Chemistry - Wes	stborough L	ab for sam	ple(s): 01	Batch	: WG10	30446-1				
Fluoride	ND		mg/l	0.20		1	08/09/17 16:53	08/09/17 19:30	121,4500F-C	MM
General Chemistry - Wes	stborough L	ab for sam	ple(s): 06-	.07 Ba	tch: WC	G1030455-	1			
Chlorine, Total Residual	ND		mg/l	0.02		1	-	08/09/17 17:21	121,4500CL-E	) AS
General Chemistry - Wes	stborough L	ab for sam	ple(s): 06-	07 Ba	tch: WC	G1030456-	1			
Chlorine, Residual Free	ND		mg/l	0.05		1	-	08/09/17 17:21	121,4500CL-E	) AS



### Lab Control Sample Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1726666

Parameter	LCS %Recovery Qu	LCSD al %Recovery	%Recove	•	Qual	RPD Limits
General Chemistry - Westborough Lab	Associated sample(s): 01-	05 Batch: WG10282	243-1			
рН	100	-	99-101	-		5
General Chemistry - Westborough Lab	Associated sample(s): 01-	05 Batch: WG10282	253-2			
Nitrogen, Nitrate	100	-	90-110	-		
General Chemistry - Westborough Lab	Associated sample(s): 01-	05 Batch: WG10282	277-2			
Alkalinity, Total	106	-	90-110	-		10
General Chemistry - Westborough Lab	Associated sample(s): 01-	05 Batch: WG10282	289-2			
Turbidity	94	-	90-110	-		
General Chemistry - Westborough Lab	Associated sample(s): 01	Batch: WG1028299-	-2			
Surfactants, MBAS	100	-	65-126	-		
General Chemistry - Westborough Lab	Associated sample(s): 01	Batch: WG1028387-	-2			
Solids, Total Dissolved	108	-	80-120	-		
General Chemistry - Westborough Lab	Associated sample(s): 01	Batch: WG1028503	-2			
Cyanide, Total	90	-	90-110	-		



### Lab Control Sample Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1726666

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Anions by Ion Chromatography - Westboro	ugh Lab Associated sa	mple(s): 01-05 Batch: Wo	G1029082-2		
Chloride	102	-	90-110	-	
Sulfate	103	•	90-110	-	
General Chemistry - Westborough Lab Ass	sociated sample(s): 01,0	03,05 Batch: WG102944	5-2		
Total Organic Carbon	97	-	90-110	-	
General Chemistry - Westborough Lab Ass	sociated sample(s): 03,0	05 Batch: WG1029602-2			
Dissolved Organic Carbon	97	-	90-110	-	
General Chemistry - Westborough Lab Ass	sociated sample(s): 01	Batch: WG1030446-2			
Fluoride	93	-	78-115	-	
General Chemistry - Westborough Lab Ass	sociated sample(s): 06-0	07 Batch: WG1030455-2			
Chlorine, Total Residual	109	-	90-110	-	
General Chemistry - Westborough Lab Ass	sociated sample(s): 06-	07 Batch: WG1030456-2			
Chlorine, Residual Free	105	-		-	
General Chemistry - Westborough Lab Ass	sociated sample(s): 06-0	07 Batch: WG1030501-1			
рН	100	-	99-101	-	5



Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number:

L1726666

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual Found	MSD %Recovery Q	Recovery ual Limits	RPD Qual	RPD Limits
General Chemistry - Westborou	gh Lab Asso	ociated sampl	e(s): 01-05	QC Batch II	D: WG1028253-	4 QC Sample: L1	726666-01 Clier	nt ID: RAW-1	
Nitrogen, Nitrate	0.25	4	4.2	99		-	83-113	-	6
General Chemistry - Westborou	gh Lab Asso	ociated sampl	e(s): 01-05	QC Batch II	D: WG1028277-	4 QC Sample: L1	726666-01 Clier	nt ID: RAW-1	
Alkalinity, Total	15.0	100	114	99	-	-	86-116	-	10
General Chemistry - Westborou	gh Lab Asso	ociated sampl	e(s): 01 C	QC Batch ID: V	NG1028299-4	QC Sample: L1726	521-06 Client IE	D: MS Samp	e
Surfactants, MBAS	0.140	0.4	0.440	75	-	-	52-157	-	32
General Chemistry - Westborou	gh Lab Asso	ociated sampl	e(s): 01 C	QC Batch ID: V	NG1028503-4	QC Sample: L1726	676-01 Client IE	D: MS Samp	e
Cyanide, Total	0.034	0.2	0.226	96	-	-	90-110	-	30
Anions by Ion Chromatography	- Westborou	igh Lab Asso	ciated samp	ole(s): 01-05	QC Batch ID: V	VG1029082-3 QC	Sample: L172666	66-01 Clien	t ID: RAW
Chloride	22.0	4	25.3	83	Q -	-	90-110	-	18
Sulfate	10.0	8	18.0	100	-	-	90-110	-	20
General Chemistry - Westborou	gh Lab Asso	ociated sampl	e(s): 01,03,	05 QC Batc	th ID: WG10294	45-4 QC Sample:	L1726601-01 C	lient ID: MS	Sample
Total Organic Carbon	7.31	8	14.9	95	-	-	80-120	-	20
General Chemistry - Westborou	gh Lab Asso	ociated sampl	e(s): 03,05	QC Batch II	D: WG1029602-	4 QC Sample: L17	726666-05 Clier	nt ID: FILTER	R D-1
Dissolved Organic Carbon	ND	4	4.8	119	-	-	80-120	-	20
General Chemistry - Westborou	gh Lab Asso	ociated sampl	e(s): 01 C	C Batch ID: V	NG1030446-4	QC Sample: L1726	6666-01 Client IE	D: RAW-1	
Fluoride	ND	1	1.0	102	-	-	69-124	-	13
General Chemistry - Westborou	gh Lab Asso	ociated sampl	e(s): 06-07	QC Batch II	D: WG1030455-	4 QC Sample: L1	726666-07 Clier	nt ID: FILTER	R D-1
Chlorine, Total Residual	0.27	0.248	0.40	52	Q -	-	80-120		20

### Lab Duplicate Analysis Batch Quality Control

**Project Name:** MAHER WELL PILOT

**Project Number:** 20107

L1726666 08/23/17 Report Date:

Lab Number:

Parameter	Nati	ve Sample	Duplicate Sampl	e Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab As	ssociated sample(s):	01-05 QC Bato	h ID: WG1028243-2	QC Sample:	L1726666-05	Client ID:	FILTER D-1
рН (Н)		6.9	6.9	SU	0		5
General Chemistry - Westborough Lab As	ssociated sample(s):	01 QC Batch II	D: WG1028252-2	C Sample: L1	726666-01 Cli	ient ID: RA	\W-1
Odor	N	O ODOR	NO ODOR	TON	NC		
General Chemistry - Westborough Lab As	ssociated sample(s):	01-05 QC Bato	th ID: WG1028253-3	QC Sample:	L1726666-01	Client ID:	RAW-1
Nitrogen, Nitrate		0.25	0.26	mg/l	4		6
General Chemistry - Westborough Lab As	ssociated sample(s):	01-05 QC Bato	h ID: WG1028275-1	QC Sample:	L1726666-01	Client ID:	RAW-1
Carbon Dioxide		130	120	mg/l	8		
General Chemistry - Westborough Lab As	ssociated sample(s):	01-05 QC Bato	th ID: WG1028277-3	QC Sample:	L1726666-01	Client ID:	RAW-1
Alkalinity, Total		15.0	15.1	mg CaCO3/L	_ 1		10
General Chemistry - Westborough Lab As	ssociated sample(s):	01-05 QC Bato	th ID: WG1028287-2	QC Sample:	L1726666-05	Client ID:	FILTER D-1
Color, Apparent		ND	ND	A.P.C.U.	NC		
General Chemistry - Westborough Lab As	ssociated sample(s):	01-05 QC Bato	th ID: WG1028288-1	QC Sample:	L1726666-05	Client ID:	FILTER D-1
Color, True		ND	ND	A.P.C.U.	NC		
General Chemistry - Westborough Lab As	ssociated sample(s):	01-05 QC Bato	th ID: WG1028289-3	QC Sample:	L1726739-01	Client ID:	DUP Sample
Turbidity		1.7	1.6	NTU	6		13
General Chemistry - Westborough Lab As	ssociated sample(s):	01 QC Batch II	D: WG1028299-3 C	C Sample: L1	726521-06 Cli	ient ID: DU	JP Sample
Surfactants, MBAS		0.140	0.160	mg/l	13		32



# Lab Duplicate Analysis Batch Quality Control

**Project Name:** MAHER WELL PILOT

Lab Number:

L1726666

08/23/17 **Project Number:** 20107 Report Date:

Parameter	Nati	lative Sample		uplicate Sam	nple Units	RPD		RPD Limits		
General Chemistry - Westborough Lab	Associated sample(s):	01 QC Bat	tch ID: WG	G1028387-3	QC Sample: I	_1726721-01	Client ID: Dl	JP Sample		
Solids, Total Dissolved		89000		90000	mg/l	1		10		
General Chemistry - Westborough Lab	Associated sample(s):	01 QC Bat	tch ID: WG	G1028503-3	QC Sample: I	_1726666-01	Client ID: RA	\W-1		
Cyanide, Total		ND		ND	mg/l	NC		30		
Anions by Ion Chromatography - Westb 1	orough Lab Associated	d sample(s):	01-05 Q0	C Batch ID: \	WG1029082-4	QC Sample:	L1726666-0	1 Client ID: RAW		
Chloride		22.0		22.0	mg/l	0		18		
Sulfate		10.0		9.69	mg/l	3		20		
General Chemistry - Westborough Lab	Associated sample(s):	01,03,05	QC Batch II	D: WG10294	145-3 QC San	nple: L172660	1-01 Client	D: DUP Sample		
Total Organic Carbon		7.31		7.17	mg/l	2		20		
General Chemistry - Westborough Lab	Associated sample(s):	03,05 QC	Batch ID:	WG1029602	-3 QC Sample	e: L1726666-0	3 Client ID:	FILTER B-1		
Dissolved Organic Carbon		ND		ND	mg/l	NC		20		
General Chemistry - Westborough Lab	Associated sample(s):	01 QC Bat	tch ID: WG	G1030446-3	QC Sample: I	_1726666-01	Client ID: RA	\W-1		
Fluoride		ND		ND	mg/l	NC		13		
General Chemistry - Westborough Lab	Associated sample(s):	06-07 QC	Batch ID:	WG1030455	-3 QC Sample	e: L1726666-0	06 Client ID:	FILTER B-1		
Chlorine, Total Residual		0.56		0.58	mg/l	4		20		
General Chemistry - Westborough Lab	Associated sample(s):	06-07 QC	Batch ID:	WG1030456	-3 QC Sample	e: L1726666-0	7 Client ID:	FILTER D-1		
Chlorine, Residual Free		ND		ND	mg/l	NC				



Lab Number:

Lab Duplicate Analysis
Batch Quality Control

**Project Name:** MAHER WELL PILOT

L1726666

08/23/17 **Project Number:** 20107 Report Date:

Parameter	Native Sam	ple D	ouplicate Sample	Units	RPD	RPD Limits
General Chemistry - Westborough Lab	Associated sample(s): 06-07	QC Batch ID:	WG1030501-2	QC Sample:	L1727578-01	Client ID: DUP Sample
рН	7.4		7.4	SU	0	5



Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 08/23/17

#### Sample Receipt and Container Information

Were project specific reporting limits specified?

YES

**Cooler Information** 

Cooler Custody Seal

A Absent

Container Information			Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	рН	pН	deg C	Pres	Seal	Date/Time	Analysis(*)
L1726666-01A	Vial HCI preserved	Α	NA		4.7	Υ	Absent		524.2(14)
L1726666-01B	Vial HCl preserved	Α	NA		4.7	Υ	Absent		524.2(14)
L1726666-01C	Vial H2SO4 preserved	Α	NA		4.7	Υ	Absent		TOC-5310(28)
L1726666-01D	Vial H2SO4 preserved	Α	NA		4.7	Υ	Absent		TOC-5310(28)
L1726666-01E	Bacteria Cup Na2S2O3 preserved	Α	NA		4.7	Υ	Absent		T-COLI-C(1.25)
L1726666-01F	Bacteria Cup Na2S2O3 preserved	Α	NA		4.7	Υ	Absent		T-COLI-C(1.25)
L1726666-01G	Plastic 250ml NaOH preserved	Α	>12	>12	4.7	Υ	Absent		TCN-4500(14)
L1726666-01H	Plastic 250ml unpreserved/No Headspace	Α	NA		4.7	Υ	Absent		ALK-T-2320(14),CO2(1)
L1726666-01J	Plastic 120ml HNO3 preserved	Α	<2	<2	4.7	Y	Absent		CD-2008T(180),AG-UI(180),CA-UI(180),NI- 2008T(180),ZN-UI(180),BE-2008T(180),K- UI(180),FE-UI(180),HARDU(180),MG- UI(180),AS-2008T(180),HG-U(28),SE- 2008T(180),AL-UI(180),BA-2008T(180),MN- UI(180),NA-UI(180),CR-2008T(180),CU- UI(180),SB-2008T(180),TL-2008T(180)
L1726666-01K	Plastic 250ml unpreserved	Α	7	7	4.7	Υ	Absent		-
L1726666-01L	Plastic 120ml Other preserved (sub-lab)	Α	7	7	4.7	Υ	Absent		SUB-BROMATE(0)
L1726666-01M	Plastic 950ml unpreserved	Α	7	7	4.7	Υ	Absent		F-4500(28),SO4-300(28),CL-300(28),TURB- 180(2),MBAS-5540(2),NO3-353(2),PH- 4500(.01),TDS-2540(7)
L1726666-01N	Amber 1000ml unpreserved	Α	7	7	4.7	Υ	Absent		COLOR-T-2120(2),COLOR-A-2120(2),ODOR- 2150(1)
L1726666-01X	Plastic 250ml HNO3 preserved Filtrates	Α	<2	<2	4.7	Υ	Absent		FE-RI(180),MN-RI(180)
L1726666-02A	Bacteria Cup Na2S2O3 preserved	Α	NA		4.7	Υ	Absent		T-COLI-C(1.25)
L1726666-02B	Bacteria Cup Na2S2O3 preserved	Α	NA		4.7	Υ	Absent		T-COLI-C(1.25)
L1726666-02C	Plastic 120ml HNO3 preserved	Α	<2	<2	4.7	Υ	Absent		CA-UI(180),FE-UI(180),HARDU(180),AL- UI(180),MN-UI(180),CU-UI(180)
L1726666-02D	Plastic 250ml unpreserved/No Headspace	Α	NA		4.7	Υ	Absent		ALK-T-2320(14),CO2(1)



Lab Number: L1726666

Report Date: 08/23/17

Project Name: MAHER WELL PILOT

Project Number: 20107

Container Information			Initial	Final	Temp			Frozen		
Container ID	Container Type	Cooler	рН	pН	deg C	Pres	Seal	Date/Time	Analysis(*)	
L1726666-02E	Plastic 250ml unpreserved	Α	7	7	4.7	Υ	Absent		SO4-300(28),CL-300(28),TURB-180(2),NO3-353(2),PH-4500(.01)	
L1726666-02F	Amber 500ml unpreserved	Α	7	7	4.7	Υ	Absent		COLOR-T-2120(2),COLOR-A-2120(2)	
L1726666-03A	Bacteria Cup Na2S2O3 preserved	Α	NA		4.7	Υ	Absent		T-COLI-C(1.25)	
L1726666-03B	Bacteria Cup Na2S2O3 preserved	Α	NA		4.7	Υ	Absent		T-COLI-C(1.25)	
L1726666-03C	Plastic 120ml HNO3 preserved	Α	<2	<2	4.7	Υ	Absent		CA-UI(180),FE-UI(180),HARDU(180),AL- UI(180),MN-UI(180),CU-UI(180)	
L1726666-03D	Plastic 250ml unpreserved/No Headspace	Α	NA		4.7	Υ	Absent		ALK-T-2320(14),CO2(1)	
L1726666-03E	Plastic 250ml unpreserved	Α	7	7	4.7	Υ	Absent		SO4-300(28),CL-300(28),TURB-180(2),NO3-353(2),PH-4500(.01)	
L1726666-03F	Amber 500ml unpreserved	Α	7	7	4.7	Υ	Absent		COLOR-T-2120(2),COLOR-A-2120(2),DOC-5310(28)	
L1726666-03G	Vial H2SO4 preserved	Α	NA		4.7	Υ	Absent		TOC-5310(28)	
L1726666-03H	Vial H2SO4 preserved	Α	NA		4.7	Υ	Absent		TOC-5310(28)	
L1726666-03J	Vial H2SO4 preserved	Α	N/A	N/A	4.7	Υ	Absent		HOLD-WETCHEM(0)	
L1726666-03K	Vial H2SO4 preserved	Α	N/A	N/A	4.7	Υ	Absent		HOLD-WETCHEM(0)	
L1726666-03L	Plastic 120ml Other preserved (sub-lab)	Α	7	7	4.7	Υ	Absent		SUB-BROMATE(0)	
L1726666-03X	Vial H2SO4 preserved split	Α	NA		4.7	Υ	Absent		DOC-5310(28)	
L1726666-03X1	Vial H2SO4 preserved split	Α	NA		4.7	Υ	Absent		DOC-5310(28)	
L1726666-04A	Bacteria Cup Na2S2O3 preserved	Α	NA		4.7	Υ	Absent		T-COLI-C(1.25)	
L1726666-04B	Bacteria Cup Na2S2O3 preserved	Α	NA		4.7	Υ	Absent		T-COLI-C(1.25)	
L1726666-04C	Plastic 120ml HNO3 preserved	Α	<2	<2	4.7	Υ	Absent		CA-UI(180),FE-UI(180),HARDU(180),AL- UI(180),MN-UI(180),CU-UI(180)	
L1726666-04D	Plastic 250ml unpreserved/No Headspace	Α	NA		4.7	Υ	Absent		ALK-T-2320(14),CO2(1)	
L1726666-04E	Plastic 250ml unpreserved	Α	7	7	4.7	Υ	Absent		SO4-300(28),CL-300(28),TURB-180(2),NO3-353(2),PH-4500(.01)	
L1726666-04F	Amber 500ml unpreserved	Α	7	7	4.7	Υ	Absent		COLOR-T-2120(2),COLOR-A-2120(2)	
L1726666-05A	Bacteria Cup Na2S2O3 preserved	Α	NA		4.7	Υ	Absent		T-COLI-C(1.25)	
L1726666-05B	Bacteria Cup Na2S2O3 preserved	Α	NA		4.7	Υ	Absent		T-COLI-C(1.25)	
L1726666-05C	Plastic 120ml HNO3 preserved	Α	<2	<2	4.7	Υ	Absent		CA-UI(180),FE-UI(180),HARDU(180),AL- UI(180),MN-UI(180),CU-UI(180)	
L1726666-05D	Plastic 250ml unpreserved/No Headspace	Α	NA		4.7	Υ	Absent		ALK-T-2320(14),CO2(1)	
L1726666-05E	Plastic 250ml unpreserved	Α	7	7	4.7	Υ	Absent		SO4-300(28),CL-300(28),TURB-180(2),NO3-353(2),PH-4500(.01)	



Serial\_No:08231715:28

Lab Number: L1726666

Report Date: 08/23/17

Project Name: MAHER WELL PILOT

Project Number: 20107

Container Inf	ormation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	рН	рН	deg C	Pres	Seal	Date/Time	Analysis(*)
L1726666-05F	Amber 500ml unpreserved	Α	7	7	4.7	Υ	Absent		COLOR-T-2120(2),COLOR-A-2120(2),DOC-5310(28)
L1726666-05G	Vial H2SO4 preserved	Α	NA		4.7	Υ	Absent		TOC-5310(28)
L1726666-05H	Vial H2SO4 preserved	Α	NA		4.7	Υ	Absent		TOC-5310(28)
L1726666-05J	Vial H2SO4 preserved	Α	N/A	N/A	4.7	Υ	Absent		HOLD-WETCHEM(0)
L1726666-05K	Vial H2SO4 preserved	Α	N/A	N/A	4.7	Υ	Absent		HOLD-WETCHEM(0)
L1726666-05L	Plastic 120ml Other preserved (sub-lab)	Α	7	7	4.7	Υ	Absent		SUB-BROMATE(0)
L1726666-05X	Vial H2SO4 preserved split	Α	NA		4.7	Υ	Absent		DOC-5310(28)
L1726666-05X1	Vial H2SO4 preserved split	Α	NA		4.7	Υ	Absent		DOC-5310(28)
L1726666-06A	Amber 1000ml unpreserved	Α	7	7	4.7	Υ	Absent		SDS(1)
L1726666-06B	Amber 1000ml unpreserved	Α	7	7	4.7	Υ	Absent		SDS(1)
L1726666-07A	Amber 1000ml unpreserved	Α	7	7	4.7	Υ	Absent		SDS(1)
L1726666-07B	Amber 1000ml unpreserved	Α	7	7	4.7	Υ	Absent		SDS(1)
L1726666-08X	Vial NH4Cl preserved split	Α	N/A	N/A	4.7	Υ	Absent		SUB-HAA(9)
L1726666-08X1	Vial NH4Cl preserved split	Α	N/A	N/A	4.7	Υ	Absent		SUB-HAA(9)
L1726666-08Y	Vial Ascorbic Acid/HCl preserved	Α	NA		4.7	Υ	Absent		524-THM(14)
L1726666-08Y1	Vial Ascorbic Acid/HCl preserved	Α	NA		4.7	Υ	Absent		524-THM(14)
L1726666-09X	Vial NH4Cl preserved split	Α	N/A	N/A	4.7	Υ	Absent		SUB-HAA(9)
L1726666-09X1	Vial NH4Cl preserved split	Α	N/A	N/A	4.7	Υ	Absent		SUB-HAA(9)
L1726666-09Y	Vial Ascorbic Acid/HCl preserved	Α	NA		4.7	Υ	Absent		524-THM(14)
L1726666-09Y1	Vial Ascorbic Acid/HCl preserved	Α	NA		4.7	Υ	Absent		524-THM(14)



Project Name: MAHER WELL PILOT Lab Number: L1726666

Project Number: 20107 Report Date: 08/23/17

### **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

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**

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

### Terms

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.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

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.

### 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

Report Format: Data Usability Report



Project Name:MAHER WELL PILOTLab Number:L1726666Project Number:20107Report Date:08/23/17

### **Data Qualifiers**

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

- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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: MAHER WELL PILOT Lab Number: L1726666

Project Number: 20107 Report Date: 08/23/17

### REFERENCES

Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.

- 8 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. 19th Edition. 1995.
- Methods for the Determination of Organic Compounds in Drinking Water Supplement II. EPA/600/R-92/129, August 1992.
- 19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.
- 30 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.
- Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.
- 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.



Serial\_No:08231715:28

Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:17873 Revision 10

Published Date: 1/16/2017 11:00:05 AM

Page 1 of 1

### 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-Colilert-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 II, 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-Colilert-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.

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.

Document Type: Form

ALPHA MA	ANSFIELD	CHAIN (	OF CL	ISTOD	Υ	PAGE	OF_2	Da	ate Red	d in l	Lab:	8/3	2/1	7		A	LPH	A Job#: L17260	366
WESTBORO, MA TEL: 508-898-9220	MANSFIELD, MA TEL: 508-822-9300		Project	Informat	ion	٠	o	R	eport	Infor	matio	ı - Da	ta Del	iverat	oles	STATE OF THE PARTY OF		g Information	
FAX: 508-898-9193	FAX: 508-822-3288		Project N	lame: 🖊	aher	Well	Pilot	1 8	FAX			EMAIL			1000		Same	e as Client info PO#:	
Client Informatio	n		Project L	ocation:	3gmst	abi, M	VA		<b>LA</b> DEX				Delivera						
Client: Blue	ent Inc		Project #		0107						equire	ments	SIE		nits				
Address: 57 D		1 Rd	Project M	lanager: [		Satter		Sta	te /Fed	Prog	ram			Criteria					
Charlton,			ALPHA (			97,5 (10)													
Phone: (508)	248-7094	_	Turn-A	round Tin	ne						100	6 2 1						\$	
Fax:										لأما		_						, 3	
Email: egrot	towablul.	A back	Standa	ırd 🗆	RUSH (only	confirmed if pre-a	pproved!)		1	13	/-3	7	7 /			7	10	3/ =/ /	T
☐ These samples hav	e been previously ana	alyzed by Alpha	Date Du	e:		Time:			3/8	3	# 19	/ /	/ /		/	/ ,	MO3 lemp	SAMPLE HANDL	ING T A L
Other Project Sp			nents/De	tection Li	mits:			1	وره ر	18 ×	S S	/	/_	//	/ /	/	m	Filtration	-
PLEASE NOTE								3	12 3	[p]	. ) /		100	/ /	/,		2/2 2/2	Done Not needed	#
MS/MSD (at unit		nitted unless	you che	eck here:				1	SS.	0 1	3/	15	Cliffy	ון / וֹד	128	8	P. J.	/ ☐ Lab to do Preservation	В О Т
ALPHA Lab ID				Colle	ection	Sample	Sampler's	- 12	Des. 1804, 18-35	My The	3/	J. Kallmit	E/5		1000 F	The Color		Lab to do (Please specify below)	T
(Lab Use Only)	Sa	ample ID		Date	Time	Matrix	Initials	12	000	12	1-/-	$\overline{\mathcal{E}}/\mathcal{E}$		1 2/	G 60	E LE		Sample Specific Comme	nts S
26666-01	Ran.	-		8/2/17	900	DW	ARD	1	١	1	1 1	2	2	2 1					13
02	Filter	A=1									1	2			1	l	1		6
03	Filter	B1									1	2	2		1	1	1		13
04	Filter	01									١	2			1	1	ı		6
05	Filter	D.I		1			1				1	2	2		1	1	1		13
											-				+ 1	<u> </u>			13
											-			-	-				
	-					-					+				-	-			
										-	-		-		+	-			
	( - 100 × )								1	+	- -	-			-				-
						Conta	iner Type	P										Please print clearly, legibly	
			$\bigcirc$	to the second		Pre	servative											pletely. Samples can not be in and turnaround time clock	
			Relinquis	hed By:	200	Date	e/Time			Rece	eived By	/:			Date			start until any ambiguities a	re resolved.
		The same				8/2/7	7 14:0	3	C	10	u.	Ver	_	81	4/1	14	1:02	Alpha's Terms and Condition	
FORM NO: 101-09 (rev. 27-St Page 51 of 64	EP-10)																	See reverse side.	

		R	2
SUB	UPS:	Eurofins,	Indiana

CHAIN OF CUSTODY PAGE 1 OF 1 Project Information							e Rec'd i	n Lab:						AL	PHA	Job i	#:L17	26666	
ALPH	VIICAL	Project Infor	mation				port In	ıform	natior	n Dat	a Del	ivera	bles	Bil	ling l	nforr	natio	n	
Westborough, MA	Mansfield, MA	Dunie et Newser					FAX				EMAIL				Same	as Clie	ent info	PO #:	
TEL: 508-898-9220 FAX: 508-898-9193	TEL: 508-822-9300 FAX: 508-822-3288	Project Name:					ADEx				Add'l D	elivera	bles						
Client Informat		Project Location	n: MA				gulato			emen	ts/Re	port	Limit	1					
Client: Alpha Anal		Project #:				Stat	e/Fed Pr	rogram	1					Crit	eria				
Address: 8 Walku	990		- Kanın B	Povmond		MC	P PRE	SUN	/PTIV	Æ CE	RTAI	NTY-	CT R	EAS	DNAB	LE C	ONF	IDENCE PROTOC	OLS
		Project Manage		kaymonu	in the second				⊠ No						nods Re				
Westborough, Ma		ALPHA Quote #		-			Yes ALYSI		⊠ No	100	Are	CTRO	CP (Rea	asonab	le Conf	idence	Protoc	cols) Required?	Т
Phone: 508-898-9	1220	Turn-Around				AN	ALTSI	3		1		Τ		1	1	Т	T	SAMPLE HANDLING	T O T A L
Fax:	Oclobalah sam	Standard		KUSN (ONLY IF	PRE-APPROVED)													Filtration  ☐ Done	L
Email: subreports		— Due Date:	Time:															☐ Not Needed	#
	e been Previously analyzed by Alpha Decific Requirements/Commer												☐ Lab to do  Preservation	BOTTLES					
	Alpha Job # <b>L1726666</b> on this re						1							i	☐ Lab to do	Ţ			
, 10000 1010101100		F																(Please specify below)	E
ALPHA Lab ID	Sample ID	Coll	ection	Sample	Sampler's	ATE													
(Lab Use Only)	Sample 15	Date	Time	Matrix	Initials	BROMATE					ļ							Sample Specific	
	1		ļ.	I T	<u> </u>	<u> </u>				ļ								Comments	
	RAW-1	08/02/17	09:00	DW		X													1
	FILTER B-1	08/02/17	09:00	DW		X								1		_			1
	FILTER D-1	08/02/17	09:00	DW		X													1
	,															_			
													_			<u> </u>			
PLEASE ANSWER	QUESTIONS ABOVE!			C	ontainer Type	Р		-	*1	-	-	-	-	-	-	-	-	Please print clearly, legi	illa la c
					Preservative	EDA			-	-	-	-	-		-	-	-	and completely. Sample not be logged in and	
S YOUR PROJECT			Relin	Relinquished By:		Date/Time		Received By:		Date/Time		ime	turnaround time clock w start until any ambiguitie						
	or CT RCP?																resolved. All samples submitted are subject to	D	
FORM NO: 01-01(I) (rev. 30-JUL-07)			10	***											-		-	Alpha's Payment Terms	4.
Page 53 of 64													<u></u>						

	CHAIN OF	CUSTO	DDY	PAGE 1 OI	= 1	D	ate Rec	d in L	ab:		× .	71		A	I DH	1 loh	#. 1 4	726666	40
ΔLP <sub>ANA</sub>	LYTICAL	Project Info	ormation			R	eport	Info	rmatic	on D	ata D	elive	rables						
Westborough, MA	Mansfield, MA						FAX		an-uc		] EMA	_	amies				matio ient info		
TEL: 508-898-9220 FAX: 508-898-9193	TEL: 508-822-9300 FAX: 508-822-3288	Project Name	<b>):</b>			[	] ADEx	x			] Add'	l Delive	rables	F				1.0 %.	
Client Informa	THE PROPERTY OF THE PARTY OF TH	Project Least	ion: MA			R	egula	tory	Requi	reme	ents/F	Repo	t Lim	its					19 6 7/2
Client: Alpha Ana		Project Locat	ion: IVIA				ate/Fed								riteria				
Address: 8 Walku		Project #:				- M	CD DE	DEGI	IMPE	VE 6	FOT	AINITE		Y 100					
Westborough, Ma		Project Mana		eighton			Yes	NE SU	□ N	VE C	A	re MCF	Analyt	KEAS	thods I	BLE (	CONF	DENCE PROTO	COLS
Phone: 508-898-9		Turn-Aroun					Yes		□ N									ols) Required?	
Fax:			The second second				VALYS	SIS											T
Email: subreports	@alphalah.com	🛛 Standard		Rush (ONLY IF F	RE-APPROVED	),												SAMPLE HANDLING Filtration	TAL
	re been Previously analyzed by Alpha	— Due Date:	Time															☐ Done	
	pecific Requirements/Commer			•					ľ									☐ Not Needed☐ Lab to do	#
Please reference	Alpha Job #L1726666 on this rep	ort.	iilo.						1									Preservation	o T
																		☐ Lab to do (Please specify	BOTTLES
																		below)	E S
ALPHA Lab ID	Sample ID	Col	lection	Sample	Committee	-													-
(Lab Use Only)		Date	Time	Matrix	Sampler's Initials														
		· · · · · · · · · · · · · · · · · · ·	1	1	1	HAA												Sample Specific Comments	
	FILTER B-1 (DAY 7)	8/2/17	09:00	DW		х						1	+		+	+-	+		2
	FILTER D-1 (DAY 7)	8/2/17	09:00	DW		X			1	$\vdash$			+-	1	+	-	+-	<del> </del>	2
									1		-			-	+-	+-	-		1 2
						1			+		+		+		-	-	+		
											-	-	-	-			+		
						-			-		-	-	+-	-	-				
									-		-	-	-		-	-			
						-					-	-	-						
													_						
LEASE ANSWER	QUESTIONS ABOVE!																		
	ZOCOTIONO ABOVE!				tainer Type	V	-	•	-	•	-	-	-	-	-	-			
SYOUR	PROJECT		Dalie		reservative	J		-	-	-	-	•	-	-	-	-	-	Please print clearly, legil and completely Sample	oly as can
	or CT RCP?		Relinquished By:			Date/Time Received By:							ate/Tim	ne	not be logged in and turnaround time clock wi start until any ambiguitie	li not			
ORM NO: 01-01(I) er 30-Jul-07)	0. 01 1(0)								-									resolved. All samples submitted are subject to	
Page 54 of 64	1																-	Alpha's Payment Terms	

SUB COURIER: Granite State, NH

	CHAIN OF	CUSTO	DY	PAGE 1	OF 1	Dat	e Rec'd	in Lat	)					AL	PHA.	Job #	: L17	26666	
VI SH	YTICAL	Project Info	rmation				And in section .	Infor	natio	n Dat	-	A STATE OF THE PARTY OF THE PAR	bles				nation		
Westborough, MA	Mansfield, MA						FAX				EMAIL				Same	as Clie	nt info	PO #:	
TEL: 508-898-9220	TEL: 508-822-9300	Project Name:	:				ADEx				Add'l D	Delivera	bles						
FAX: 508-898-9193	FAX: 508-822-3288	Davis et Lassette				Re	gulat	ory R	Requi	remen	ts/Re	port	Limit						
Client Informat		Project Location	on: IVIA	,		Sta	te/Fed I	Progra	m					Crit	eria				
Client: Alpha Anal		Project #:				Me	P PR	ESIII	MPTI	VE CE	RTA	NTY	CT R	EASO	DNAE	ILE (0	ONEI	DENCE PROTOCO	OI S
Address: 8 Walku	p Drive	Project Manag	**************************************	eighton			-		□ No	-	-				nods Re	-		SENGET NOTOG	<u> </u>
Westborough, Ma	01581	ALPHA Quote	#:				Yes		☐ No		Are	ÇT RO	CP (Rea	asonab	le Conf	idence	Protoco	ls) Required?	
Phone: 508-898-9	220	Turn-Around	d Time			AN	ALYS	SIS											T O T A L
Fax:		_ 🛛 Standard		Rush (ONLY)	F PRE-APPROVED)													SAMPLE HANDLING Filtration	A
Email: subreports	@alphalab.com	_																☐ Done	#
These samples have	e been Previously analyzed by Alpha	Due Date:	Time:	:														☐ Not Needed☐ Lab to do	
Other Project Sp	pecific Requirements/Comment		1												Preservation ☐ Lab to do	O T			
Please reference	Alpha Job #L1726666 on this repor	t.																(Please specify	BOTTLES
																		below)	8
																			_
ALPHA Lab ID	Sample ID	Coll	lection	Sample	Sampler's														
(Lab Use Only)		Date	Time	Matrix	Initials	¥												Sample Specific Comments	
	Y							-	+		<u> </u>	-		1	+-	-	+-	Comments	
	FILTER B-1 (DAY 7)	8/2/17	09:00	DW		X								-		-			2
	FILTER D-1 (DAY 7)	8/2/17	09:00	DW		х													2
									1										
			1				<u> </u>												
									1				1	+		-			1
							-	-	-					-	+	-	+		
	1		-	-		ļ		-	-				-	-		-	-		-
	1		<u> </u>				(5.						-						
LEASE ANSWER	QUESTIONS ABOVE!				Container Type	V	•	•	ļ.	-	-	ļ :	-		-		-	Please print clearly legit	blv
0 40115	220122				Preservative	J		ļ	ļ.	-				<u> </u>	-	-	1.	and completely. Sample not be logged in and	es can
S YOUR PROJECT Relinquished By:					1	8/10/	ate/Tim	e	-	-11	Recei	ved By	:		8/12	Date/Ti	me COS	turnaround finie clock will start until any ambiguities	not s are
VIA MCP or CT RCP?					01101		465	1	Mala	Jahr 1	-/	1		21/1	(1)	314VV	resolved All samples submitted are subject to		
ORM NO: 01-01(I) Page 55 of 6	A	1 otherdeles					1/	190)		_			<i>V</i>		10/1	JIC.	711-43	Alpha's Payment Terms  4 4	
1 age 33 01 0	Т																13		



# LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at  $(800)\ 332-4345$  or  $(574)\ 233-4777$ .

This report may not be reproduced, except in full, without written approval from EEA.

Page 56 of 64 Page 1 of 7



## **STATE CERTIFICATION LIST**

State	Certification	State	Certification
Alabama	40700	Montana	CERT0026
Alaska	IN00035	Nebraska	NE-OS-05-04
Arizona	AZ0432	Nevada	IN00035
Arkansas	IN00035	New Hampshire*	2124
California	2920	New Jersey*	IN598
Colorado	IN035	New Mexico	IN00035
Colorado Radiochemistry	IN035	New York*	11398
Connecticut	PH-0132	North Carolina	18700
Delaware	IN035	North Dakota	R-035
Florida*	E87775	Ohio	87775
Georgia	929	Oklahoma	D9508
Hawaii	IN035	Oregon (Primary AB)*	4074-001
Idaho	IN00035	Pennsylvania*	68-00466
Illinois*	200001	Puerto Rico	IN00035
Illinois Microbiology	17767	Rhode Island	LAO00343
Indiana Chemistry	C-71-01	South Carolina	95005
Indiana Microbiology	M-76-07	South Dakota	IN00035
Iowa	098	Tennessee	TN02973
Kansas*	E-10233	Texas*	T104704187-15-8
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA170006	Utah*	IN00035
Maine	IN00035	Vermont	VT-8775
Maryland	209	Virginia*	460275
Massachusetts	M-IN035	Washington	C837
Michigan	9926	West Virginia	9927 C
Minnesota*	018-999-338	Wisconsin	999766900
Mississippi	IN035	Wyoming	IN035
Missouri	880	A District Date	

<sup>\*</sup>NELAP/TNI Recognized Accreditation Bodies

Revision date: 05/15/2017

Page 57 of 64 Page 2 of 7



### LABORATORY CASE NARRATIVE

Client: Alpha Analytical Report #: 394723CN

All method QC was within acceptance limits.

Note: This report was amended on 08/23/17 to report results on EEA generic report format, at the request of the client.

Note: This report may not be reproduced, except in full, without written approval from EEA.

Jun Van Kuit ASM 08/23/2017

Authorized Signature Title Date

Page 1 of 1

Page 58 of 64 Page 3 of 7



110 South Hill Street South Bend, IN 46617 Tel: (574) 233-4777 Fax: (574) 233-8207 1 800 332 4345

# Laboratory Report

Client: Alpha Analytica Report: 394723

Attn: Karyn Raymond Priority: Standard Written

Eight Walkup Drive Status: Final

Westborough, MA 01581 PWS ID: Not Supplied

	Sample Information										
EEA ID#	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time						
3748604	L1726666-Raw-1	317.0	08/02/17 09:00	Client	08/04/17 09:45						
3748605	L1726666-Filter B-1	317.0	08/02/17 09:00	Client	08/04/17 09:45						
3748606	L1726666-Filter D-1	317.0	08/02/17 09:00	Client	08/04/17 09:45						

**Report Summary** 

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call James Van Fleit at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from EEA.

Jun Van Kint ASM

08/23/2017

Authorized Signature Title Date

Client Name: Alpha Analytica

Report #: 394723

Page 1 of 3

Page 59 of 64 Page 4 of 7

Serial\_No:08231715:28

Client Name: Alpha Analytica Report #: 394723

Sampling Point: L1726666-Raw-1 PWS ID: Not Supplied

			Gene	ral Chemi	stry				
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID#
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L		08/08/17 09:15	3748604

Sampling Point: L1726666-Filter B-1 PWS ID: Not Supplied

			Gene	ral Chemi	General Chemistry											
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID#							
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L		08/08/17 10:05	3748605							

Sampling Point: L1726666-Filter D-1 PWS ID: Not Supplied

			Gene	ral Chemi	stry				
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID#
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L		08/08/17 11:20	3748606

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	۸	!

Client Name: Alpha Analytica Report #: 394723

### **Lab Definitions**

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

**Internal Standards (IS)** - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

**Laboratory Duplicate (LD)** - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

**Laboratory Method Blank (LMB)** / **Laboratory Reagent Blank (LRB)** - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

age	Series, mulana											こってるつ
62 6	CHAIN OF CUSTODY	CUS	TODY	PAGE 1 OF	-	Date Rec'd in Lab:	n Lab:			ALPHA	ALPHA Job #:L1726666	26666
P 64	CAL	Project	Project Information			Report In	formatio	Report Information Data Deliverables	liverables	Billing I	Billing Information	-
Westborough, MA TEL: 508-898-9220	Mansfield, MA TEL: 508-822-9300	Project Name:	lame:			- ADEx		- EMAIL	☐ EMAIL Add'l Deliverables	Same	Same as Client info	4723
	W. 300-922-3288	Project	Droiton I continue MA			Regulator	ry Requir	rements/R	Regulatory Requirements/Report Limits	S		
ont. Alpha Apaly	de Heei	rioject L	ocalion. MA			State/Fed Program	rogram			Criteria		
Cilent. Alpria Arialytical Lab Address: 8 Walkup Drive	Ical Lab Drive	Project #:				MCP PRE	SUMPTIN	VE CERTA	INTY-CT RE	EASONAB	LECONE	MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS
		Al Dafoi L	riojectivianager. Naryn Naymond	Raymond		□ Yes	N <sub>0</sub>	Are	Are MCP Analytical Methods Required?	al Methods Re	quired?	
Westborough, Ma 01581	1581	ALPHA Quote #:	Suote #:			□ Yes	oN ⊠		Are CT RCP (Reasonable Confidence Protocols) Required?	sonable Confi	dence Protoc	ols) Required?
Phone: 508-898-9220	50	Turn-Ar	Turn-Around Time			ANALYSIS	S		,			
Fax:		Standard     Standard		Rush (ONLY IF PRE-APPROVED)	RE-APPROVED							SAMPLE HANDLING
Email: subreports@alphalab.com	alphalab.com											Filtration
These samples have t	These samples have been Previously analyzed by Alpha	Due Date:	: Time:									seded
er Project Spe	Other Project Specific Requirements/Comments/Detection Limits:	s/Detection					-			_		Preservation
ase reference Al	Please reference Alpha Job # L1726666 on this report.	ort.	Kill				3					☐ Lab to do ☐ ☐ [Please specify ☐ E below] S
ALPHA Lab ID	Ol elume &		noitrello	Same	0	ЭТА						
(Lab Use Only)			Date	Matrix	Initials	MOAs						Sample Specific
	RAW-1 3748604		08/02/17 09:00	DW		H ×						Comments
	FILTER B-1	100		DW		×						-   7
	FILTER D-1			DW		×						-
			+									
								- The same of the		Seria		
										I_N		
										o:082		
SE ANSWER Q	EASE ANSWER QUESTIONS ABOVE!			Con	Container Type	۵	-	1.	1	3 71		
F		Į			Preservative	EDA .				5:28		Please print clearly, legibly and completely. Samples ca
MOUR MOP	S WOUR PROJECT		Re Re	Relinquished By:	Q	Date/Time		Receiv	Received By:		Date/Time	turnaround time clock will not startunti any ambiguities are desolved. All samples
						0.00	1	N N				submitted are subject to



# **GRANITE STATE ANALYTICAL SERVICES, LLC**

22 Manchester Road, Unit 2, Derry, NH 03038

Phone (800) 699-9920 (603) 432-3044 Fax (603) 434-4837

http://www.granitestateanalytical.com/

CERTIFICATE OF ANALYSIS FOR DRINKING WATER

**DATE PRINTED:** 08/21/2017

**CLIENT NAME:** Alpha Analytical **CLIENT ADDRESS:** 8 Walkup Dr.

Westborough, MA 01581

SAMPLE ID#: 1708-01534-001

SAMPLED BY: Client-Customer

**SAMPLE ADDRESS:** L1726666

Filter B-1 (Day 7)

MA

DATE AND TIME COLLECTED:

RECEIPT TEMPERATURE:

08/02/2017

9:00AM

DATE AND TIME RECEIVED: 08/10/2017

Passes

Attention

Fails EPA Primary

Fails EPA Secondary

Fails State Guideline

HAA GSA

2:05PM

ANALYSIS PACKAGE:

ON ICE 4.4° CELSIUS

Legend

**CLIENT JOB #** LOCATION:

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
Date Extracted	-					No Limit	EPA 552.2	ND-NH 0	8/15/17 9:30AM
Dibromoacetic Acid*	1.3	ug/L			1	No Limit	EPA 552.2	BM-NH 0	8/17/17 1:58AM
Dichloroacetic Acid*	<1	ug/L			1	No Limit	EPA 552.2	BM-NH 0	8/17/17 1:58AM
Monobromoacetic Acid*	<1	ug/L			1	No Limit	EPA 552.2	BM-NH 0	8/17/17 1:58AM
Monochloroacetic Acid*	<2	ug/L			2	No Limit	EPA 552.2	BM-NH 0	8/17/17 1:58AM
Total Haloacetic Acids*	1.3	ug/L	1		1	60 ug/L	EPA 552.2	BM-NH 0	8/17/17 1:58AM
Trichloroacetic Acid*	<1	ug/L			1	No Limit	EPA 552.2	BM-NH 0	8/17/17 1:58AM
2,3-Dibromopropionic Acid	100	%				No Limit	EPA 552.2 - SS	BM-NH 0	8/17/17 1:58AM

The results presented in this report relate to the samples listed above in the condition in which they were received. RL: "Reporting limit" means the lowest level of an analyte that can be accurately recovered from the matrix of interest.

Data Qualifier (DQ) Flags: None

\* MA Certified Analysis

Donall A. D Donald A. D'Anjou, Ph. D. **Laboratory Director** 



# **GRANITE STATE ANALYTICAL SERVICES, LLC**

22 Manchester Road, Unit 2, Derry, NH 03038

Phone (800) 699-9920 (603) 432-3044 Fax (603) 434-4837

http://www.granitestateanalytical.com/

CERTIFICATE OF ANALYSIS FOR DRINKING WATER

**DATE PRINTED:** 08/21/2017

**CLIENT NAME:** Alpha Analytical **CLIENT ADDRESS:** 8 Walkup Dr.

Westborough, MA 01581

SAMPLE ID#: 1708-01534-002

SAMPLED BY: Client-Customer

**SAMPLE ADDRESS:** L1726666

Filter D-1 (Day 7)

MA

DATE AND TIME COLLECTED:

08/02/2017

9:00AM

DATE AND TIME RECEIVED:

Passes

Attention

Fails EPA Primary

Fails EPA Secondary

Fails State Guideline

08/10/2017

Legend

2:05PM

ANALYSIS PACKAGE: HAA GSA RECEIPT TEMPERATURE:

ON ICE 4.4° CELSIUS

LOCATION: **CLIENT JOB #** 

Test Description	Results	Test Units	Pass /Fail	DQ Flag	RL	Limit	Method	Analyst	Date-Time Analyzed
Date Extracted	-					No Limit	EPA 552.2	ND-NH 0	8/15/17 9:30AM
Dibromoacetic Acid*	1.3	ug/L			1	No Limit	EPA 552.2	BM-NH 0	8/17/17 2:38AM
Dichloroacetic Acid*	<1	ug/L			1	No Limit	EPA 552.2	BM-NH 0	8/17/17 2:38AM
Monobromoacetic Acid*	<1	ug/L			1	No Limit	EPA 552.2	BM-NH 0	8/17/17 2:38AM
Monochloroacetic Acid*	<2	ug/L			2	No Limit	EPA 552.2	BM-NH 0	8/17/17 2:38AM
Total Haloacetic Acids*	1.3	ug/L	1		1	60 ug/L	EPA 552.2	BM-NH 0	8/17/17 2:38AM
Trichloroacetic Acid*	<1	ug/L			1	No Limit	EPA 552.2	BM-NH 0	8/17/17 2:38AM
2,3-Dibromopropionic Acid	103	%				No Limit	EPA 552.2 - SS	BM-NH 0	8/17/17 2:38AM

The results presented in this report relate to the samples listed above in the condition in which they were received. RL: "Reporting limit" means the lowest level of an analyte that can be accurately recovered from the matrix of interest.

Data Qualifier (DQ) Flags: None

\* MA Certified Analysis

Donald A. D Donald A. D'Anjou, Ph. D. **Laboratory Director** 



### ANALYTICAL REPORT

Lab Number: L1726977

Client: Blueleaf Incorporated

57 Dresser Hill Road Charlton, MA 01507

ATTN: Erik Grotton
Phone: (508) 248-7094

Project Name: BARNSTABLE, MA

Project Number: Not Specified Report Date: 08/21/17

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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



Project Name: BARNSTABLE, MA

Project Number: Not Specified

**Lab Number:** L1726977 **Report Date:** 08/21/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1726977-01	RAW 3	DW	BARNSTABLE, MA	08/03/17 10:00	08/03/17
L1726977-02	FILTER A3	DW	BARNSTABLE, MA	08/03/17 10:00	08/03/17
L1726977-03	FILTER C3	DW	BARNSTABLE, MA	08/03/17 10:00	08/03/17
L1726977-04	FILTER E3	DW	BARNSTABLE, MA	08/03/17 10:00	08/03/17
L1726977-05	FILTER F3	DW	BARNSTABLE, MA	08/03/17 10:00	08/03/17
L1726977-06	UV 3	DW	BARNSTABLE, MA	08/03/17 10:00	08/03/17
L1726977-07	FIELD BLANK	WATER	BARNSTABLE, MA	08/03/17 10:00	08/03/17

Project Name:BARNSTABLE, MALab Number:L1726977Project Number:Not SpecifiedReport Date:08/21/17

### **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 guestions.



Project Name:BARNSTABLE, MALab Number:L1726977Project Number:Not SpecifiedReport Date:08/21/17

### **Case Narrative (continued)**

### Sample Receipt

The samples were received at the laboratory above the required temperature range. The samples were transported to the laboratory in a cooler with [ice] and delivered directly from the sampling site.

### Perfluorinated Alkyl Acids

L1726977-05, -06, and -07: The surrogate recovery was outside the individual acceptance criteria for perfluoro-n-[1,2-13c2]decanoic acid (13c-pfda); however, re-analysis achieved similar results: 133%, 153%, and 142%, respectively. The results of the re-analysis are reported; however, all associated compounds are considered to have a potential bias.

The WG1031619-3 LCSD recovery, associated with L1726977-01, -04, -05, and -06, was outside the individual acceptance criteria for perfluorooctanoic acid (pfoa); however, re-analysis achieved a similar result: 133%. The results of the re-analysis are reported; however, all associated compounds are considered to have a potential bias.

The WG1031620-3 LCSD recovery, associated with L1726977-07, was outside the individual acceptance criteria for perfluorooctanoic acid (pfoa); however, re-analysis achieved a similar result: 133%. The results of the re-analysis are reported; however, all associated compounds are considered to have a potential bias.

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:

Title: Technical Director/Representative Date: 08/21/17

600, Skulow Kelly Stenstrom

# **ORGANICS**



# **SEMIVOLATILES**



Project Name: BARNSTABLE, MA Lab Number: L1726977

Project Number: Not Specified Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: Date Collected: 08/03/17 10:00

Client ID: RAW 3 Date Received: 08/03/17
Sample Location: BARNSTABLE MA Field Pren: Not Specified

Sample Location: BARNSTABLE, MA Field Prep: Not Specified Extraction Method:EPA 522

Matrix: Dw Extraction Method: Extraction Date: 08/10/17 06:00
Analytical Method: 120,522

Analyst: TJ

08/10/17 20:44

Analytical Date:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lal	b					
1,4-Dioxane	0.628		ug/l	0.160		1
Surrogate			% Recovery	Qualifier		eptance riteria
1.4-Dioxane-d8			85			70-130



Project Name: BARNSTABLE, MA Lab Number: L1726977

Project Number: Not Specified Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1726977-01 Date Collected: 08/03/17 10:00

Client ID: RAW 3 Date Received: 08/03/17

Sample Location: BARNSTABLE, MA Field Prep: Not Specified Extraction Method:EPA 537

Matrix: Dw Extraction Date: 08/14/17 08:00

Analytical Method: 122,537
Analytical Date: 08/18/17 23:33

Analyst: AR

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537	- Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	16.9		ng/l	1.78		1	
Perfluorooctanesulfonic Acid (PFOS)	80.2		ng/l	1.78		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	117		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	115		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	85		70-130	



Project Name: BARNSTABLE, MA Lab Number: L1726977

Project Number: Not Specified Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: Date Collected: 08/03/17 10:00

Client ID: FILTER E3 Date Received: 08/03/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method: EPA 522

Matrix: Dw Extraction Date: 08/10/17 06:00 Analytical Method: 120,522

Analytical Date: 08/10/17 21:27

Qualifier RL MDL **Dilution Factor Parameter** Result Units 1,4 Dioxane by EPA 522 - Mansfield Lab 0.299 0.160 1 1,4-Dioxane ug/l Acceptance Criteria Surrogate % Recovery Qualifier 1,4-Dioxane-d8 97 70-130



Analyst:

TJ

Project Name: BARNSTABLE, MA Lab Number: L1726977

Project Number: Not Specified Report Date: 08/21/17

**SAMPLE RESULTS** 

Lab ID: Date Collected: 08/03/17 10:00

Client ID: FILTER E3 Date Received: 08/03/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method: EPA 537

Matrix: Dw Extraction Date: 08/14/17 08:00 Analytical Method: 122,537

Analyst: AR

08/18/17 23:42

Analytical Date:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mans	field Lab					
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.78		1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.78		1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	121		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	125		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	97		70-130	



Project Name: BARNSTABLE, MA Lab Number: L1726977

Project Number: Not Specified Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1726977-05 Date Collected: 08/03/17 10:00

Client ID: FILTER F3 Date Received: 08/03/17

Sample Location: BARNSTABLE, MA Field Prep: Not Specified Extraction Method:EPA 522

Matrix: Dw Extraction Date: 08/10/17 06:00
Analytical Method: 120,522

Analytical Date: 08/10/17 22:10
Analyst: TJ

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfi	eld Lab					
1,4-Dioxane	0.279		ug/l	0.163		1
Surrogate			% Recovery	Qualifier		eptance riteria
1,4-Dioxane-d8			94			70-130



08/03/17

Date Received:

Project Name: BARNSTABLE, MA Lab Number: L1726977

Project Number: Not Specified Report Date: 08/21/17

**SAMPLE RESULTS** 

Lab ID: L1726977-05 R Date Collected: 08/03/17 10:00

Client ID: FILTER F3

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method:EPA 537

Matrix: Dw Extraction Date: 08/14/17 08:00

Analytical Method: 122,537

Analytical Date: 08/18/17 23:51

Analyst: AR

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537 -	Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.78		1	
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.78		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	123		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	133	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	102		70-130



Project Name: BARNSTABLE, MA Lab Number: L1726977

Project Number: Not Specified Report Date: 08/21/17

SAMPLE RESULTS

08/10/17 22:32

PLE RESULTS

Lab ID: Date Collected: 08/03/17 10:00

Client ID: UV 3 Date Received: 08/03/17 Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method:EPA 522

Matrix: Dw Extraction Date: 08/10/17 06:00

Analytical Method: 120,522

Analyst: TJ

Analytical Date:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.691		ug/l	0.163		1
Surrogate			% Recovery	Qualifier		eptance riteria
1,4-Dioxane-d8			103			70-130



Date Received:

08/03/17 10:00

08/03/17

Project Name: BARNSTABLE, MA Lab Number: L1726977

Project Number: Not Specified Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1726977-06 R Date Collected:

Client ID: UV 3

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method:EPA 537

Matrix: Dw Extraction Date: 08/14/17 08:00 Analytical Method: 122,537

Analytical Date: 08/19/17 00:00
Analyst: AR

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537 -	Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	17.5		ng/l	1.78		1	
Perfluorooctanesulfonic Acid (PFOS)	91.0		ng/l	1.78		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	125		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	153	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	119		70-130



Project Name: BARNSTABLE, MA Lab Number: L1726977

Project Number: Not Specified Report Date: 08/21/17

SAMPLE RESULTS

08/19/17 00:10

Lab ID: L1726977-07 R Date Collected: 08/03/17 10:00

Client ID: FIELD BLANK Date Received: 08/03/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified
Extraction Method: EPA 537

Matrix: Water Extraction Date: 08/14/17 08:00
Analytical Method: 122,537

Analyst: AR

Analytical Date:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537 -	Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.78		1	
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.78		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	117		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	142	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	106		70-130



L1726977

**Project Name:** BARNSTABLE, MA

**Project Number:** Not Specified Report Date:

08/21/17

Lab Number:

Method Blank Analysis Batch Quality Control

Analytical Method: Extraction Method: EPA 522 120,522

Analytical Date: 08/10/17 12:20 08/10/17 06:00 Extraction Date:

TJ Analyst:

Parameter	Result	Qualifier	Units	RL	MDL	
1,4 Dioxane by EPA 522 - Mansfie	ld Lab for s	ample(s):	01,04-06	Batch:	WG1030897-1	
1,4-Dioxane	ND		ug/l	0.150		

		Acceptance		
Surrogate	%Recovery Qualifi	er Criteria		
1.4-Dioxane-d8	112	70-130		



**Project Name:** BARNSTABLE, MA

**Project Number:** Not Specified Lab Number:

L1726977

Report Date: 08/21/17

Method Blank Analysis Batch Quality Control

Analytical Method: Analytical Date:

122,537

08/18/17 22:19

Analyst:

AR

Extraction Method: EPA 537

Extraction Date:

08/14/17 08:00

Parameter	Result	Qualifier	Units	RL	MDL	
Perfluorinated Alkyl Acids by EPA	537 - Mansfi	eld Lab for	sample(s):	01,04-06	Batch: WG	1031619-1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00		
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00		

			Acceptance	
Surrogate	%Recovery	Qualifier	Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	116		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	123		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	106		70-130	



**Project Name:** BARNSTABLE, MA

**Project Number:** Not Specified Lab Number:

L1726977

Report Date: 08/21/17

Method Blank Analysis Batch Quality Control

Analytical Method:

122,537

08/18/17 22:19

Analytical Date: Analyst:

AR

Extraction Method: EPA 537

Extraction Date:

08/14/17 08:00

Parameter	Result	Qualifier	Units	R	L	MDL	
Perfluorinated Alkyl Acids by EPA	537 - Mansf	ield Lab for	sample(s):	07	Batch:	WG1031620-1	
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.0	00		
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.0	00		

			Acceptance	
Surrogate	%Recovery	Qualifier	Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	116		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	123		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	106		70-130	



BARNSTABLE, MA **Project Name:** 

**Project Number:** Not Specified Lab Number:

L1726977

08/21/17

Report Date:

Parameter	LCS %Recovery Qual	LCSD %Recovery Qual	%Recovery Limits	RPD	RPD Qual Limits	
1,4 Dioxane by EPA 522 - Mansfield Lab	Associated sample(s): 01,04-06	6 Batch: WG1030897-2	WG1030897-3			
1,4-Dioxane	94	98	70-130	4	30	

Surrogate	LCS	LCSD	Acceptance
	%Recovery Q	Qual %Recovery	Qual Criteria
1,4-Dioxane-d8	110	111	70-130

Project Name: BARNSTABLE, MA

Lab Number:

L1726977 08/21/17

Project Number: Not Specified

Report Date:

	LCS		LCSD %Recovery				RPD		
Parameter	%Recovery	Qual	%Recovery	Qual	Limits	RPD	Qual	Limits	
Perfluorinated Alkyl Acids by EPA 537	- Mansfield Lab Associ	ciated sample(	s): 01,04-06	Batch: WG	31031619-2 W	G1031619-3			
Perfluorooctanoic Acid (PFOA)	128		133	Q	70-130	4		30	
Perfluorooctanesulfonic Acid (PFOS)	121		123		70-130	2		30	

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	124		132	Q	70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	135	Q	142	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	122		128		70-130



BARNSTABLE, MA **Project Name:** 

Lab Number: L1726977

**Project Number:** Not Specified Report Date: 08/21/17

	LCS	LCS			%Recovery		R	PD		
Parameter	%Recovery Qual		%Recovery	%Recovery Qual		RPD	Qual Lii	mits		
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab Associated sample(s): 07 Batch: WG1031620-2 WG1031620-3										
Perfluorooctanoic Acid (PFOA)	128		133	Q	70-130	4		30		
Perfluorooctanesulfonic Acid (PFOS)	121		123		70-130	2		30		

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA) Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA) N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	124 <b>135</b> 122	Q	<b>132</b> <b>142</b> 128	Q Q	70-130 70-130 70-130	



# Matrix Spike Analysis Batch Quality Control

Project Name: BARNSTABLE, MA

Project Number:

Not Specified

Lab Number:

L1726977

Report Date:

08/21/17

Parameter Sample Added Found %Recovery Qual Found %Recovery Qual Limits RPD Qua	l Limits
1,4 Dioxane by EPA 522 - Mansfield Lab Associated sample(s): 01,04-06 QC Batch ID: WG1030897-5 QC Sample: L1726977-04 Client ID: FILT	TER E3
1,4-Dioxane 0.299 10.9 9.91 88 70-130 -	30

	MS	MSD	Acceptance	
Surrogate	% Recovery Qualifier	% Recovery Qualifier	Criteria	
1,4-Dioxane-d8	98		70-130	



**Lab Duplicate Analysis** 

**Batch Quality Control** 

Lab Number:

L1726977

Report Date:

08/21/17

RPD
Parameter Native Sample Duplicate Sample Units RPD Qual Limits

1,4 Dioxane by EPA 522 - Mansfield Lab Associated sample(s): 01,04-06 QC Batch ID: WG1030897-4 QC Sample: L1726977-01 Client ID: RAW 3

1,4-Dioxane 0.628 0.721 ug/l 14 30

Surrogate %Recovery Qualifier %Recovery Qualifier Criteria

1,4-Dioxane-d8 85 101 70-130



**Project Name:** 

**Project Number:** 

BARNSTABLE, MA

Not Specified

# **METALS**



Project Name:BARNSTABLE, MALab Number:L1726977Project Number:Not SpecifiedReport Date:08/21/17

**SAMPLE RESULTS** 

Lab ID: L1726977-01
Client ID: RAW 3

Sample Location: BARNSTABLE, MA

Matrix: Dw

Date Collected: 08/03/17 10:00 Date Received: 08/03/17

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Man	sfield Lab										
Iron, Total	0.058		mg/l	0.050		1	08/09/17 12:10	0 08/09/17 20:22	EPA 3005A	19,200.7	PS
Manganese, Total	0.040		mg/l	0.0010		1	08/09/17 12:10	0 08/10/17 09:50	EPA 3005A	3,200.8	AM



Project Name:BARNSTABLE, MALab Number:L1726977Project Number:Not SpecifiedReport Date:08/21/17

**SAMPLE RESULTS** 

Lab ID:L1726977-02Date Collected:08/03/17 10:00Client ID:FILTER A3Date Received:08/03/17Sample Location:BARNSTABLE, MAField Prep:Not Specified

Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab										
Iron, Total	ND		mg/l	0.050		1	08/09/17 12:10	0 08/09/17 20:26	EPA 3005A	19,200.7	PS
Manganese, Total	0.0026		mg/l	0.0010		1	08/09/17 12:10	0 08/10/17 09:54	EPA 3005A	3,200.8	AM



Project Name:BARNSTABLE, MALab Number:L1726977Project Number:Not SpecifiedReport Date:08/21/17

**SAMPLE RESULTS** 

Lab ID:L1726977-03Date Collected:08/03/17 10:00Client ID:FILTER C3Date Received:08/03/17Sample Location:BARNSTABLE, MAField Prep:Not Specified

Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Man	sfield Lab										
Iron, Total	ND		mg/l	0.050		1	08/09/17 12:1	0 08/09/17 20:30	EPA 3005A	19,200.7	PS
Manganese, Total	0.0030		mg/l	0.0010		1	08/09/17 12:1	0 08/10/17 09:58	EPA 3005A	3,200.8	AM



Project Name: BARNSTABLE, MA

Project Number: Not Specified

Lab Number:

L1726977

Report Date:

08/21/17

# Method Blank Analysis Batch Quality Control

Dilution **Date Date** Analytical Method Analyst **Result Qualifier Factor Prepared Analyzed Parameter Units** RL **MDL** Total Metals - Mansfield Lab for sample(s): 01-03 Batch: WG1030329-1 Manganese, Total ND 0.0010 08/10/17 09:26 3,200.8 mg/l 1 08/09/17 12:10 ΑM

**Prep Information** 

Digestion Method: EPA 3005A

Analytical **Dilution** Date **Date** Method Analyst **Result Qualifier Factor Prepared Analyzed Parameter Units** RL **MDL** Total Metals - Mansfield Lab for sample(s): 01-03 Batch: WG1030338-1 Iron, Total ND mg/l 0.050 1 08/09/17 19:24 19,200.7 PS 08/09/17 12:10

**Prep Information** 

Digestion Method: EPA 3005A



BARNSTABLE, MA **Project Name:** 

Lab Number: L1726977

**Project Number:** Not Specified Report Date:

08/21/17

Parameter	LCS %Recovery Qua	LCSD I %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sampl	e(s): 01-03 Batch: WG	G1030329-2					
Manganese, Total	114	-		85-115	-		
Total Metals - Mansfield Lab Associated sampl	e(s): 01-03 Batch: WG	31030338-2					
Iron, Total	112	-		85-115	-		



# Matrix Spike Analysis Batch Quality Control

Project Name: BARNSTABLE, MA

Project Number: Not Specified

Lab Number: L1726977

**Report Date:** 08/21/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD Qual	RPD Limits
Total Metals - Mansfield Lab	Associated sam	nple(s): 01-03	QC Bat	ch ID: WG103	0329-3	QC Sam	ple: L1726830-	02 C	lient ID: MS	S Sample	
Manganese, Total	0.0913	0.5	0.6372	109		-	-		70-130	-	20
Total Metals - Mansfield Lab	Associated sam	nple(s): 01-03	QC Bat	ch ID: WG103	0338-3	QC Sam	ple: L1726830-	02 C	lient ID: MS	S Sample	
Iron, Total	ND	1	1.14	114		-	-		75-125	-	20

Lab Duplicate Analysis
Batch Quality Control

Lab Number: BARNSTABLE, MA L1726977

08/21/17 Project Number: Not Specified Report Date:

Parameter	N	lative Sample	Duplica	te Sample	Units	RPD	Qual	RPD Limits	
Total Metals - Mansfield Lab Ass	ssociated sample(s): 01-03	QC Batch ID:	WG1030338-4	QC Sample:	L1726830-02	Client ID:	DUP Sampl	e	
Iron, Total		ND		ND	mg/l	NC		20	



**Project Name:** 

# INORGANICS & MISCELLANEOUS



**Project Name:** BARNSTABLE, MA

**Project Number:** Not Specified L1726977

Lab Number:

Report Date: 08/21/17

**SAMPLE RESULTS** 

Lab ID: L1726977-01

RAW 3 Client ID:

BARNSTABLE, MA Sample Location:

Matrix: Dw Date Collected: 08/03/17 10:00

Date Received: 08/03/17

Not Specified Field Prep:

Parameter	Result Q	Qualifier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	Westborough Lab								
Turbidity	ND	NTU	0.20		1	-	08/04/17 05:30	44,180.1	VB
Alkalinity, Total	15.5	mg CaCO3/L	2.00	NA	1	-	08/04/17 04:57	121,2320B	KA
pH (H)	5.8	SU	-	NA	1	-	08/04/17 07:55	121,4500H+-B	VB



**Project Name:** BARNSTABLE, MA

Lab Number:

L1726977

**Project Number:** Not Specified **Report Date:** 08/21/17

**SAMPLE RESULTS** 

Lab ID: L1726977-02

FILTER A3 Client ID: Sample Location:

BARNSTABLE, MA

Matrix: Dw Date Collected:

08/03/17 10:00

Date Received:

08/03/17

Field Prep:

Not Specified

Parameter	Result	Qualifier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	Westborough Lab	)							
Turbidity	ND	NTU	0.20		1	-	08/04/17 05:30	44,180.1	VB
Alkalinity, Total	43.5	mg CaCO3/L	2.00	NA	1	-	08/04/17 04:57	121,2320B	KA



**Project Name:** BARNSTABLE, MA

**Project Number:** Not Specified Lab Number:

L1726977

Report Date: 08/21/17

**SAMPLE RESULTS** 

Lab ID:

L1726977-03

Client ID:

FILTER C3

Sample Location:

BARNSTABLE, MA

Matrix:

Dw

Date Collected:

08/03/17 10:00

Date Received:

08/03/17

Field Prep:

Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - \	Westborough Lab	)								
Turbidity	ND		NTU	0.20		1	-	08/04/17 05:30	44,180.1	VB
Alkalinity, Total	42.0	mg	CaCO3/L	2.00	NA	1	-	08/04/17 04:57	121,2320B	KA



**Project Name:** BARNSTABLE, MA

L1726977 Project Number: Not Specified **Report Date:** 08/21/17

Lab Number:

Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - V	Vestborough Lab for sam	nple(s): 01-	03 Ba	atch: Wo	G1028787-1				
Alkalinity, Total	ND	mg CaCO3/L	2.00	NA	1	-	08/04/17 04:57	121,2320B	KA
General Chemistry - V	Vestborough Lab for sam	nple(s): 01-	03 Ba	atch: Wo	G1028860-1				
Turbidity	ND	NTU	0.20		1	-	08/04/17 05:30	44.180.1	VB



Project Name: BARNSTABLE, MA

Project Number: Not Specified

Lab Number:

L1726977

Report Date:

08/21/17

Parameter	LCS %Recovery Qual	LCSD %Recovery Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab	Associated sample(s): 01-03	Batch: WG1028787-2				
Alkalinity, Total	105	-	90-110	-		10
General Chemistry - Westborough Lab	Associated sample(s): 01-03	Batch: WG1028860-2				
Turbidity	99	-	90-110	-		
General Chemistry - Westborough Lab	Associated sample(s): 01 B	atch: WG1028873-1				
рН	100	-	99-101	-		5



# Matrix Spike Analysis Batch Quality Control

Project Name: BARNSTABLE, MA

**Project Number:** 

Not Specified

Lab Number:

L1726977

Report Date:

08/21/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual Found	MSD %Recovery Qu	Recovery ual Limits	y RPD	RPD Qual Limits
General Chemistry - Westbor	ough Lab Asso	ciated samp	ole(s): 01-03	QC Batch ID	D: WG1028787-4	QC Sample: L17	'26977-02 C	Client ID:	FILTER A3
Alkalinity, Total	43.5	100	140	96	-	-	86-116	-	10



# Lab Duplicate Analysis Batch Quality Control

Project Name: BARNSTABLE, MA

Project Number: Not Specified

Lab Number:

L1726977

**Report Date:** 08/21/17

Parameter	Native	Sample	Duplicate Sample	<u>Units</u>	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab	Associated sample(s): 01	-03 QC Batch II	D: WG1028787-3	QC Sample: L17	726977-02(	Client ID: I	FILTER A3
Alkalinity, Total	43	3.5	42.6	mg CaCO3/L	2		10
General Chemistry - Westborough Lab	Associated sample(s): 01	-03 QC Batch II	D: WG1028860-3	QC Sample: L17	726977-01(	Client ID: I	RAW 3
Turbidity	N	ND	ND	NTU	NC		13
General Chemistry - Westborough Lab	Associated sample(s): 01	QC Batch ID: \	WG1028873-2 Q0	C Sample: L1726	916-01 Clie	nt ID: DUI	P Sample
рН	7	7.8	7.8	SU	0		5



Serial\_No:08211717:46 *Lab Number:* L1726977

BARNSTABLE, MA

Project Number: Not Specified Report Date: 08/21/17

# Sample Receipt and Container Information

Were project specific reporting limits specified?

**Cooler Information** 

Project Name:

Cooler Custody Seal

A Absent B Absent

Container Info	ormation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	рH	pН	deg C	Pres	Seal	Date/Time	Analysis(*)
L1726977-01A	Plastic 120ml HNO3 preserved	Α	<2	<2	7.4	Υ	Absent		MN-2008T(180),FE-UI(180)
L1726977-01B	Plastic 250ml unpreserved/No Headspace	Α	NA		7.4	Υ	Absent		ALK-T-2320(14),TURB-180(2),PH-4500(.01)
L1726977-01C	Plastic 250ml Trizma preserved	Α	NA		7.4	Υ	Absent		A2-537-PFOA/PFOS(14)
L1726977-01D	Plastic 250ml Trizma preserved	Α	NA		7.4	Υ	Absent		A2-537-PFOA/PFOS(14)
L1726977-01E	Plastic 250ml Trizma preserved	Α	NA		7.4	Υ	Absent		A2-537-PFOA/PFOS(14)
L1726977-01F	Amber 500ml NaSulfite/NaHSO4 preserved	Α	6	6	7.4	Υ	Absent		A2-14DIOXANE-522(28)
L1726977-01G	Amber 500ml NaSulfite/NaHSO4 preserved	Α	6	6	7.4	Υ	Absent		A2-14DIOXANE-522(28)
L1726977-02A	Plastic 120ml HNO3 preserved	Α	<2	<2	7.4	Υ	Absent		MN-2008T(180),FE-UI(180)
L1726977-02B	Plastic 120ml unpreserved	Α	7	7	7.4	Υ	Absent		TURB-180(2)
L1726977-02C	Plastic 250ml unpreserved/No Headspace	Α	NA		7.4	Υ	Absent		ALK-T-2320(14)
L1726977-03A	Plastic 120ml HNO3 preserved	Α	<2	<2	7.4	Υ	Absent		MN-2008T(180),FE-UI(180)
L1726977-03B	Plastic 120ml unpreserved	Α	7	7	7.4	Υ	Absent		TURB-180(2)
L1726977-03C	Plastic 250ml unpreserved/No Headspace	Α	NA		7.4	Υ	Absent		ALK-T-2320(14)
L1726977-04A	Plastic 250ml Trizma preserved	В	NA		8.0	Υ	Absent		A2-537-PFOA/PFOS(14)
L1726977-04B	Plastic 250ml Trizma preserved	В	NA		8.0	Υ	Absent		A2-537-PFOA/PFOS(14)
L1726977-04C	Plastic 250ml Trizma preserved	В	NA		8.0	Υ	Absent		A2-537-PFOA/PFOS(14)
L1726977-04D	Amber 500ml NaSulfite/NaHSO4 preserved	В	6	6	8.0	Υ	Absent		A2-14DIOXANE-522(28)
L1726977-04E	Amber 500ml NaSulfite/NaHSO4 preserved	В	6	6	8.0	Υ	Absent		A2-14DIOXANE-522(28)
L1726977-05A	Plastic 250ml Trizma preserved	В	NA		8.0	Υ	Absent		A2-537-PFOA/PFOS(14)
L1726977-05B	Plastic 250ml Trizma preserved	В	NA		8.0	Υ	Absent		A2-537-PFOA/PFOS(14)
L1726977-05C	Plastic 250ml Trizma preserved	В	NA		8.0	Υ	Absent		A2-537-PFOA/PFOS(14)
L1726977-05D	Amber 500ml NaSulfite/NaHSO4 preserved	В	6	6	8.0	Υ	Absent		A2-14DIOXANE-522(28)



**Lab Number:** L1726977

**Report Date:** 08/21/17

Project Name: BARNSTABLE, MA

Project Number: Not Specified

Container Info	Initial	Final	Temp			Frozen			
Container ID	Container Type	Cooler	pН	рН	deg C	Pres	Seal	Date/Time	Analysis(*)
L1726977-05E	Amber 500ml NaSulfite/NaHSO4 preserved	В	6	6	8.0	Υ	Absent		A2-14DIOXANE-522(28)
L1726977-06A	Plastic 250ml Trizma preserved	В	NA		8.0	Υ	Absent		A2-537-PFOA/PFOS(14)
L1726977-06B	Plastic 250ml Trizma preserved	В	NA		8.0	Υ	Absent		A2-537-PFOA/PFOS(14)
L1726977-06C	Plastic 250ml Trizma preserved	В	NA		8.0	Υ	Absent		A2-537-PFOA/PFOS(14)
L1726977-06D	Amber 500ml NaSulfite/NaHSO4 preserved	В	6	6	8.0	Υ	Absent		A2-14DIOXANE-522(28)
L1726977-06E	Amber 500ml NaSulfite/NaHSO4 preserved	В	6	6	8.0	Υ	Absent		A2-14DIOXANE-522(28)
L1726977-07A	Plastic 250ml Trizma preserved	В	NA		8.0	Υ	Absent		A2-537-PFOA/PFOS(14)

Project Name:BARNSTABLE, MALab Number:L1726977Project Number:Not SpecifiedReport Date:08/21/17

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

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**

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

### Terms

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.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

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.

## 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

Report Format: Data Usability Report



Project Name:BARNSTABLE, MALab Number:L1726977Project Number:Not SpecifiedReport Date:08/21/17

#### Data Qualifiers

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

- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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:BARNSTABLE, MALab Number:L1726977Project Number:Not SpecifiedReport Date:08/21/17

### REFERENCES

- Methods for the Determination of Metals in Environmental Samples, Supplement I. EPA/600/R-94/111. May 1994.
- Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.
- Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.
- Determination of 1,4-Dioxane in Drinking Water by Solid Phase Extraction (SPE) and Gas Chromatography/Mass Spectrometry (GC/MS) with Selected Ion Monitoring (SIM). EPA Method 522, EPA/600/R-08/101. Version 1.0, September 2008.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.
- Determination of Selected Perfluorintated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537, EPA/600/R-08/092. Version 1.1, September 2009.

# **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

ID No.:**17873** Revision 10

Page 1 of 1

Published Date: 1/16/2017 11:00:05 AM

## **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:** <u>NPW</u>: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; <u>SCM</u>: 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-Colilert-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 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-Colilert-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.

Document Type: Form Pre-Qualtrax Document ID: 08-113

ALPHA	CHA	AIN OF C	USTO	DY	PAGE	OF	Date F	Rec'd in L	.ab: 8	3-1	7		1	ALPH	HA Job #	#: U72697	7
8 Walkup Driv	e 320 Forbes Blvo	Proje	ect Informa	ation					nation -	-		ables			g Inform		
Westboro, MA Tel: 508-898-	01581 Mansfield, MA ( 9220 Tel: 508-822-93		ot Name: 3	ARNSTAR	IF MA		□ AD		ĎA EM						e as Client		
Client Informati	on	Projec	ct Location:	SIARMSTA	ZIE MI	۸	Regu	latory R	equirem	ents	& F	roject	-	_		irements	100
Client: BLVELE	EAF INC.	Projec	ct #:	14 50 001 14	ISCL, I'E	1	☐ Yes	□ No MA	MCP An	alytical I	Method	ls			es 🗆 No	CT RCP Analytical Mat	nods
Address: 57 Pr	Address: 57 PRESSER HILL RD		Project Manager: FRIK GRUTTUN				☐ Yes	☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics) ☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)									
CHARLTON, MA 01507			ALPHA Quote #:				Yes No NPDES RGP										
Phone: (508) 2	94-3714		-Around T	ime			Other State /Fed Program Criteria									D. Control	
1	No bluele afucites	r com							DRCP 15	PP13	A VIUC	/ /					
Additional F	Project Informati	ماد تم	ndard (	RUSH (only	r confirmed if pre-u	approved!)	78260 D 62.	METALS: DMCD.	EPH. DRANGE DRCRAS DRCRAS	VPH: DRanges & Targets D. Ranges Only	UPEST Ranges	Te (Lotes)	The Charle	4. History	Carlos	SAMPLE INF Filtration Field Lab to do Preservation	TOTAL # BOTTLES
ALPHA Lab ID (Lab Use Only)	Sam	ple ID		ection	Sample		Noc.	3 / JA /	FTAL	H. A.		Felle Bar	¥.	3		Lab to do	Ť
26977-01	Day 7		Date	Time	Matrix	Initials	2/0	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		8/0	P	7		-		Sample Comment	s E S
			8/3/17	10,0	DW	(AW	1 1 2 2					XX	X	X	X		7
-02	112121710											XX					3
-03	FILTER (3		1									XX					3
-09	FILTER E 3											,		~			5
-05	FILTER F 3												X	1			
-06	VV 3									-			X	X			5
	Field Bla	w.K				1						_	X	X			5
	TIES OIL			V	₩.	•			-			-	-	X			2
												-	-				
																(24	0
Container Type P= Plastic A= Amber glass V= Vial G= Glass B= Bacteria cup	Preservative  A= None  B= HCI  C= HNO <sub>3</sub> D= H <sub>2</sub> SO <sub>4</sub> E= NaOH		- 48		Pre	ner Type servative											
C= Cube 0= Other E= Encore D= BOD Boilie	F= MeOH G= NaHSO4 H = Na_S,O3 I= Ascorbic Acid J = NH_4CI K= Zn Accetate O= Other	Relinque H	uished By:		8/3/	Time	au	Recei	ved By:		8	Date	/Time	**	Alpha's To See rever	es submitted are subjecterms and Conditions. rse side.	t to



## ANALYTICAL REPORT

Lab Number: L1727204

Client: Blueleaf Incorporated

57 Dresser Hill Road Charlton, MA 01507

ATTN: Erik Grotton

Phone: (508) 248-7094

Project Name: MAHER WELLS

Project Number: 20107 Report Date: 08/21/17

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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



Project Name: MAHER WELLS

Project Number: 20107

**Lab Number:** L1727204 **Report Date:** 08/21/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1727204-01	RAW 4	DW	BARNSTABLE, MA	08/04/17 10:00	08/04/17
L1727204-02	FILTER A4	DW	BARNSTABLE, MA	08/04/17 10:00	08/04/17
L1727204-03	FILTER C4	DW	BARNSTABLE, MA	08/04/17 10:00	08/04/17
L1727204-04	UV EFF4	DW	BARNSTABLE, MA	08/04/17 10:00	08/04/17
L1727204-05	FILTER E4	DW	BARNSTABLE, MA	08/04/17 10:00	08/04/17
L1727204-06	FILTER F4	DW	BARNSTABLE, MA	08/04/17 10:00	08/04/17



L1727204

Lab Number:

Project Name: MAHER WELLS

Project Number: 20107 Report Date: 08/21/17

### **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 an	nv c	nuestions
i icasc	Contact	Ciletit	OCI VICES	at 000	-024-3220	with a	ıy c	fuestions.



Project Name: MAHER WELLS Lab Number: L1727204

Project Number: 20107 Report Date: 08/21/17

# **Case Narrative (continued)**

Perfluorinated Alkyl Acids

L1727204-04 and -06: The surrogate recovery was outside the individual acceptance criteria for perfluoro-n-[1,2-13c2]decanoic acid (13c-pfda); however, re-analysis achieved similar results: 137% and 136%, respectively. The results of the re-analysis are reported; however, all associated compounds are considered to have a potential bias.

The WG1031619-3 LCSD recovery, associated with L1727204-01, -04, -05, and -06, was outside the individual acceptance criteria for perfluorooctanoic acid (pfoa); however, re-analysis achieved a similar result: 133%. The results of the re-analysis are reported; however, all associated compounds are considered to have a potential bias.

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:

Title: Technical Director/Representative Date: 08/21/17

(600, Skulow Kelly Stenstrom

# **ORGANICS**



# **SEMIVOLATILES**



Project Name: MAHER WELLS Lab Number: L1727204

Project Number: 20107 Report Date: 08/21/17

SAMPLE RESULTS

TJ

Lab ID: Date Collected: 08/04/17 10:00

Client ID: RAW 4 Date Received: 08/04/17

Sample Location: BARNSTABLE, MA Field Prep: Not Specified Extraction Method:EPA 522

Matrix: Dw Extraction Date: 08/10/17 06:00
Analytical Method: 120,522

Analytical Date: 08/11/17 00:22

Qualifier Units RL MDL **Dilution Factor Parameter** Result 1,4 Dioxane by EPA 522 - Mansfield Lab 0.590 0.156 1 1,4-Dioxane ug/l Acceptance Criteria Surrogate % Recovery Qualifier 1,4-Dioxane-d8 86 70-130



Analyst:

Project Name: MAHER WELLS Lab Number: L1727204

Project Number: 20107 Report Date: 08/21/17

**SAMPLE RESULTS** 

Lab ID: Date Collected: 08/04/17 10:00

Client ID: RAW 4 Date Received: 08/04/17

Sample Location: BARNSTABLE, MA Field Prep: Not Specified Extraction Method:EPA 537

Matrix: Dw Extraction Date: 08/14/17 08:00

Analytical Method: 122,537
Analytical Date: 08/18/17 22:28

Analyst: AR

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mar	nsfield Lab					
Perfluorooctanoic Acid (PFOA)	18.2		ng/l	1.85		1
Perfluorooctanesulfonic Acid (PFOS)	87.8		ng/l	1.85		1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	109		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	117		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	93		70-130	



Project Name: MAHER WELLS Lab Number: L1727204

Project Number: 20107 Report Date: 08/21/17

SAMPLE RESULTS

08/11/17 00:44

Lab ID: L1727204-04 Date Collected: 08/04/17 10:00

Client ID: UV EFF4 Date Received: 08/04/17

Sample Location: BARNSTABLE, MA Field Prep: Not Specified Extraction Method:EPA 522

Matrix: Dw Extraction Date: 08/10/17 06:00
Analytical Method: 120,522

Analyst: TJ

Analytical Date:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
1,4 Dioxane by EPA 522 - Mansfield La	b						
1,4-Dioxane	0.633		ug/l	0.156		1	
Surrogate			% Recovery	Qualifier		eptance riteria	
1,4-Dioxane-d8			93			70-130	



Project Name: MAHER WELLS Lab Number: L1727204

Project Number: 20107 Report Date: 08/21/17

**SAMPLE RESULTS** 

Lab ID: L1727204-04 Date Collected: 08/04/17 10:00

Client ID: UV EFF4 Date Received: 08/04/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method:EPA 537

Matrix: Dw Extraction Date: 08/14/17 08:00
Analytical Method: 122,537

Analytical Date: 08/18/17 22:46
Analyst: AR

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537 - Mai	nsfield Lab						
Perfluorooctanoic Acid (PFOA)	16.7		ng/l	1.85		1	
Perfluorooctanesulfonic Acid (PFOS)	68.9		na/l	1.85		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	122		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	137	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	115		70-130



Project Name: MAHER WELLS Lab Number: L1727204

Project Number: 20107 Report Date: 08/21/17

SAMPLE RESULTS

08/11/17 01:28

Lab ID: Date Collected: 08/04/17 10:00

Client ID: FILTER E4 Date Received: 08/04/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method:EPA 522

Matrix: Dw Extraction Date: 08/10/17 06:00

Analytical Method: 120,522

Analyst: TJ

Analytical Date:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
1,4 Dioxane by EPA 522 - Mansfield Lab							
1,4-Dioxane	0.316		ug/l	0.156		1	
Surrogate			% Recovery	Qualifier		eptance riteria	
1,4-Dioxane-d8			91			70-130	



Project Name: MAHER WELLS Lab Number: L1727204

Project Number: 20107 Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: Date Collected: 08/04/17 10:00

Client ID: FILTER E4 Date Received: 08/04/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method:EPA 537

Matrix: Dw Extraction Date: 08/14/17 08:00 Analytical Method: 122,537

Analytical Date: 08/18/17 23:05

Parameter	Result	Qualifier	Units	RL	MDL	IDL Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537 - Man	sfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.85		1	
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.85		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	126		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	128		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	97		70-130



Analyst:

AR

Project Name: MAHER WELLS Lab Number: L1727204

Project Number: 20107 Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: L1727204-06 Date Collected: 08/04/17 10:00

Client ID: FILTER F4 Date Received: 08/04/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method: EPA 522

Matrix: Dw Extraction Date: 08/10/17 06:00
Analytical Method: 120,522

Analytical Nethod: 120,522
Analytical Date: 08/11/17 01:50

Analyst: TJ

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.309		ug/l	0.153		1
Surrogate			% Recovery	Qualifier		eptance criteria
1,4-Dioxane-d8			95			70-130



Project Name: MAHER WELLS Lab Number: L1727204

Project Number: 20107 Report Date: 08/21/17

SAMPLE RESULTS

Lab ID: Date Collected: 08/04/17 10:00

Client ID: FILTER F4 Date Received: 08/04/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method:EPA 537

Matrix: Dw Extraction Date: 08/14/17 08:00 Analytical Method: 122,537

Analyst: AR

08/18/17 23:14

Analytical Date:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537 - Mar	nsfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.92		1	
Perfluorooctanesulfonic Acid (PFOS)	ND		na/l	1.92		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	127		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	136	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	109		70-130



L1727204

**Project Name:** MAHER WELLS

**Project Number:** 20107 Report Date:

08/21/17

Lab Number:

Method Blank Analysis Batch Quality Control

Extraction Method: EPA 522 Analytical Method: 120,522

Analytical Date: 08/10/17 12:20 08/10/17 06:00 Extraction Date:

Analyst: TJ

Parameter	Result	Qualifier Units	RL	MDL	
1,4 Dioxane by EPA 522 - M	lansfield Lab for sa	mple(s): 01,04-0	6 Batch:	WG1030897-1	
1,4-Dioxane	ND	ug/l	0.150	)	

		Acceptance			
Surrogate	%Recovery Qualific	er Criteria			
1.4-Dioxane-d8	112	70-130			



Extraction Method: EPA 537

L1727204

Lab Number:

Project Name: MAHER WELLS

Project Number: 20107 Report Date: 08/21/17

Method Blank Analysis Batch Quality Control

Analytical Method: 122,537

Analytical Date: 08/18/17 22:19 Extraction Date: 08/14/17 08:00

Analyst: AR

Parameter	Result	Qualifier	Units	RL	MDL	-
Perfluorinated Alkyl Acids by EPA 5	37 - Mansfi	eld Lab for	sample(s):	01,04-06	Batch:	WG1031619-1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00		
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00		

		ļ.	Acceptance	
Surrogate	%Recovery	Qualifier	Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	116		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	123		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	106		70-130	



L1727204

# Lab Control Sample Analysis Batch Quality Control

**Project Name:** MAHER WELLS

**Project Number:** 20107 Lab Number:

Report Date: 08/21/17

Parameter	LCS %Recovery Qua	LCSD al %Recove	ry Qual	%Recovery Limits	RPD	Qual	RPD Limits	
1,4 Dioxane by EPA 522 - Mansfield Lab	Associated sample(s): 01	1,04-06 Batch: V	VG1030897-2	WG1030897-3				
1,4-Dioxane	94	98		70-130	4		30	

Surrogate	LCS	LCSD	Acceptance
	%Recovery Qua	I %Recovery Qual	Criteria
1,4-Dioxane-d8	110	111	70-130

L1727204

# Lab Control Sample Analysis Batch Quality Control

Project Name: MAHER WELLS

**Project Number:** 20107

Lab Number:

**Report Date:** 08/21/17

	LCS		LCSD		%Recovery			RPD	
Parameter	%Recovery	Qual	%Recovery	Qual	Limits	RPD	Qual	Limits	
Perfluorinated Alkyl Acids by EPA 537 - Mar	nsfield Lab Assoc	ciated sample(s	s): 01,04-06	Batch: WG	31031619-2 WG	1031619-3			
Perfluorooctanoic Acid (PFOA)	128		133	Q	70-130	4		30	
Perfluorooctanesulfonic Acid (PFOS)	121		123		70-130	2		30	

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	124		132	Q	70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	135	Q	142	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	122		128		70-130



# Matrix Spike Analysis Batch Quality Control

Project Name: MAHER WELLS

Project Number: 20107

Lab Number:

L1727204

Report Date:

08/21/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery		Recovery Limits	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by E EFF4	EPA 537 - Ma	nsfield Lab	Associated sa	ample(s): 01,04-	06 QC	Batch ID:	WG1031619-5	QC S	Sample: L1	727204-(	04 Clie	ent ID: UV
Perfluorooctanoic Acid (PFOA)	16.7	37	67.9	138	Q	-	-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	68.9	34.3	117	140	Q	-	-		70-130	-		30

	MS	6	MSD	Acceptance	
Surrogate	% Recovery	Qualifier	% Recovery Qualifier	Criteria	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	124			70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	151	Q		70-130	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	125			70-130	

L1727204

Lab Number:

# Lab Duplicate Analysis Batch Quality Control

MAHER WELLS Batch Quality Cont

Project Number: 20107 Report Date: 08/21/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Qual Limits
Perfluorinated Alkyl Acids by EPA 537 - Mansfield L RAW 4	ab Associated sample(s):	01,04-06 QC Batch ID	: WG1031619-4	QC San	nple: L1727204-01 Client ID:
Perfluorooctanoic Acid (PFOA)	18.2	18.9	ng/l	4	30
Perfluorooctanesulfonic Acid (PFOS)	87.8	84.8	ng/l	3	30

			Acceptance	
Surrogate	%Recovery Q	ualifier %Recovery Qualifi	er Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	109	123	70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	117	126	70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	93	95	70-130	



**Project Name:** 

# **METALS**



Project Name: MAHER WELLS Lab Number: L1727204

Project Number: 20107 Report Date: 08/21/17

**SAMPLE RESULTS** 

 Lab ID:
 L1727204-01
 Date Collected:
 08/04/17 10:00

 Client ID:
 RAW 4
 Date Received:
 08/04/17

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Man	sfield Lab										
Iron, Total	0.063		mg/l	0.050		1	08/08/17 10:1	5 08/10/17 13:57	EPA 3005A	19,200.7	PS
Manganese, Total	0.044		mg/l	0.010		1	08/08/17 10:1	5 08/10/17 13:57	EPA 3005A	19,200.7	PS



Project Name: MAHER WELLS Lab Number: L1727204

Project Number: 20107 Report Date: 08/21/17

**SAMPLE RESULTS** 

 Lab ID:
 L1727204-02
 Date Collected:
 08/04/17 10:00

 Client ID:
 FILTER A4
 Date Received:
 08/04/17

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab										
Iron, Total	ND		mg/l	0.050		1	08/08/17 10:1	5 08/10/17 14:02	EPA 3005A	19,200.7	PS
Manganese, Total	ND		mg/l	0.010		1	08/08/17 10:1:	5 08/10/17 14:02	EPA 3005A	19,200.7	PS



Project Name: MAHER WELLS Lab Number: L1727204

Project Number: 20107 Report Date: 08/21/17

**SAMPLE RESULTS** 

 Lab ID:
 L1727204-03
 Date Collected:
 08/04/17 10:00

 Client ID:
 FILTER C4
 Date Received:
 08/04/17

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab										
Iron, Total	ND		mg/l	0.050		1	08/08/17 10:15	5 08/10/17 14:07	PA 3005A	19,200.7	PS
Manganese, Total	ND		mg/l	0.010		1	08/08/17 10:15	5 08/10/17 14:07	7 EPA 3005A	19,200.7	PS



Project Name: MAHER WELLS

**Project Number:** 20107

Lab Number:

L1727204

**Report Date:** 08/21/17

# Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfie	eld Lab for sample(s):	01-03 B	atch: W	G10298	44-1				
Iron, Total	ND	mg/l	0.050		1	08/08/17 10:15	08/10/17 12:37	19,200.7	PS
Manganese, Total	ND	mg/l	0.010		1	08/08/17 10:15	08/10/17 12:37	19,200.7	PS

**Prep Information** 

Digestion Method: EPA 3005A



# Lab Control Sample Analysis Batch Quality Control

**Project Name:** MAHER WELLS Lab Number:

L1727204

**Project Number:** 20107

Report Date:

08/21/17

Parameter	LCS %Recovery Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sa	ample(s): 01-03 Batch: WG	1029844-2					
Iron, Total	111	-		85-115	-		
Manganese, Total	107	-		85-115	-		

# Matrix Spike Analysis Batch Quality Control

Project Name: MAHER WELLS

Project Number: 20107

Lab Number: L1727204

**Report Date:** 08/21/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery Qu	Recovery ual Limits	RPD Qual	RPD Limits
Total Metals - Mansfield Lab A	ssociated sam	ple(s): 01-03	QC Bat	ch ID: WG1029	9844-3	QC Sam	ple: L1727176-02	Client ID: MS	S Sample	
Iron, Total	0.863	1	1.99	113		-	-	75-125	-	20
Manganese, Total	0.129	0.5	0.662	107		-	-	75-125	-	20
Total Metals - Mansfield Lab A	ssociated sam	ple(s): 01-03	QC Bat	ch ID: WG1029	9844-7	QC Sam	ple: L1727337-01	Client ID: MS	S Sample	
Iron, Total	ND	1	1.16	116		-	-	75-125	-	20
Manganese, Total	ND	0.5	0.555	111		-	-	75-125	-	20

# INORGANICS & MISCELLANEOUS



Project Name: MAHER WELLS Lab Number: L1727204

Project Number: 20107 Report Date: 08/21/17

**SAMPLE RESULTS** 

Lab ID: L1727204-01

Client ID: RAW 4

Sample Location: BARNSTABLE, MA

Matrix: Dw

Date Collected: 08/04/17 10:00

Date Received: 08/04/17 Field Prep: Not Specified

Parameter	Result Q	tualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	Westborough Lab									
Turbidity	ND		NTU	0.20		1	-	08/05/17 05:26	44,180.1	KA
Alkalinity, Total	15.7	mg	CaCO3/L	2.00	NA	1	-	08/05/17 03:50	121,2320B	KA
pH (H)	6.3		SU	-	NA	1	-	08/06/17 16:20	121,4500H+-B	JC



Project Name: MAHER WELLS Lab Number: L1727204

Project Number: 20107 Report Date: 08/21/17

**SAMPLE RESULTS** 

 Lab ID:
 L1727204-02
 Date Collected:
 08/04/17 10:00

 Client ID:
 FILTER A4
 Date Received:
 08/04/17

Client ID: FILTER A4 Date Received: 08/04/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Parameter	Result (	Qualifier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	Westborough Lab								
Turbidity	ND	NTU	0.20		1	-	08/05/17 05:26	44,180.1	KA
Alkalinity, Total	43.6	mg CaCO3/L	2.00	NA	1	-	08/05/17 03:50	121,2320B	KA
(H) Ha	6.9	SU	_	NA	1	-	08/06/17 16:20	121.4500H+-B	JC



Project Name: MAHER WELLS Lab Number: L1727204

Project Number: 20107 Report Date: 08/21/17

**SAMPLE RESULTS** 

 Lab ID:
 L1727204-03
 Date Collected:
 08/04/17 10:00

 Client ID:
 FILTER C4
 Date Received:
 08/04/17

Client ID: FILTER C4 Date Received: 08/04/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Parameter	Result Qu	ualifier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	Westborough Lab								
Turbidity	0.23	NTU	0.20		1	-	08/05/17 05:26	44,180.1	KA
Alkalinity, Total	43.6	mg CaCO3/L	2.00	NA	1	-	08/05/17 03:50	121,2320B	KA
pH (H)	6.9	SU	-	NA	1	-	08/06/17 16:20	121,4500H+-B	JC



Project Name: MAHER WELLS Lab Number: L1727204

Project Number: 20107 Report Date: 08/21/17

**SAMPLE RESULTS** 

Lab ID: L1727204-05 Date Collected: 08/04/17 10:00

Client ID: FILTER E4 Date Received: 08/04/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - We	estborough Lab	)								
Total Organic Carbon	ND		mg/l	0.500		1	-	08/07/17 13:03	121,5310C	AG



Project Name: MAHER WELLS Lab Number: L1727204

Project Number: 20107 Report Date: 08/21/17

**SAMPLE RESULTS** 

Lab ID: L1727204-06 Date Collected: 08/04/17 10:00

Client ID: FILTER F4 Date Received: 08/04/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - We	estborough Lab	)								
Total Organic Carbon	ND		mg/l	0.500		1	-	08/07/17 13:03	121,5310C	AG



L1727204

Lab Number:

Project Name: MAHER WELLS

Project Number: 20107 Report Date: 08/21/17

Method	Blank	Ana	lysis
Batch	Quality	Conti	rol

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Wes	tborough Lab for sa	mple(s): 01-	03 B	atch: W0	G1029164-1				
Alkalinity, Total	ND	mg CaCO3/L	2.00	NA	1	-	08/05/17 03:50	121,2320B	KA
General Chemistry - Wes	tborough Lab for sa	mple(s): 01-	03 B	atch: W0	31029169-1				
Turbidity	ND	NTU	0.20		1	-	08/05/17 05:26	44,180.1	KA
General Chemistry - Wes	tborough Lab for sa	mple(s): 05-	06 B	atch: W0	G1029445-1				
Total Organic Carbon	ND	mg/l	0.500		1	-	08/07/17 13:03	121,5310C	AG



# Lab Control Sample Analysis Batch Quality Control

Project Name: MAHER WELLS

**Project Number:** 20107

Lab Number: L1727204

Report Date:

08/21/17

Parameter	LCS %Recovery Qual	LCSD %Recovery Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab A	Associated sample(s): 01-03	Batch: WG1029164-2				
Alkalinity, Total	107	-	90-110	-		10
General Chemistry - Westborough Lab A	Associated sample(s): 01-03	Batch: WG1029169-2				
Turbidity	100		90-110	-		
General Chemistry - Westborough Lab A	Associated sample(s): 01-03	Batch: WG1029386-1				
рН	100	-	99-101	-		5
General Chemistry - Westborough Lab A	Associated sample(s): 05-06	Batch: WG1029445-2				
Total Organic Carbon	97	-	90-110	-		

# Matrix Spike Analysis Batch Quality Control

Project Name: MAHER WELLS

Project Number: 20107

Lab Number:

L1727204

Report Date:

08/21/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual Found	MSD %Recovery	Recove Qual Limits	•	RPD Qual Limits
General Chemistry - Westbo	orough Lab Assoc	iated samp	le(s): 01-03	QC Batch II	D: WG1029164-4	QC Sample: I	L1727204-02	Client ID:	FILTER A4
Alkalinity, Total	43.6	100	143	99	-	-	86-116	-	10
General Chemistry - Westbo	orough Lab Assoc	iated samp	le(s): 05-06	QC Batch II	D: WG1029445-4	QC Sample: I	L1726601-01	Client ID:	MS Sample
Total Organic Carbon	7.31	8	14.9	95	-	-	80-120	-	20



# Lab Duplicate Analysis Batch Quality Control

**Project Name:** MAHER WELLS

**Project Number:** 20107

L1727204 08/21/17 Report Date:

Lab Number:

Parameter	Native Samp	ole D	uplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated san	mple(s): 01-03	QC Batch ID:	WG1029164-3	QC Sample:	L1727204-02	Client ID:	FILTER A4
Alkalinity, Total	43.6		42.8	mg CaCO3/L	2		10
General Chemistry - Westborough Lab Associated san	mple(s): 01-03	QC Batch ID:	WG1029169-3	QC Sample:	L1727204-03	Client ID:	FILTER C4
Turbidity	0.23		0.23	NTU	0		13
General Chemistry - Westborough Lab Associated san	mple(s): 01-03	QC Batch ID:	WG1029386-2	QC Sample:	L1727204-01	Client ID:	RAW 4
pH (H)	6.3		6.3	SU	0		5
General Chemistry - Westborough Lab Associated san	mple(s): 05-06	QC Batch ID:	WG1029445-3	QC Sample:	L1726601-01	Client ID:	DUP Sample
Total Organic Carbon	7.31		7.17	mg/l	2		20



Project Name: MAHER WELLS

Project Number: 20107

Lab Number: L1727204 **Report Date:** 08/21/17

# Sample Receipt and Container Information

Were project specific reporting limits specified?

YES

**Cooler Information** 

Custody Seal Cooler

Α Absent В Absent

Container Info	ormation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	рН	рН	deg C	Pres	Seal	Date/Time	Analysis(*)
L1727204-01A	Plastic 120ml HNO3 preserved	Α	<2	<2	5.1	Υ	Absent		FE-UI(180),MN-UI(180)
L1727204-01B	Plastic 250ml unpreserved/No Headspace	Α	NA		5.1	Υ	Absent		ALK-T-2320(14),TURB-180(2),PH-4500(.01)
L1727204-01C	Plastic 250ml Trizma preserved	Α	NA		5.1	Υ	Absent		A2-537-PFOA/PFOS(14)
L1727204-01D	Plastic 250ml Trizma preserved	Α	NA		5.1	Υ	Absent		A2-537-PFOA/PFOS(14)
L1727204-01E	Plastic 250ml Trizma preserved	Α	NA		5.1	Υ	Absent		A2-537-PFOA/PFOS(14)
L1727204-01F	Amber 500ml NaSulfite/NaHSO4 preserved	Α	<4	<4	5.1	Υ	Absent		A2-14DIOXANE-522(28)
L1727204-01G	Amber 500ml NaSulfite/NaHSO4 preserved	Α	<4	<4	5.1	Υ	Absent		A2-14DIOXANE-522(28)
L1727204-02A	Plastic 120ml unpreserved	Α	8	8	5.1	Υ	Absent		TURB-180(2),PH-4500(.01)
L1727204-02B	Plastic 120ml HNO3 preserved	Α	<2	<2	5.1	Υ	Absent		FE-UI(180),MN-UI(180)
L1727204-02C	Plastic 250ml unpreserved/No Headspace	Α	NA		5.1	Υ	Absent		ALK-T-2320(14)
L1727204-03A	Plastic 120ml unpreserved	Α	8	8	5.1	Υ	Absent		TURB-180(2),PH-4500(.01)
L1727204-03B	Plastic 120ml HNO3 preserved	Α	<2	<2	5.1	Υ	Absent		FE-UI(180),MN-UI(180)
L1727204-03C	Plastic 250ml unpreserved/No Headspace	Α	NA		5.1	Υ	Absent		ALK-T-2320(14)
L1727204-04A	Plastic 250ml Trizma preserved	В	NA		5.6	Υ	Absent		A2-537-PFOA/PFOS(14)
L1727204-04B	Plastic 250ml Trizma preserved	В	NA		5.6	Υ	Absent		A2-537-PFOA/PFOS(14)
L1727204-04C	Plastic 250ml Trizma preserved	В	NA		5.6	Υ	Absent		A2-537-PFOA/PFOS(14)
L1727204-04D	Amber 500ml NaSulfite/NaHSO4 preserved	Α	<4	<4	5.1	Υ	Absent		A2-14DIOXANE-522(28)
L1727204-04E	Amber 500ml NaSulfite/NaHSO4 preserved	Α	<4	<4	5.1	Υ	Absent		A2-14DIOXANE-522(28)
L1727204-05A	Vial H2SO4 preserved	Α	NA		5.1	Υ	Absent		TOC-5310(28)
L1727204-05B	Vial H2SO4 preserved	Α	NA		5.1	Υ	Absent		TOC-5310(28)
L1727204-05C	Vial H2SO4 preserved	Α	NA		5.1	Υ	Absent		TOC-5310(28)
L1727204-05D	Plastic 250ml Trizma preserved	В	NA		5.6	Υ	Absent		A2-537-PFOA/PFOS(14)



Lab Number: L1727204

Report Date: 08/21/17

**Project Name:** MAHER WELLS

Project Number: 20107

Container Information		Initial	Final	Temp			Frozen			
	Container ID	Container Type	Cooler	рH	рН	deg C	Pres	Seal	Date/Time	Analysis(*)
	L1727204-05E	Plastic 250ml Trizma preserved	В	NA		5.6	Υ	Absent		A2-537-PFOA/PFOS(14)
	L1727204-05F	Plastic 250ml Trizma preserved	В	NA		5.6	Υ	Absent		A2-537-PFOA/PFOS(14)
	L1727204-05G	Amber 500ml NaSulfite/NaHSO4 preserved	Α	<4	<4	5.1	Υ	Absent		A2-14DIOXANE-522(28)
	L1727204-05H	Amber 500ml NaSulfite/NaHSO4 preserved	Α	<4	<4	5.1	Υ	Absent		A2-14DIOXANE-522(28)
	L1727204-06A	Vial H2SO4 preserved	Α	NA		5.1	Υ	Absent		TOC-5310(28)
	L1727204-06B	Vial H2SO4 preserved	Α	NA		5.1	Υ	Absent		TOC-5310(28)
	L1727204-06C	Vial H2SO4 preserved	Α	NA		5.1	Υ	Absent		TOC-5310(28)
	L1727204-06D	Plastic 250ml Trizma preserved	В	NA		5.6	Υ	Absent		A2-537-PFOA/PFOS(14)
	L1727204-06E	Plastic 250ml Trizma preserved	В	NA		5.6	Υ	Absent		A2-537-PFOA/PFOS(14)
	L1727204-06F	Plastic 250ml Trizma preserved	В	NA		5.6	Υ	Absent		A2-537-PFOA/PFOS(14)
	L1727204-06G	Amber 500ml NaSulfite/NaHSO4 preserved	Α	<4	<4	5.1	Υ	Absent		A2-14DIOXANE-522(28)
	L1727204-06H	Amber 500ml NaSulfite/NaHSO4 preserved	Α	<4	<4	5.1	Υ	Absent		A2-14DIOXANE-522(28)



L1727204

Lab Number:

Project Name: MAHER WELLS

Project Number: 20107 Report Date: 08/21/17

### **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**

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

### Terms

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.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

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.

# 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

Report Format: Data Usability Report



Project Name: MAHER WELLS Lab Number: L1727204
Project Number: 20107 Report Date: 08/21/17

#### **Data Qualifiers**

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

- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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: MAHER WELLS Lab Number: L1727204

Project Number: 20107 Report Date: 08/21/17

### REFERENCES

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

- Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.
- Determination of 1,4-Dioxane in Drinking Water by Solid Phase Extraction (SPE) and Gas Chromatography/Mass Spectrometry (GC/MS) with Selected Ion Monitoring (SIM). EPA Method 522, EPA/600/R-08/101. Version 1.0, September 2008.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.
- Determination of Selected Perfluorintated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537, EPA/600/R-08/092. Version 1.1, September 2009.

# 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

ID No.:**17873** Revision 10

Published Date: 1/16/2017 11:00:05 AM

Page 1 of 1

# **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:** <u>NPW</u>: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; <u>SCM</u>: 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

**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-Colilert-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-Colilert-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.

Document Type: Form

ALPHA MA	ANSFIELD CHAIN	OF C	JSTOD	Υ	PAGE	_OF	_ D	ate Re	ec'd ir	ı Lab	. 8	141	רו			AL	.PHA	ارا الم الم الم الم الم الم الم الم الم ال	27204	L
WESTBORO, MA	MANSFIELD, MA	Projec	t Informat	ion	•	a	R	s epor	t Info	rma	tion -	- Dat	a Deliv	/erable	es	SECTION AND DESCRIPTION OF THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS	ALC: UNKNOWN	Information		
TEL: 508-898-9220 FAX: 508-898-9193	TEL: 508-822-9300 FAX: 508-822-3288	Project	Name: M	wher '	Nells	-		ן FA≻	<			MAIL				□ s	ame	as Client info PO #	ţ	
Client Information	on		Location: Z			ΛA		ADE					eliverat							
Client: Blueles	f Inc	Project		107	- 1							ents	Repo		its					
Address: 57 J	hesser Hill Rd	Project I	Manager:		Souto	^	Ste	ite /Fe	ed Pro	ogran	n 		Cı	riteria				***		
Charlton,	MA 01507		Quote #:					100												
Charlon, Phone: (508) 2	48-7094	Turn-	Around Tir	ne																
Fax:		V6																		
Email: egrotto	n@blueleafwater.com	<b>≱</b> Stand		RUSH (only		pproved!)			1	/	/ /	7 ,	/ /	/	/	/	/ /			T
☐ These samples hav	ve been previously analyzed by Alpha	Date Du	ie:		Time:			SISATULE (	$\sim$	1/				//	/ /			SAMPLE	ANDLING	T A L
Other Project S	pecific Requirements/Comr	ments/De	etection Li	mits:			S	7/	(2) char	$\frac{Y}{t}$		/,	/_/	/ /				/ Filtration □ Done		L #
PLEASE NOTE	-								2	$\checkmark$	/ /	\ \frac{\range{g}}{2}	PFOA		//	/ /	/ /	□ Not need □ Lab to do		
MS/MSD (at unit	cost) will be omitted unles	s you ch	eck here:					Z Z	14rb	/	0/1	00/	3/1	//	/ /			Preservatio	n	O T
ALPHA Lab ID	Sample ID		Colle	ection	Sample	Sampler's		a) =	<b>E</b>	¥/_	Cyrr.D	D'T'	0/10	/ /				Lab to do		B O T T L E
(Lab Use Only)			Date	Time	Matrix	Initials		_	1	/					/ /	//	/ /	Sample Specific C	omments	S
27204-01	Raw 4	- HI	8/4/17	1000	DW	CAW	1	1			2	3								7
702	Filter A4		1		1	i	1		١	1					2					3
-03	Filter C4						1		1	١										3
40	UV E&4										2	3								5
-05											2		2			1				8
-06	Filter E4		V	\	,	1					2	3	2			1			-	8
	THE TA										-					+	+			× 7
	*						-				-			-	+	+	-	<u> </u>		-
						_	$\vdash$					-		-		-				
							-						-				-			
															10					
					Conta	iner Type	7	P	7		A	P	A					Please print clearly,		
			-			eservative	C	A	A	A	0	0	D					pletely. Samples car in and turnaround tin	ne clock will i	not
		Relinqui	shed By:		1 1	/ime	10	,			d By:	, 1	_		Date/T			start until any ambigi All samples submitte	d are subject	
EORM NO. 101 00 ( 07 07	-P.40	7	-		0,		U	w		FAC			_	814	117	170	4	Alpha's Terms and C See reverse side	onditions.	
FORM NO: 101-09 (rev. 27-Si Page 44 of 44	-P-10)				17	i														



#### ANALYTICAL REPORT

Lab Number: L1727347

Client: Blueleaf Incorporated

57 Dresser Hill Road Charlton, MA 01507

ATTN: Erik Grotton
Phone: (508) 248-7094

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 08/23/17

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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



Project Name: MAHER WELL PILOT

Project Number: 20107

 Lab Number:
 L1727347

 Report Date:
 08/23/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1727347-01	RAW-5	DW	BARNSTABLE, MA	08/07/17 11:30	08/07/17
L1727347-02	TROJAN-5	DW	BARNSTABLE, MA	08/07/17 11:30	08/07/17
L1727347-03	FILTER-E-5	DW	BARNSTABLE, MA	08/07/17 11:30	08/07/17
L1727347-04	FILTER-F-5	DW	BARNSTABLE, MA	08/07/17 11:30	08/07/17
L1727347-05	FIELD BLANK	WATER	BARNSTABLE, MA	08/07/17 11:30	08/07/17



Lab Number:

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 08/23/17

#### **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.	



Lab Number:

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 08/23/17

#### **Case Narrative (continued)**

#### Report Submission

The analysis of Bromate was subcontracted. A copy of the laboratory report is included as an addendum.

Please note: This data is only available in PDF format and is not available on Data Merger.

#### Sample Receipt

The samples were received at the laboratory above the required temperature range. The samples were transported to the laboratory in a cooler with melted ice and delivered directly from the sampling site. L1727347-01, -02, -03 and -04: The sample was received above the appropriate pH for the 1,4 Dioxane by EPA 522 analysis.

#### Perfluorinated Alkyl Acids by EPA 537

L1727347-01: The surrogate recoveries were outside the acceptance criteria for perfluoro-n-[1,2-13c2]hexanoic acid (13c-pfhxa) (15%), perfluoro-n-[1,2-13c2]decanoic acid (13c-pfda) (11%) and n-deuterioethylperfluoro-1-octanesulfonamidoacetic acid (d5-netfosaa) (52%); however, re-extraction achieved similar results. All associated compounds are considered to have a potential bias.

L1727347-02: The surrogate recoveries were outside the acceptance criteria for perfluoro-n-[1,2-13c2]hexanoic acid (13c-pfhxa) (4%), perfluoro-n-[1,2-13c2]decanoic acid (13c-pfda) (3%) and n-deuterioethylperfluoro-1-octanesulfonamidoacetic acid (d5-netfosaa) (32%); however, re-extraction achieved similar results. All associated compounds are considered to have a potential bias.

L1727347-03: The surrogate recoveries were outside the acceptance criteria for perfluoro-n-[1,2-13c2]hexanoic acid (13c-pfhxa) (0%), perfluoro-n-[1,2-13c2]decanoic acid (13c-pfda) (3%) and n-deuterioethylperfluoro-1-octanesulfonamidoacetic acid (d5-netfosaa) (39%); however, re-extraction achieved similar results. All associated compounds are considered to have a potential bias.

L1727347-04: The surrogate recoveries were outside the acceptance criteria for perfluoro-n-[1,2-13c2]hexanoic acid (13c-pfhxa) (15%), perfluoro-n-[1,2-13c2]decanoic acid (13c-pfda) (4%) and n-deuterioethylperfluoro-1-octanesulfonamidoacetic acid (d5-netfosaa) (41%); however, re-extraction achieved similar results. All associated compounds are considered to have a potential bias.

L1727347-05: The surrogate recovery was outside the acceptance criteria; however, re-analysis achieved



L1727347

Project Name: MAHER WELL PILOT Lab Number:

Project Number: 20107 Report Date: 08/23/17

#### **Case Narrative (continued)**

similar results: perfluoro-n-[1,2-13c2]decanoic acid (13c-pfda) (146%). The results of the re-analysis are reported; however, all associated compounds are considered to have a potential bias.

The WG1031619-3 LCSD recovery, associated with L1727347-01 through -04, is outside the acceptance criteria for individual target compounds; however, re-analysis achieved similar results. The results of the associated samples are reported; however, all results are considered to have a potentially high bias for perfluorocatanoic acid (pfoa) (133%).

The WG1031620-3 LCSD recovery, associated with L1727347-05, was outside the individual acceptance criteria for perfluoroctanoic acid (pfoa); however, re-analysis achieved a similar result: 133%. The results of the re-analysis are reported; however, all associated compounds are considered to have a potential bias.

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.

Then film t Kara Lindquist

Authorized Signature:

Title: Technical Director/Representative

ALPHA

Date: 08/23/17

### **ORGANICS**



### **SEMIVOLATILES**



**Project Name:** Lab Number: MAHER WELL PILOT L1727347

**Project Number:** Report Date: 20107 08/23/17

**SAMPLE RESULTS** 

Lab ID: L1727347-01 Date Collected: 08/07/17 11:30

Client ID: Date Received: 08/07/17 RAW-5 Sample Location: Field Prep: BARNSTABLE, MA Not Specified

Extraction Method:EPA 522 08/10/17 06:00

Matrix: Dw Extraction Date: Analytical Method: 120,522

Analytical Date: 08/11/17 02:12

Analyst: TJ

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.594		ug/l	0.144		1
Surrogate			% Recovery	Qualifier		eptance riteria
1,4-Dioxane-d8			87			70-130



Project Name: MAHER WELL PILOT Lab Number: L1727347

Project Number: 20107 Report Date: 08/23/17

SAMPLE RESULTS

Lab ID: Date Collected: 08/07/17 11:30

Client ID: RAW-5 Date Received: 08/07/17
Sample Location: RARNSTARI F MA Field Pren: Not Specified

Sample Location: BARNSTABLE, MA Field Prep: Not Specified Extraction Method:EPA 537

Matrix: Dw Extraction Date: 08/14/17 08:00
Analytical Method: 122,537

Analytical Date: 08/19/17 00:19
Analyst: AR

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537	- Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.85		1	
Perfluorooctanesulfonic Acid (PFOS)	86.2		ng/l	1.85		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	15	Q	70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	11	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	52	Q	70-130



Project Name: MAHER WELL PILOT Lab Number: L1727347

Project Number: 20107 Report Date: 08/23/17

SAMPLE RESULTS

TJ

Lab ID: Date Collected: 08/07/17 11:30

Client ID: TROJAN-5 Date Received: 08/07/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method:EPA 522

Matrix: Dw Extraction Date: 08/10/17 06:00 Analytical Method: 120,522

Analytical Date: 08/11/17 02:33

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.144		1
Surrogate			% Recovery	Qualifier		eptance riteria
1,4-Dioxane-d8			87			70-130



Analyst:

Project Name: MAHER WELL PILOT Lab Number: L1727347

Project Number: 20107 Report Date: 08/23/17

SAMPLE RESULTS

08/19/17 00:28

Lab ID: L1727347-02 Date Collected: 08/07/17 11:30

Client ID: TROJAN-5 Date Received: 08/07/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method:EPA 537

Matrix: Dw Extraction Date: 08/14/17 08:00

Analytical Method: 122,537

Analyst: AR

Analytical Date:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab							
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.85		1	
Perfluorooctanesulfonic Acid (PFOS)	89.5		ng/l	1.85		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	4	Q	70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	3	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	32	Q	70-130



70-130

**Project Name:** Lab Number: MAHER WELL PILOT L1727347

**Project Number:** Report Date: 20107 08/23/17

**SAMPLE RESULTS** 

Lab ID: L1727347-03 Date Collected: 08/07/17 11:30

Client ID: Date Received: FILTER-E-5 08/07/17 Sample Location: Field Prep: BARNSTABLE, MA Not Specified

Extraction Method: EPA 522 Matrix: Dw Extraction Date: 08/10/17 06:00

Analytical Method: 120,522

Analytical Date: 08/11/17 02:55

Analyst: TJ

1,4-Dioxane-d8

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.214		ug/l	0.144		1
Surrogate			% Recovery	Qualifier		otance teria

90



L1727347

Project Name: MAHER WELL PILOT Lab Number:

Project Number: 20107 Report Date: 08/23/17

CAMPLE DECLIETE

**SAMPLE RESULTS** 

Lab ID: Date Collected: 08/07/17 11:30

Client ID: FILTER-E-5 Date Received: 08/07/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method:EPA 537

Matrix: Dw Extraction Date: 08/14/17 08:00

Analytical Method: 122,537

Analyst: AR

08/19/17 00:37

Analytical Date:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537	' - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.78		1	
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.78		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	0	Q	70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	3	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	39	Q	70-130



**Project Name:** Lab Number: MAHER WELL PILOT L1727347

**Project Number:** Report Date: 20107 08/23/17

08/11/17 03:17

**SAMPLE RESULTS** 

Lab ID: L1727347-04 Date Collected: 08/07/17 11:30 Client ID: Date Received: 08/07/17 FILTER-F-5

Sample Location: Field Prep: BARNSTABLE, MA Not Specified

Extraction Method:EPA 522 Matrix: Dw 08/10/17 06:00 Extraction Date: Analytical Method: 120,522

Analyst: TJ

Analytical Date:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
1,4 Dioxane by EPA 522 - Mansfield Lab							
1,4-Dioxane	0.238		ug/l	0.147		1	
Surrogate			% Recovery	Qualifier		eptance riteria	
1,4-Dioxane-d8			88			70-130	



**Project Name:** Lab Number: MAHER WELL PILOT L1727347

**Project Number:** Report Date: 20107 08/23/17

**SAMPLE RESULTS** 

Lab ID: L1727347-04 Date Collected: 08/07/17 11:30

Client ID: Date Received: FILTER-F-5 08/07/17 Sample Location: Field Prep: BARNSTABLE, MA Not Specified

Extraction Method: EPA 537 Matrix: Dw Extraction Date: 08/14/17 08:00

Analytical Method: 122,537 Analytical Date: 08/19/17 00:46

Analyst: AR

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537 - N	lansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.85		1	
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.85		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	15	Q	70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	4	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	41	Q	70-130



Project Name: MAHER WELL PILOT Lab Number: L1727347

Project Number: 20107 Report Date: 08/23/17

**SAMPLE RESULTS** 

Lab ID: L1727347-05 R Date Collected: 08/07/17 11:30

Client ID: FIELD BLANK Date Received: 08/07/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified
Extraction Method: EPA 537

Matrix: Water Extraction Date: 08/14/17 08:00
Analytical Method: 122,537

Analytical Nethod: 122,537
Analytical Date: 08/19/17 00:56

Analyst: AR

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537 - Mai	nsfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.85		1	
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.85		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	129		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	146	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	114		70-130



**Project Name:** MAHER WELL PILOT

**Project Number:** 20107 Report Date: 08/23/17

Lab Number:

Method Blank Analysis Batch Quality Control

Extraction Method: EPA 522 Analytical Method: 120,522

Analytical Date: 08/10/17 12:20 08/10/17 06:00 Extraction Date:

Analyst: TJ

Parameter	Result	Qualifier	Units	RL	MDL	
1,4 Dioxane by EPA 522 - Mansfield	d Lab for s	ample(s):	01-04	Batch: WG103	30897-1	
1,4-Dioxane	ND		ug/l	0.150		

		Acceptance						
Surrogate	%Recovery Qualific	er Criteria						
1.4-Dioxane-d8	112	70-130						



Lab Number:

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 08/23/17

Method Blank Analysis Batch Quality Control

Analytical Method: 122,537 Extraction Method: EPA 537

Analytical Date: 08/18/17 22:19 Extraction Date: 08/14/17 08:00

Analyst: AR

Parameter	Result	Qualifier	Units	RL	ľ	MDL
Perfluorinated Alkyl Acids by EPA 5	37 - Mansfi	eld Lab for	sample(s):	01-04	Batch:	WG1031619-1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00		
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00		

			Acceptance	
Surrogate	%Recovery	Qualifier	Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	116		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	123		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	106		70-130	



Lab Number:

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 08/23/17

Method Blank Analysis Batch Quality Control

Analytical Method: 122,537 Extraction Method: EPA 537

Analytical Date: 08/18/17 22:19 Extraction Date: 08/14/17 08:00

Analyst: AR

Parameter	Result	Qualifier	Units	R	L	MDL	
Perfluorinated Alkyl Acids by EPA 5	37 - Mansfi	eld Lab for	sample(s):	05	Batch:	WG1031620-1	
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.0	00		
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.0	00		

			Acceptance	
Surrogate	%Recovery	Qualifier	Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	116		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	123		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	106		70-130	



**Project Name:** MAHER WELL PILOT

Lab Number:

L1727347

**Project Number:** 20107

Report Date: 08/23/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	RPD Qual Limits	
1,4 Dioxane by EPA 522 - Mansfield Lab A	Associated sample(	s): 01-04	Batch: WG1030	897-2 WG	G1030897-3			
1,4-Dioxane	94		98		70-130	4	30	

Surrogate	LCS	LCSD	Acceptance
	%Recovery	Qual %Recovery	Qual Criteria
1,4-Dioxane-d8	110	111	70-130



**Project Name:** MAHER WELL PILOT

**Project Number:** 

20107

Lab Number:

L1727347 08/23/17

Report Date:

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	RPD imits
Perfluorinated Alkyl Acids by EPA 537 - N	Mansfield Lab Assoc	iated sample(s	s): 01-04 Bato	h: WG10	31619-2 WG1031	619-3	
Perfluorooctanoic Acid (PFOA)	128		133	Q	70-130	4	30
Perfluorooctanesulfonic Acid (PFOS)	121		123		70-130	2	30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	124		132	Q	70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	135	Q	142	Q	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	122		128		70-130



Project Name: MAHER WELL PILOT

**Project Number:** 

20107

Lab Number: L1727347

Report Date:

08/23/17

Devenuetes	LCS %Recoverv	LCSD %Recovery	Ovel	%Recovery Limits	000	RPD Qual Limits		
<u>Parameter</u>	%Recovery	Qual	/onecovery	Qual	LIIIIIIS	RPD	Qual Limits	
Perfluorinated Alkyl Acids by EPA 537 - Ma	ansfield Lab Assoc	ciated sample(s	s): 05 Batch:	WG10316	20-2 WG1031620	-3		
Perfluorooctanoic Acid (PFOA)	128		133	Q	70-130	4	30	
Perfluorooctanesulfonic Acid (PFOS)	121		123		70-130	2	30	

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA) Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA) N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	124 <b>135</b> 122	Q	<b>132</b> <b>142</b> 128	Q Q	70-130 70-130 70-130



### Matrix Spike Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number:

L1727347

Report Date:

08/23/17

	Native	MS	MS	MS		MSD	MSD		Recovery			RPD
Parameter	Sample	Added	Found	%Recovery	Qual	Found	%Recovery	Qual	Limits	RPD	Qual	Limits
Perfluorinated Alkyl Acids by E	PA 537 - Ma	nsfield Lab	Associated sa	ample(s): 01-04	QC Ba	tch ID: WG	91031619-5	QC San	nple: L1727	204-04	Client	ID: MS Sample
Perfluorooctanoic Acid (PFOA)	16.7	37	67.9	138	Q	-	-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	68.9	34.3	117	140	Q	-	-		70-130	-		30

	MS	3	MSD	Acceptance	
Surrogate	% Recovery	Qualifier	% Recovery Qualifier	Criteria	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	124			70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	151	Q		70-130	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	125			70-130	

### Lab Duplicate Analysis Batch Quality Control

MAHER WELL PILOT

Batch Quality Co

Lab Number: L17

L1727347

Report Date:

e: 08/23/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual Lim	nits
Perfluorinated Alkyl Acids by EPA 537 - Mansfield L DUP Sample	ab Associated sample(s):	01-04 QC Batch ID	: WG1031619-4	QC Sam	ple: L1727204-0	1 Client ID:
Perfluorooctanoic Acid (PFOA)	18.2	18.9	ng/l	4		30
Perfluorooctanesulfonic Acid (PFOS)	87.8	84.8	ng/l	3		30

Surrogato	9/ Bassyamy	Ouglifier 9/ Bassyony	Acceptance Qualifier Criteria	
Surrogate	%Recovery	Qualifier %Recovery	Qualifier Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	109	123	70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	117	126	70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	93	95	70-130	

**Project Name:** 

Project Number:

20107

#### **METALS**



L1727347

**Project Name:** Lab Number: MAHER WELL PILOT

**Project Number:** 20107 **Report Date:** 08/23/17

**SAMPLE RESULTS** 

Lab ID: Date Collected: L1727347-01 08/07/17 11:30 Client ID: RAW-5 Date Received: 08/07/17

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	sfield Lab										
Iron, Total	0.080		mg/l	0.050		1	08/08/17 10:1	5 08/10/17 15:03	EPA 3005A	19,200.7	PS
Manganese, Total	0.051		mg/l	0.010		1	08/08/17 10:1	5 08/10/17 15:03	EPA 3005A	19,200.7	PS



L1727347

**Project Name:** Lab Number: MAHER WELL PILOT

**Project Number:** 20107 **Report Date:** 08/23/17

**SAMPLE RESULTS** 

Lab ID: Date Collected: L1727347-02 08/07/17 11:30 Client ID: TROJAN-5 Date Received: 08/07/17

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab										
Iron, Total	0.081		mg/l	0.050		1	08/08/17 10:1	5 08/10/17 15:08	EPA 3005A	19,200.7	PS
Manganese, Total	0.053		mg/l	0.010		1	08/08/17 10:1:	5 08/10/17 15:08	EPA 3005A	19,200.7	PS



L1727347

Project Name: MAHER WELL PILOT Lab Number:

Project Number: 20107 Report Date: 08/23/17

**SAMPLE RESULTS** 

 Lab ID:
 L1727347-03
 Date Collected:
 08/07/17 11:30

 Client ID:
 FILTER-E-5
 Date Received:
 08/07/17

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab										
Iron, Total	ND		mg/l	0.050		1	08/08/17 10:1	5 08/10/17 15:13	EPA 3005A	19,200.7	PS
Manganese, Total	0.060		mg/l	0.010		1	08/08/17 10:1	5 08/10/17 15:13	EPA 3005A	19,200.7	PS



**Project Name:** MAHER WELL PILOT Lab Number: **Report Date:** 

L1727347

08/23/17

**Project Number:** 20107

**SAMPLE RESULTS** 

08/07/17 11:30

Lab ID: Client ID: L1727347-04

FILTER-F-5

Sample Location:

BARNSTABLE, MA

Matrix: Dw Date Collected:

Date Received: Field Prep:

08/07/17

Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Man	sfield Lab										
Iron, Total	ND		mg/l	0.050		1	08/08/17 10:1	5 08/10/17 15:17	EPA 3005A	19,200.7	PS
Manganese, Total	0.058		mg/l	0.010		1	08/08/17 10:1	5 08/10/17 15:17	EPA 3005A	19,200.7	PS



Project Name: MAHER WELL PILOT Lab Number: L1727347

Project Number: 20107 Report Date: 08/23/17

# Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfie	eld Lab for sample(s):	01-04 B	atch: W	G10298	44-1				
Iron, Total	ND	mg/l	0.050		1	08/08/17 10:15	08/10/17 12:37	19,200.7	PS
Manganese, Total	ND	mg/l	0.010		1	08/08/17 10:15	08/10/17 12:37	19,200.7	PS

**Prep Information** 

Digestion Method: EPA 3005A



**Project Name:** MAHER WELL PILOT Lab Number:

L1727347

**Project Number:** 20107

Report Date:

08/23/17

Parameter	LCS %Recovery Qu	LCSD al %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated san	nple(s): 01-04 Batch: W	G1029844-2					
Iron, Total	111	-		85-115	-		
Manganese, Total	107	-		85-115	-		



#### Matrix Spike Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1727347

**Report Date:** 08/23/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery Qu	Recovery al Limits	RPD Qual	RPD Limits
Total Metals - Mansfield Lab As	ssociated sam	ple(s): 01-04	QC Bat	tch ID: WG1029	9844-3	QC Sam	ple: L1727176-02	Client ID: MS	Sample	
Iron, Total	0.863	1	1.99	113		-	-	75-125	-	20
Manganese, Total	0.129	0.5	0.662	107		-	-	75-125	-	20
Total Metals - Mansfield Lab As	ssociated sam	ple(s): 01-04	QC Bat	tch ID: WG1029	9844-7	QC Sam	ple: L1727337-01	Client ID: MS	Sample	
Iron, Total	ND	1	1.16	116		-	-	75-125	-	20
Manganese, Total	ND	0.5	0.555	111		-	-	75-125	-	20

## INORGANICS & MISCELLANEOUS



Project Name: MAHER WELL PILOT Lab Number: L1727347

Project Number: 20107 Report Date: 08/23/17

**SAMPLE RESULTS** 

Lab ID: L1727347-01

Client ID: RAW-5

Sample Location: BARNSTABLE, MA

Matrix: Dw

Date Collected: 08/07/17 11:30

Date Received: 08/07/17

Field Prep: Not Specified

Parameter	Result Q	ualifier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	· Westborough Lab								
Turbidity	0.22	NTU	0.20		1	-	08/07/17 23:13	44,180.1	JC
Alkalinity, Total	15.2	mg CaCO3/L	2.00	NA	1	-	08/08/17 09:02	121,2320B	BR
pH (H)	6.0	SU	-	NA	1	-	08/08/17 02:27	121,4500H+-B	VB



L1727347

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 08/23/17

Dlank Analysis

Lab Number:

Method Blank Analysis Batch Quality Control

Parameter	Result Qu	ualifier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry	- Westborough Lab	for sample(s): 01	Batch:	WG10	)29718-1				
Turbidity	ND	NTU	0.20		1	-	08/07/17 23:13	44,180.1	JC
General Chemistry	- Westborough Lab	for sample(s): 01	Batch:	WG10	)29847-1				
Alkalinity, Total	ND	mg CaCO3/L	2.00	NA	1	-	08/08/17 09:02	121,2320B	BR



# Lab Control Sample Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

**Project Number:** 20107

Lab Number: L1727347

**Report Date:** 08/23/17

Parameter	LCS %Recovery Qua	LCSD al %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab	Associated sample(s): 01	Batch: WG1029718-2	2				
Turbidity	100	-		90-110	-		
General Chemistry - Westborough Lab	Associated sample(s): 01	Batch: WG1029743-	1				
рН	100	-		99-101	-		5
General Chemistry - Westborough Lab	Associated sample(s): 01	Batch: WG1029847-2	2				
Alkalinity, Total	105	-		90-110	-		10

# Matrix Spike Analysis Batch Quality Control

**Project Name:** MAHER WELL PILOT

**Project Number:** 20107 Lab Number:

L1727347

Report Date:

08/23/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual Found	MSD %Recovery Qua	Recovery al Limits	RPD Q	RPD <sub>ual</sub> Limits
General Chemistry - Westborou	gh Lab Asso	ciated samp	le(s): 01	QC Batch ID: V	VG1029847-4	QC Sample: L17271	73-01 Client	ID: MS Sa	ample
Alkalinity, Total	105	100	205	100	-	-	86-116	-	10



L1727347

# Lab Duplicate Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

**Project Number:** 20107

Quality Control Lab Number:

**Report Date:** 08/23/17

Parameter	Native S	ample	Duplicate Sam	ple Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab	Associated sample(s): 01	QC Batch ID:	WG1029718-3	QC Sample: L172	27347-01	Client ID:	RAW-5
Turbidity	0.22	2	0.22	NTU	0		13
General Chemistry - Westborough Lab	Associated sample(s): 01	QC Batch ID:	WG1029743-2	QC Sample: L172	27253-01	Client ID:	DUP Sample
pH	7.4		7.3	SU	1		5
General Chemistry - Westborough Lab	Associated sample(s): 01	QC Batch ID:	WG1029847-3	QC Sample: L172	27173-01	Client ID:	DUP Sample
Alkalinity, Total	105	5	103	mg CaCO3/L	2		10



Serial\_No:08231715:30

Lab Number: L1727347

Report Date: 08/23/17

Project Name: MAHER WELL PILOT

Project Number: 20107

### Sample Receipt and Container Information

Were project specific reporting limits specified?

YES

**Cooler Information** 

Cooler Custody Seal

A Absent B Absent

Container Info	ormation		Initial		Temp		Frozen			
Container ID	Container Type	Cooler	рН	рН	deg C	Pres	Seal	Date/Time	Analysis(*)	
L1727347-01A	Plastic 250ml unpreserved/No Headspace	В	NA		12.8	Υ	Absent		ALK-T-2320(14),TURB-180(2),PH-4500(.01)	
L1727347-01B	Plastic 120ml Other preserved (sub-lab)	В	7	7	12.8	Υ	Absent		SUB-BROMATE(0)	
L1727347-01C	Plastic 120ml HNO3 preserved	В	<2	<2	12.8	Υ	Absent		FE-UI(180),MN-UI(180)	
L1727347-01D	Amber 500ml NaSulfite/NaHSO4 preserved	В	7	7	12.8	N	Absent		A2-14DIOXANE-522(28)	
L1727347-01E	Amber 500ml NaSulfite/NaHSO4 preserved	В	7	7	12.8	N	Absent		A2-14DIOXANE-522(28)	
L1727347-01F	Plastic 250ml Trizma preserved	В	NA		12.8	Υ	Absent		A2-537-PFOA/PFOS(14)	
L1727347-01G	Plastic 250ml Trizma preserved	В	NA		12.8	Υ	Absent		A2-537-PFOA/PFOS(14)	
L1727347-01H	Plastic 250ml Trizma preserved	В	NA		12.8	Υ	Absent		A2-537-PFOA/PFOS(14)	
L1727347-02A	Plastic 120ml Other preserved (sub-lab)	В	7	7	12.8	Υ	Absent		SUB-BROMATE(0)	
L1727347-02B	Plastic 120ml HNO3 preserved	В	<2	<2	12.8	Υ	Absent		FE-UI(180),MN-UI(180)	
L1727347-02C	Amber 500ml NaSulfite/NaHSO4 preserved	В	7	7	12.8	N	Absent		A2-14DIOXANE-522(28)	
L1727347-02D	Amber 500ml NaSulfite/NaHSO4 preserved	В	7	7	12.8	N	Absent		A2-14DIOXANE-522(28)	
L1727347-02E	Plastic 250ml Trizma preserved	В	NA		12.8	Υ	Absent		A2-537-PFOA/PFOS(14)	
L1727347-02F	Plastic 250ml Trizma preserved	В	NA		12.8	Υ	Absent		A2-537-PFOA/PFOS(14)	
L1727347-02G	Plastic 250ml Trizma preserved	В	NA		12.8	Υ	Absent		A2-537-PFOA/PFOS(14)	
L1727347-03A	Plastic 120ml Other preserved (sub-lab)	В	7	7	12.8	Υ	Absent		SUB-BROMATE(0)	
L1727347-03B	Plastic 120ml HNO3 preserved	В	<2	<2	12.8	Υ	Absent		FE-UI(180),MN-UI(180)	
L1727347-03C	Amber 500ml NaSulfite/NaHSO4 preserved	В	7	7	12.8	N	Absent		A2-14DIOXANE-522(28)	
L1727347-03D	Amber 500ml NaSulfite/NaHSO4 preserved	В	7	7	12.8	N	Absent		A2-14DIOXANE-522(28)	
L1727347-03E	Plastic 250ml Trizma preserved	В	NA		12.8	Υ	Absent		A2-537-PFOA/PFOS(14)	
L1727347-03F	Plastic 250ml Trizma preserved	В	NA		12.8	Υ	Absent		A2-537-PFOA/PFOS(14)	
L1727347-03G	Plastic 250ml Trizma preserved	В	NA		12.8	Υ	Absent		A2-537-PFOA/PFOS(14)	



Serial\_No:08231715:30

Lab Number: L1727347

Report Date: 08/23/17

**Project Name:** MAHER WELL PILOT

Project Number: 20107

Container Info	rmation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	pН	рН	deg C	Pres	Seal	Date/Time	Analysis(*)
L1727347-04A	Plastic 120ml Other preserved (sub-lab)	В	7	7	12.8	Υ	Absent		SUB-BROMATE(0)
L1727347-04B	Plastic 120ml HNO3 preserved	В	<2	<2	12.8	Υ	Absent		FE-UI(180),MN-UI(180)
L1727347-04C	Amber 500ml NaSulfite/NaHSO4 preserved	В	7	7	12.8	Ν	Absent		A2-14DIOXANE-522(28)
L1727347-04D	Amber 500ml NaSulfite/NaHSO4 preserved	В	7	7	12.8	N	Absent		A2-14DIOXANE-522(28)
L1727347-04E	Plastic 250ml Trizma preserved	В	NA		12.8	Υ	Absent		A2-537-PFOA/PFOS(14)
L1727347-04F	Plastic 250ml Trizma preserved	В	NA		12.8	Υ	Absent		A2-537-PFOA/PFOS(14)
L1727347-04G	Plastic 250ml Trizma preserved	В	NA		12.8	Υ	Absent		A2-537-PFOA/PFOS(14)
L1727347-05A	Plastic 250ml Trizma preserved	Α	NA		11.2	Υ	Absent		A2-537-PFOA/PFOS(14)



Project Name: MAHER WELL PILOT Lab Number: L1727347

Project Number: 20107 Report Date: 08/23/17

#### **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

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**

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

#### Terms

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.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

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.

#### 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

Report Format: Data Usability Report



Project Name:MAHER WELL PILOTLab Number:L1727347Project Number:20107Report Date:08/23/17

#### Data Qualifiers

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

- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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: MAHER WELL PILOT Lab Number: L1727347

Project Number: 20107 Report Date: 08/23/17

#### REFERENCES

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

- Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.
- Determination of 1,4-Dioxane in Drinking Water by Solid Phase Extraction (SPE) and Gas Chromatography/Mass Spectrometry (GC/MS) with Selected Ion Monitoring (SIM). EPA Method 522, EPA/600/R-08/101. Version 1.0, September 2008.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.
- Determination of Selected Perfluorintated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537, EPA/600/R-08/092. Version 1.1, September 2009.

#### **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.



Serial\_No:08231715:30

Alpha Analytical, Inc.
Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

\_ ID No.:**17873** Revision 10

Published Date: 1/16/2017 11:00:05 AM

Page 1 of 1

#### **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, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; Azobenzene;

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-Colilert-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 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-Colilert-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.

Document Type: Form Pre-Qualtrax Document ID: 08-113

Time						
ALPHA	CHAIN OF	CUSTODY	PAGEOF	Date Rec'd in Lab: 8/	רוור	ALPHA Job #: 61727347
8 Walkup Drive	e 320 Forbes Blvd	Project Information		Report Information - D	ata Deliverables	Billing Information
Westboro, MA Tel: 508-898-		Project Name: Mak	er Well Pilot	□ ADEx □ EMA	JL	☐ Same as Client info PO #:
Client Informati	on	Project Location:	instable, MA	Regulatory Requireme	nts & Project In	oformation Requirements
Client: Blu	elect. Inc.	Project #: 201	107	☐ Yes ☐ No MA MCP Anal	ytical Methods	☐ Yes ☐ No CT RCP Analytical Methods (Required for MCP Inorganics)
Address: 57	Dresser Hill Al F	Project Manager:	h G . H.	☐ Yes ☐ No GW1 Standard	ds (Info Required for M	etals & EPH with Targets)
Charle	n, ma 01507	ALPHA Quote #:	10/0/109	☐ Yes ☐ No NPDES RGP ☐ Other State /Fed Program	m	Criteria
Phone: 774 -		Turn-Around Time				
Email: 29/01/0	in objudect water.	□ Standard □ RU	SH (only confirmed if pre-approved!)	S C C C C C C C C C C C C C C C C C C C	U PCB C PEST  TPH: COulant Only C Fingerprint	
	Cov	Date Due:	ОТТ (ону сыпитес и pre-approved)	MLYSIK D 524.2 AH MCP 14 RCRA8	Range Pange	
Additional	Project Information:	Date Duc.		ANALYSIS 624 DSA.2 D PAH 3 DINCP 14 DI	argets C Range argets C Ringer C Ringer Print	SAMPLE INFO T
			•	P P P P P P P P P P P P P P P P P P P		Filtration   Field   #
				D 8260 D 624  D 4BN  D ABN  D MCP 13  C D R CRAS  R ANGES & T.	PESY A	76 /V =/ 18 / / G Lab to do
				D 8260 D ABN S: D MC Ranges	Rang Oual	Preservation Lab to do
ALPHA Lab ID (Lab Use Only)	Sample ID	Collection	- Outriple	VOC. D8260 D624  SVOC. DABN  METALS. DMCP 13  EPH. DRanges & T.	PPH: DRanges & Targ DPCB DPEST  TPH: DQuant Only C	Lab to do
	2	111	Time Matrix Initials			Sample Comments S
27347-01	Raw-5	8/7/17 113	20 DW AM	<u> </u>	XX	X X X 8
50-	Trojan -5				X	X X X 7
-03	Filter E - 5				X	X X X 7
704	FITER F-5				X	XXX 7
-05	Field Blank		1 1 1			X
Container Type	Preservative					
P= Plastic A≃ Amber glass V= Vial	A= None B= HCI		Container Type			
G= Glass B≈ Bacteria cup	C= HNO <sub>3</sub> D= H <sub>2</sub> SO <sub>4</sub> E= NaOH	Polingwished D.	Preservative			
C= Cube O= Other E= Encore	F= MeOH G= NaHSO4 H = Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Relinquished By:	Date/Time	Received By:	Date/Ti	All samples submitted are subject to
D= BOD Bottle	I= Ascorbic Acid J = NH₄Cl	0	8/7/17 18:17	un ma	8/7/17	All samples submitted are subject to Alpha's Terms and Conditions.  See reverse side.
Page 45 of 53	K≂ Zn Acetate O= Other					FORM NO. 01-01 (rev. 12-Mar-2012)

SUB UPS: Eurofins, IN

CHAIN OF CUSTODY PAGE 1 OF 1					1	Date Rec'd in Lab:						ALPHA Job #: L1727347							
<b>ALPH</b>	TICAL	Project Infor	mation			Re	port Ir	nform	nation	Data	Deli	veral	oles	Bill	ing Ir	ıform	ation		
Westborough, MA	Mansfield, MA	Project Name:					FAX			□ E				Same as Client info PO #:			PO #:		
	TEL: 508-822-9300 FAX: 508-822-3288	Froject Name.					ADEx					eliverat				ref contact			
Client Informati		Project Locatio	n: MA				gulato e/Fed P			ement	s/Re	port l	_imits	Crite	rin.				
Client: Alpha Analy	rtical Lab	Project #:				Stat	en eu r	rogram						Citte	illa	***			
Address: 8 Walkup	Drive	Project Manage	er: Ethan Le	ighton		-				E CEF	1							DENCE PROTOC	ols
Westborough, Ma	01581	ALPHA Quote	<b>#</b> :			] <del>-</del> -			□ No				nalytica			_		ls) Required?	
Phone: 508-898-92	220	Turn-Around	Time				ALYS				Ale	CIRC	r (Nea	SUIIADI	e Comi	uence	Protocc	is) Required?	Ţ
Fax:				Rush (ONLY IF P	RE-APPROVED)									1 2 2	T			SAMPLE HANDLING	T T A L
Email: subreports@	Dalphalab.com				and top the design of the same security and the													Filtration  Done	Ê
	been Previously analyzed by Alpha	Due Date:	Time:															☐ Not Needed☐ Lab to do	#
Other Project Sp	ecific Requirements/Comments	/Detection Limi	ts:	All All														Preservation	В О
Please reference A	Ipha Job # L1727347 on this repor	t.																☐ Lab to do	BOTTLES
																		below)	E
ALPHA Lab ID	Sample ID	Coll	ection	Sample	Sampler's	ate													
(Lab Use Only)		Date	Time	Matrix	Initials	Bromate												Sample Specific	
	Total manager in		1 22 22 22						-						ļ	-	1	Comments	
	RAW-5	8/7/17	11 30	DW		X			-										3
	TROJAN-5	8/7/17	11 30	DW	-	X									-	-			3
	FILTER-E-5	8/7/17	11 30	DW		X			-							-			3
	FILTER-F-5	8/7/17	11 30	DW		A								_	-	-	-		3
			-														-		+
					<del> </del>									-			+	4	+
															ļ		-		+
					-												-		₩
			-				$\vdash$										-		+
N EASE ANGLES	OUESTIONS ABOVE					Р			2	_		720							Т
LEASE ANSWER	QUESTIONS ABOVE!			-	ntainer Type	Т				-				_	-	<u> </u>		Please print clearly, legil	
0. 1/0115					Preservative			-	-		_				_	_		and completely. Sample not be logged in and turnaround time clock wi	
The second secon	PROJECT		Reli	nquished By:		Di	ate/Time	)		- 1	Receiv	ed By:				Date/Tir	ne	start until any ambiguitie resolved. All samples	
ORM NO: 01-01(I)	or CT RCP?												-		-			submitted are subject to Alpha's Payment Terms.	
Page 46 of 53	2																		
- r aye 40 01 3								-											



## LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at  $(800)\ 332-4345$  or  $(574)\ 233-4777$ .

This report may not be reproduced, except in full, without written approval from EEA.

Page 47 of 53 Page 1 of 7



## STATE CERTIFICATION LIST

State	Certification	State	Certification
Alabama	40700	Montana	CERT0026
Alaska	IN00035	Nebraska	NE-OS-05-04
Arizona	AZ0432	Nevada	IN00035
Arkansas	IN00035	New Hampshire*	2124
California	2920	New Jersey*	IN598
Colorado	IN035	New Mexico	IN00035
Colorado Radiochemistry	IN035	New York*	11398
Connecticut	PH-0132	North Carolina	18700
Delaware	IN035	North Dakota	R-035
Florida*	E87775	Ohio	87775
Georgia	929	Oklahoma	D9508
Hawaii	IN035	Oregon (Primary AB)*	4074-001
Idaho	IN00035	Pennsylvania*	68-00466
Illinois*	200001	Puerto Rico	IN00035
Illinois Microbiology	17767	Rhode Island	LAO00343
Indiana Chemistry	C-71-01	South Carolina	95005
Indiana Microbiology	M-76-07	South Dakota	IN00035
Iowa	098	Tennessee	TN02973
Kansas*	E-10233	Texas*	T104704187-15-8
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA170006	Utah*	IN00035
Maine	IN00035	Vermont	VT-8775
Maryland	209	Virginia*	460275
Massachusetts	M-IN035	Washington	C837
Michigan	9926	West Virginia	9927 C
Minnesota*	018-999-338	Wisconsin	999766900
Mississippi	IN035	Wyoming	IN035
Missouri	880		

<sup>\*</sup>NELAP/TNI Recognized Accreditation Bodies

Revision date: 05/15/2017

Page 48 of 53 Page 2 of 7



Authorized Signature

#### LABORATORY CASE NARRATIVE

Client: Alpha Analytical Report #: 395104CN

All method QC was within acceptance limits.

Note: This report was amended on 08/23/17 to report results on EEA generic report format, at the request of the client.

Note: This report may not be reproduced, except in full, without written approval from EEA.

Jun Van Huit ASM 08/23/2017

Title

Date Page 1 of 1

Page 49 of 53 Page 3 of 7



110 South Hill Street South Bend, IN 46617 Tel: (574) 233-4777 Fax: (574) 233-8207 1 800 332 4345

## Laboratory Report

Client: Alpha Analytical Report: 395104

Attn: Ethan Leighton Priority: Standard Written

35 Whitney Road Status: Final

Suite 5 PWS ID: Not Supplied

Mahwah, NJ 07430

	Sample Information												
EEA ID#	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time								
3751821	L1727347-1/Raw-5	317.0	08/07/17 11:30	Client	08/09/17 10:00								
3751822	L1727347-2/Trojan-5	317.0	08/07/17 11:30	Client	08/09/17 10:00								
3751823	L1727347-3/Filter-E-5	317.0	08/07/17 11:30	Client	08/09/17 10:00								
3751824	L1727347-4/Filter-F-5	317.0	08/07/17 11:30	Client	08/09/17 10:00								

#### Report Summary

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call James Van Fleit at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from EEA.

Jun Van Kint ASM

08/23/2017

Date

Authorized Signature
Client Name: Alp

Alpha Analytical

Report #: 395104

Page 1 of 3

Page 50 of 53 Page 4 of 7

Title

Serial\_No:08231715:30

Client Name: Alpha Analytical Report #: 395104

Sampling Point: L1727347-1/Raw-5 PWS ID: Not Supplied

	General Chemistry											
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID#			
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L		08/11/17 03:35	3751821			

Sampling Point: L1727347-2/Trojan-5 PWS ID: Not Supplied

	General Chemistry											
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID#			
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L		08/11/17 04:00	3751822			

Sampling Point: L1727347-3/Filter-E-5 PWS ID: Not Supplied

	General Chemistry											
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID#			
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L		08/11/17 04:25	3751823			

Sampling Point: L1727347-4/Filter-F-5 PWS ID: Not Supplied

	General Chemistry										
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID#		
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L		08/11/17 04:50	3751824		

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	۸	!

Client Name: Alpha Analytical Report #: 395104

#### **Lab Definitions**

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

**Internal Standards (IS)** - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

**Laboratory Duplicate (LD)** - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

**Laboratory Method Blank (LMB)** / **Laboratory Reagent Blank (LRB)** - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

SUB UPS: Eurofins, IN CHAIN OF CUSTODY CONTROL CHAIN OF CUSTODY
Project Name:
Project Location: MA
Project #: Project Manager: Ethan Leighton
ALPHA Quote #:
Turn-Around Time
Standard
Due Date:
otion Limite.
Other Project Specific Requirements/Confinents/Detection Limits. Please reference Alpha Job # L1727347 on this report.
Collection Date Time
8/7/17 11.30
8/7/17 11 30
8/7/17 11.30
8/7/17 1130
,
5



#### ANALYTICAL REPORT

Lab Number: L1728130

Client: Blueleaf Incorporated

57 Dresser Hill Road Charlton, MA 01507

ATTN: Erik Grotton
Phone: (508) 248-7094

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 08/28/17

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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



Project Name: MAHER WELL PILOT

Project Number: 20107

 Lab Number:
 L1728130

 Report Date:
 08/28/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1728130-01	RAW-6	DW	BARNSTABLE, MA	08/11/17 09:00	08/11/17
L1728130-02	TROJAN-6	DW	BARNSTABLE, MA	08/11/17 09:00	08/11/17
L1728130-03	FILTER E-6	DW	BARNSTABLE, MA	08/11/17 09:00	08/11/17
L1728130-04	FILTER F-6	DW	BARNSTABLE, MA	08/11/17 09:00	08/11/17
L1728130-05	FIELD BLANK	DW	BARNSTABLE, MA	08/11/17 09:00	08/11/17



L1728130

Lab Number:

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 08/28/17

#### **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.	



L1728130

Lab Number:

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 08/28/17

#### **Case Narrative (continued)**

#### Report Submission

The analysis of Bromate was subcontracted. A copy of the laboratory report is included as an addendum.

Please note: This data is only available in PDF format and is not available on Data Merger.

#### Perfluorinated Alkyl Acids

The WG1034331-2/-3 LCS/LCSD recoveries, associated with L1728130-01 through -05, were outside the acceptance criteria for individual target compounds; however, re-analysis achieved similar results. The results of the re-analysis are reported; however, all results are considered to have a potentially high bias for perfluorooctanoic acid (pfoa) (134%/150%) and perfluorooctanesulfonic acid (pfos) (LCSD at 142%). The WG1034331-5 MS recovery, performed on L1728130-02, is outside the acceptance criteria for perfluorooctanoic acid (pfoa) (133%).

The surrogate recovery for the WG1034331-4 Laboratory Duplicate, performed on L1728130-01, is outside the acceptance criteria for perfluoro-n-[1,2-13c2]decanoic acid (13c-pfda) (133%). The native sample has acceptable surrogate recoveries, and the duplicate RPDs are within method criteria; therefore, no further action was taken.

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.

Michelle M. Morris

Authorized Signature:

Title: Technical Director/Representative

Date: 08/28/17



## **ORGANICS**



## **SEMIVOLATILES**



**Project Name:** Lab Number: MAHER WELL PILOT L1728130

**Project Number:** Report Date: 20107 08/28/17

**SAMPLE RESULTS** 

WR

Lab ID: Date Collected: 08/11/17 09:00 L1728130-01

Client ID: Date Received: RAW-6 08/11/17 Sample Location: Field Prep: BARNSTABLE, MA Not Specified

Extraction Method: EPA 522

Matrix: Dw Extraction Date: 08/15/17 10:00 Analytical Method: 120,522

Analytical Date: 08/15/17 15:59

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.661		ug/l	0.147		1
Surrogate			% Recovery	Qualifier		eptance riteria
1,4-Dioxane-d8			106			70-130



Analyst:

Project Name: MAHER WELL PILOT Lab Number: L1728130

Project Number: 20107 Report Date: 08/28/17

SAMPLE RESULTS

Lab ID: L1728130-01 Date Collected: 08/11/17 09:00

Client ID: RAW-6 Date Received: 08/11/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method: EPA 537

Matrix: Dw Extraction Date: 08/22/17 18:00 Analytical Method: 122,537

Analyst: AR

08/25/17 09:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor			
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab									
Perfluorooctanoic Acid (PFOA)	21.3		ng/l	1.72		1			
Perfluorooctanesulfonic Acid (PFOS)	93.4		ng/l	1.72		1			

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	109		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	118		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	105		70-130	



Project Name: MAHER WELL PILOT Lab Number: L1728130

Project Number: 20107 Report Date: 08/28/17

SAMPLE RESULTS

Lab ID: Date Collected: 08/11/17 09:00

Client ID: TROJAN-6 Date Received: 08/11/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method:EPA 522

Matrix: Dw Extraction Date: 08/15/17 10:00
Analytical Method: 120,522

Analytical Date: 08/15/17 16:21
Analyst: WR

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield	Lab					
1,4-Dioxane	ND		ug/l	0.144		1
Surrogate		9	% Recovery	Qualifier		eptance riteria
1.4-Dioxane-d8			101			70-130



Project Name: MAHER WELL PILOT Lab Number: L1728130

Project Number: 20107 Report Date: 08/28/17

SAMPLE RESULTS

08/25/17 09:51

Lab ID: Date Collected: 08/11/17 09:00

Client ID: TROJAN-6 Date Received: 08/11/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method:EPA 537

Matrix: Dw Extraction Date: 08/22/17 18:00 Analytical Method: 122,537

Analyst: AR

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor			
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab									
Perfluorooctanoic Acid (PFOA)	21.6		ng/l	1.72		1			
Perfluorooctanesulfonic Acid (PFOS)	99.3		ng/l	1.72		1			

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	104		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	115		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	109		70-130	



Project Name: MAHER WELL PILOT Lab Number: L1728130

Project Number: 20107 Report Date: 08/28/17

SAMPLE RESULTS

08/15/17 16:44

Lab ID: L1728130-03 Date Collected: 08/11/17 09:00

Client ID: FILTER E-6 Date Received: 08/11/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method:EPA 522

Matrix: Dw Extraction Date: 08/15/17 10:00

Analytical Method: 120,522

Analyst: WR

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.411		ug/l	0.144		1
Surrogate			% Recovery	Qualifier		eptance riteria
1,4-Dioxane-d8			101			70-130



Project Name: MAHER WELL PILOT Lab Number: L1728130

Project Number: 20107 Report Date: 08/28/17

SAMPLE RESULTS

08/25/17 10:09

Lab ID: L1728130-03 Date Collected: 08/11/17 09:00

Client ID: FILTER E-6 Date Received: 08/11/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method:EPA 537

Matrix: Dw Extraction Date: 08/22/17 18:

Matrix: Dw Extraction Date: 08/22/17 18:00
Analytical Method: 122,537

Analyst: AR

Parameter	Result Qualifier		Units	RL	MDL	Dilution Factor				
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab										
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.72		1				
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.72		1				

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	103		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	112		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	95		70-130



**Project Name:** Lab Number: MAHER WELL PILOT L1728130

**Project Number:** Report Date: 20107 08/28/17

**SAMPLE RESULTS** 

Lab ID: L1728130-04 Date Collected: 08/11/17 09:00

Client ID: Date Received: FILTER F-6 08/11/17 Sample Location: Field Prep: BARNSTABLE, MA Not Specified

Extraction Method: EPA 522 Dw Extraction Date: 08/15/17 10:00

Matrix: Analytical Method: 120,522

Analytical Date: 08/16/17 11:52

Analyst: WR

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.416		ug/l	0.144		1
Surrogate			% Recovery	Qualifier		eptance riteria
1,4-Dioxane-d8			102			70-130



Project Name: MAHER WELL PILOT Lab Number: L1728130

Project Number: 20107 Report Date: 08/28/17

SAMPLE RESULTS

AR

Lab ID: L1728130-04 Date Collected: 08/11/17 09:00

Client ID: FILTER F-6 Date Received: 08/11/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method: EPA 537

Matrix: Dw Extraction Date: 08/22/17 18:00 Analytical Method: 122,537

Analytical Date: 08/25/17 10:18

Qualifier RL MDL **Dilution Factor Parameter** Result Units Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab Perfluorooctanoic Acid (PFOA) ND 1.67 1 ng/l ND Perfluorooctanesulfonic Acid (PFOS) 1.67 1 ng/l

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	111		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	118		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	93		70-130



Analyst:

Project Name: MAHER WELL PILOT Lab Number: L1728130

Project Number: 20107 Report Date: 08/28/17

SAMPLE RESULTS

5/till EE 1(E55E

AR

 Lab ID:
 L1728130-05
 Date Collected:
 08/11/17 09:00

 Client ID:
 FIELD BLANK
 Date Received:
 08/11/17

Sample Location: BARNSTABLE, MA Field Prep: Not Specified Extraction Method:EPA 537

Matrix: Dw Extraction Date: 08/22/17 18:00

Analytical Method: 122,537
Analytical Date: 08/25/17 10:27

Parameter	Result Qualif		Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537 - Man	sfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.39		1	
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.39		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	106		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	109		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	102		70-130



Analyst:

L1728130

Lab Number:

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 08/28/17

Method Blank Analysis Batch Quality Control

Analytical Method: 120,522 Extraction Method: EPA 522

Analytical Date: 08/15/17 11:23 Extraction Date: 08/15/17 10:00

Analyst: WR

Parameter	Result	Qualifier	Units	R	L !	MDL
1,4 Dioxane by EPA 522 - Mansfield	d Lab for s	ample(s): (	01-04	Batch: V	WG1032071	-1
1,4-Dioxane	ND		ug/l	0.1	50	

	Acceptance					
Surrogate	%Recovery Qualifi	er Criteria				
1.4-Dioxane-d8	109	70-130				



L1728130

Lab Number:

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 08/28/17

Method Blank Analysis Batch Quality Control

Analytical Method: 122,537 Extraction Method: EPA 537

Analytical Date: 08/25/17 09:23 Extraction Date: 08/22/17 18:00

Analyst: AR

Parameter	Result	Qualifier	Units	RL	MDL	
Perfluorinated Alkyl Acids by EPA	537 - Mansf	ield Lab for	sample(s):	01-05	Batch: WG1034331-1	
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00		
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00		

			Acceptance	
Surrogate	%Recovery	Qualifier	Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	101		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	105		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	90		70-130	



# Lab Control Sample Analysis Batch Quality Control

**Project Name:** MAHER WELL PILOT

**Project Number:** 20107 Lab Number:

L1728130

Report Date:

08/28/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	
1,4 Dioxane by EPA 522 - Mansfield Lab	Associated sample(s	s): 01-04	Batch: WG1032	071-2 WG	31032071-3				
1,4-Dioxane	100		99		70-130	1		30	

Surrogate	LCS	LCSD	Acceptance
	%Recovery Qual	%Recovery Qual	Criteria
1,4-Dioxane-d8	112	109	70-130

## Lab Control Sample Analysis Batch Quality Control

**Project Name:** MAHER WELL PILOT

Lab Number: L1728130

**Project Number:** 20107 Report Date:

Parameter	LCS %Recovery	Qual	LCSD %Recovery %Recovery Qual Limits		RPD	RPD Qual Limits		
Perfluorinated Alkyl Acids by EPA 537 -	Mansfield Lab Assoc	iated sample(	s): 01-05 Bato	ch: WG103	34331-2 WG1034	1331-3		
Perfluorooctanoic Acid (PFOA)	134	Q	150	Q	70-130	11	30	
Perfluorooctanesulfonic Acid (PFOS)	126		142	Q	70-130	12	30	

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	119		117		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	114		121		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	106		106		70-130	



## Matrix Spike Analysis Batch Quality Control

**Project Name:** MAHER WELL PILOT

Project Number: 20107

Lab Number:

L1728130

Report Date:

	Native	MS	MS	MS		MSD	MSD		Recovery		F	RPD
Parameter	Sample	Added	Found 9	%Recovery	Qual	Found	%Recovery	Qual	Limits	RPD	Qual L	imits
1,4 Dioxane by EPA 522 -	- Mansfield Lab	Associated sa	ample(s): 01-04	QC Batch	D: WG10	32071-5	QC Sample: L	.172813	0-02 Clier	nt ID: T	ROJAN-6	
1,4-Dioxane	ND	0.962	0.850	88		-	-		70-130	-		30

	MS	MSD	Acceptance	
Surrogate	% Recovery Qualifier	% Recovery Qualifier	Criteria	
1,4-Dioxane-d8	90		70-130	



# Matrix Spike Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number:

L1728130

Report Date:

	Native	MS	MS	MS		MSD	MSD		Recovery			RPD
Parameter	Sample	Added	Found	%Recovery	Qual	Found	%Recovery	Qual	Limits	RPD	Qual	Limits
Perfluorinated Alkyl Acids by E	PA 537 - Ma	nsfield Lab	Associated s	sample(s): 01-05	QC Ba	tch ID: WG	61034331-5	QC San	nple: L1728	130-02	Client	ID: TROJAN-6
Perfluorooctanoic Acid (PFOA)	21.6	34.5	67.5	133	Q	-	-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	99.3	31.9	134	109		-	-		70-130	-		30

	MS		MS	SD	Acceptance	
Surrogate	% Recovery Q	Qualifier	% Recovery	Qualifier	Criteria	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	102				70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	117				70-130	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	110				70-130	

Lab Duplicate Analysis
Batch Quality Control

Lab Number:

L1728130

Report Date:

08/28/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
1,4 Dioxane by EPA 522 - Mansfield Lab	Associated sample(s): 01-04	QC Batch ID: WG1032071-4	QC Sample	: L172813	0-01 Client	ID: RAW-6
1,4-Dioxane	0.661	0.534	ug/l	21		30

			Acceptance
Surrogate	%Recovery Qualifier	%Recovery Qualifier	Criteria
1,4-Dioxane-d8	106	85	70-130



**Project Name:** 

**Project Number:** 

MAHER WELL PILOT

20107

# Lab Duplicate Analysis Batch Quality Control

MAHER WELL PILOT

Lab Number:

L1728130

**Project Number:** 20107

**Project Name:** 

08/28/17 Report Date:

Parameter	Native Sample	Duplic	ate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537 - Mansfield La RAW-6	b Associated sample(s):	01-05	QC Batch ID:	WG1034331-4	QC Sam	ple: L17281	30-01 Client ID:
Perfluorooctanoic Acid (PFOA)	21.3		23.7	ng/l	11		30
Perfluorooctanesulfonic Acid (PFOS)	93.4		98.4	ng/l	5		30

Surrogate	%Recovery Qual	ifier %Recovery		Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	109	122		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	118	133	Q	70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	105	113		70-130	

### **METALS**



L1728130

Project Name: MAHER WELL PILOT Lab Number:

Project Number: 20107 Report Date: 08/28/17

**SAMPLE RESULTS** 

 Lab ID:
 L1728130-01
 Date Collected:
 08/11/17 09:00

 Client ID:
 RAW-6
 Date Received:
 08/11/17

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab										
Iron, Total	0.057		mg/l	0.050		1	08/14/17 16:30	0 08/15/17 16:09	EPA 3005A	19,200.7	AB
Manganese, Total	0.050		mg/l	0.010		1	08/14/17 16:30	0 08/15/17 16:09	EPA 3005A	19,200.7	AB



L1728130

Project Name: MAHER WELL PILOT Lab Number:

Project Number: 20107 Report Date: 08/28/17

**SAMPLE RESULTS** 

 Lab ID:
 L1728130-02
 Date Collected:
 08/11/17 09:00

 Client ID:
 TROJAN-6
 Date Received:
 08/11/17

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab										
Iron, Total	0.057		mg/l	0.050		1	08/14/17 16:30	08/15/17 16:27	EPA 3005A	19,200.7	AB
Manganese, Total	0.050		mg/l	0.010		1	08/14/17 16:30	08/15/17 16:27	EPA 3005A	19,200.7	AB



L1728130

Project Name: MAHER WELL PILOT Lab Number:

Project Number: 20107 Report Date: 08/28/17

SAMPLE RESULTS

 Lab ID:
 L1728130-03
 Date Collected:
 08/11/17 09:00

 Client ID:
 FILTER E-6
 Date Received:
 08/11/17

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab										
Iron, Total	ND		mg/l	0.050		1	08/14/17 16:30	0 08/15/17 16:32	EPA 3005A	19,200.7	AB
Manganese, Total	0.052		mg/l	0.010		1	08/14/17 16:30	0 08/15/17 16:32	EPA 3005A	19,200.7	AB



Project Name: MAHER WELL PILOT

Lab Number:

L1728130

**Project Number:** 20107

Report Date:

08/28/17

**SAMPLE RESULTS** 

Lab ID: L1728130-04 Client ID: FILTER F-6

Client ID: FILTER F-6
Sample Location: BARNSTABLE, MA

Matrix: Dw

Date Collected:

08/11/17 09:00

Date Received: 08/11/17

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab										
Iron, Total	ND		mg/l	0.050		1	08/14/17 16:3	0 08/15/17 16:37	EPA 3005A	19,200.7	AB
Manganese, Total	0.053		mg/l	0.010		1	08/14/17 16:3	0 08/15/17 16:37	EPA 3005A	19,200.7	AB



**Project Name:** MAHER WELL PILOT **Lab Number:** L1728130

Project Number: 20107 Report Date: 08/28/17

# Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytica Method	l Analyst
Total Metals - Mansf	field Lab for sample(s):	01-04 B	atch: W	G10318	04-1				
Iron, Total	ND	mg/l	0.050		1	08/14/17 16:30	08/15/17 15:32	19,200.7	AB
Manganese, Total	ND	mg/l	0.010		1	08/14/17 16:30	08/15/17 15:32	19,200.7	AB

**Prep Information** 

Digestion Method: EPA 3005A



## Lab Control Sample Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

Lab Number:

L1728130

**Project Number:** 20107

Report Date:

Parameter	LCS %Recovery Qu	LCSD al %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sa	mple(s): 01-04 Batch: W	/G1031804-2					
Iron, Total	109	-		85-115	-		
Manganese, Total	101	-		85-115	-		

### Matrix Spike Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1728130

**Report Date:** 08/28/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery Qu	Recovery ual Limits	RPD Qual	RPD Limits
Total Metals - Mansfield Lab A	ssociated sam	nple(s): 01-04	QC Ba	tch ID: WG103	1804-3	QC Sam	ple: L1728111-01	Client ID: MS	S Sample	
Iron, Total	0.231	1	1.29	106		-	-	75-125	-	20
Manganese, Total	0.035	0.5	0.541	101		-	-	75-125	-	20
Total Metals - Mansfield Lab A	ssociated sam	nple(s): 01-04	QC Ba	tch ID: WG103	1804-7	QC Sam	ple: L1728163-01	Client ID: MS	S Sample	
Iron, Total	0.069	1	1.17	110		-	-	75-125	-	20
Manganese, Total	ND	0.5	0.518	104		-	-	75-125	-	20

# INORGANICS & MISCELLANEOUS



Project Name: MAHER WELL PILOT Lab Number: L1728130

Project Number: 20107 Report Date: 08/28/17

**SAMPLE RESULTS** 

Lab ID: L1728130-01

Client ID: RAW-6

Sample Location: BARNSTABLE, MA

Matrix: Dw

Date Collected: 08/11/17 09:00

Date Received: 08/11/17

Field Prep: Not Specified

Parameter	Result Q	ualifier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	Westborough Lab								
Turbidity	ND	NTU	0.20		1	-	08/12/17 04:33	44,180.1	VB
Alkalinity, Total	14.4	mg CaCO3/L	2.00	NA	1	-	08/12/17 03:30	121,2320B	VB
(H) Hq	6.2	SU	-	NA	1	-	08/12/17 03:05	121,4500H+-B	VB



L1728130

Lab Number:

**Project Name:** MAHER WELL PILOT

Project Number: 20107 Report Date: 08/28/17

Λ

Method	<b>Blank</b>	<b>Analysis</b>
Batch	Quality	Control

Parameter	Result Quali	fier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - \	Westborough Lab for	sample(s): 01	Batch:	WG10	31349-1				
Turbidity	ND	NTU	0.20		1	-	08/12/17 04:33	44,180.1	VB
General Chemistry - \	Westborough Lab for	sample(s): 01	Batch:	WG10	31355-1				
Alkalinity, Total	ND	mg CaCO3/L	2.00	NA	1	-	08/12/17 03:30	121,2320B	VB



## Lab Control Sample Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

**Project Number:** 20107

Lab Number:

L1728130

Report Date:

Parameter	LCS %Recovery Qua	LCSD al %Recovery		covery mits RPD	Qual	RPD Limits
General Chemistry - Westborough Lab	Associated sample(s): 01	Batch: WG1031335-1				
рН	100	-	99	-101 -		5
General Chemistry - Westborough Lab	Associated sample(s): 01	Batch: WG1031349-2				
Turbidity	96	-	90	-110 -		
General Chemistry - Westborough Lab	Associated sample(s): 01	Batch: WG1031355-2				
Alkalinity, Total	106	-	90	-110 -		10

### Matrix Spike Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number:

L1728130

Report Date:

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual Found	MSD %Recovery Qua	Recovery Limits	RPD Qua	RPD Limits
General Chemistry - Westbore	ough Lab Asso	ciated samp	ole(s): 01	QC Batch ID: V	VG1031355-4	QC Sample: L172813	0-01 Client	ID: RAW-6	
Alkalinity, Total	14.4	100	112	98	-	-	86-116	-	10



# Lab Duplicate Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

**Project Number:** 20107

Lab Number: L1728130

Report Date: 08/28/17

Parameter	Native	Sample	Duplicate Sam	ple Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab	Associated sample(s): 0	1 QC Batch ID:	WG1031335-2	QC Sample: L172	28194-01	Client ID:	DUP Sample
рН		6.8	6.8	SU	0		5
General Chemistry - Westborough Lab	Associated sample(s): 0°	1 QC Batch ID:	WG1031349-3	QC Sample: L172	28116-01	Client ID:	DUP Sample
Turbidity		5.4	5.2	NTU	4		13
General Chemistry - Westborough Lab	Associated sample(s): 0	1 QC Batch ID:	WG1031355-3	QC Sample: L172	28130-01	Client ID:	RAW-6
Alkalinity, Total	1	14.4	14.3	mg CaCO3/L	1		10



**Lab Number:** L1728130

Report Date: 08/28/17

Project Name: MAHER WELL PILOT

Project Number: 20107

### Sample Receipt and Container Information

Were project specific reporting limits specified?

**Cooler Information** 

Cooler Custody Seal

A Absent
B Absent

Container Info	Container Information		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	рН	рН	deg C	Pres	Seal	Date/Time	Analysis(*)
L1728130-01A	Plastic 120ml HNO3 preserved	Α	<2	<2	5.3	Υ	Absent		FE-UI(180),MN-UI(180)
L1728130-01B	Plastic 120ml Other preserved (sub-lab)	Α	7	7	5.3	Υ	Absent		SUB-BROMATE(0)
L1728130-01C	Plastic 250ml unpreserved/No Headspace	В	NA		3.5	Υ	Absent		ALK-T-2320(14),TURB-180(2),PH-4500(.01)
L1728130-01D	Plastic 250ml Trizma preserved	Α	NA		5.3	Υ	Absent		A2-537-PFOA/PFOS(14)
L1728130-01E	Plastic 250ml Trizma preserved	Α	NA		5.3	Υ	Absent		A2-537-PFOA/PFOS(14)
L1728130-01F	Plastic 250ml Trizma preserved	Α	NA		5.3	Υ	Absent		A2-537-PFOA/PFOS(14)
L1728130-01G	Amber 500ml NaSulfite/NaHSO4 preserved	Α	<4	<4	5.3	Υ	Absent		A2-14DIOXANE-522(28)
L1728130-01H	Amber 500ml NaSulfite/NaHSO4 preserved	Α	<4	<4	5.3	Υ	Absent		A2-14DIOXANE-522(28)
L1728130-02A	Plastic 120ml HNO3 preserved	Α	<2	<2	5.3	Υ	Absent		FE-UI(180),MN-UI(180)
L1728130-02B	Plastic 120ml Other preserved (sub-lab)	Α	7	7	5.3	Υ	Absent		SUB-BROMATE(0)
L1728130-02D	Plastic 250ml Trizma preserved	Α	NA		5.3	Υ	Absent		A2-537-PFOA/PFOS(14)
L1728130-02E	Plastic 250ml Trizma preserved	Α	NA		5.3	Υ	Absent		A2-537-PFOA/PFOS(14)
L1728130-02F	Plastic 250ml Trizma preserved	Α	NA		5.3	Υ	Absent		A2-537-PFOA/PFOS(14)
L1728130-02G	Amber 500ml NaSulfite/NaHSO4 preserved	Α	<4	<4	5.3	Υ	Absent		A2-14DIOXANE-522(28)
L1728130-02H	Amber 500ml NaSulfite/NaHSO4 preserved	Α	<4	<4	5.3	Υ	Absent		A2-14DIOXANE-522(28)
L1728130-03A	Plastic 120ml HNO3 preserved	Α	<2	<2	5.3	Υ	Absent		FE-UI(180),MN-UI(180)
L1728130-03B	Plastic 120ml Other preserved (sub-lab)	Α	7	7	5.3	Υ	Absent		SUB-BROMATE(0)
L1728130-03D	Plastic 250ml Trizma preserved	Α	NA		5.3	Υ	Absent		A2-537-PFOA/PFOS(14)
L1728130-03E	Plastic 250ml Trizma preserved	Α	NA		5.3	Υ	Absent		A2-537-PFOA/PFOS(14)
L1728130-03F	Plastic 250ml Trizma preserved	Α	NA		5.3	Υ	Absent		A2-537-PFOA/PFOS(14)
L1728130-03G	Amber 500ml NaSulfite/NaHSO4 preserved	Α	<4	<4	5.3	Υ	Absent		A2-14DIOXANE-522(28)
L1728130-03H	Amber 500ml NaSulfite/NaHSO4 preserved	Α	<4	<4	5.3	Υ	Absent		A2-14DIOXANE-522(28)



**Lab Number:** L1728130

Report Date: 08/28/17

Project Name: MAHER WELL PILOT

Project Number: 20107

Container Info	rmation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	pН	pН	deg C	Pres	Seal	Date/Time	Analysis(*)
L1728130-04A	Plastic 120ml HNO3 preserved	Α	<2	<2	5.3	Υ	Absent		FE-UI(180),MN-UI(180)
L1728130-04B	Plastic 120ml Other preserved (sub-lab)	Α	7	7	5.3	Υ	Absent		SUB-BROMATE(0)
L1728130-04D	Plastic 250ml Trizma preserved	Α	NA		5.3	Υ	Absent		A2-537-PFOA/PFOS(14)
L1728130-04E	Plastic 250ml Trizma preserved	Α	NA		5.3	Υ	Absent		A2-537-PFOA/PFOS(14)
L1728130-04F	Plastic 250ml Trizma preserved	Α	NA		5.3	Υ	Absent		A2-537-PFOA/PFOS(14)
L1728130-04G	Amber 500ml NaSulfite/NaHSO4 preserved	Α	<4	<4	5.3	Υ	Absent		A2-14DIOXANE-522(28)
L1728130-04H	Amber 500ml NaSulfite/NaHSO4 preserved	Α	<4	<4	5.3	Υ	Absent		A2-14DIOXANE-522(28)
L1728130-05A	Plastic 250ml Trizma preserved	В	NA		3.5	Υ	Absent		A2-537-PFOA/PFOS(14)



Project Name:MAHER WELL PILOTLab Number:L1728130Project Number:20107Report Date:08/28/17

**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

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**

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

#### Terms

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.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

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.

#### 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

Report Format: Data Usability Report



Project Name:MAHER WELL PILOTLab Number:L1728130Project Number:20107Report Date:08/28/17

#### Data Qualifiers

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

- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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: MAHER WELL PILOT Lab Number: L1728130

Project Number: 20107 Report Date: 08/28/17

#### REFERENCES

- 19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.
- Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.
- Determination of 1,4-Dioxane in Drinking Water by Solid Phase Extraction (SPE) and Gas Chromatography/Mass Spectrometry (GC/MS) with Selected Ion Monitoring (SIM). EPA Method 522, EPA/600/R-08/101. Version 1.0, September 2008.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.
- Determination of Selected Perfluorintated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537, EPA/600/R-08/092. Version 1.1, September 2009.

#### 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

ID No.:17873

Revision 10

Page 1 of 1

Published Date: 1/16/2017 11:00:05 AM

#### **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:** <u>NPW</u>: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; <u>SCM</u>: 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-Colilert-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 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-Colilert-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.

Document Type: Form Pre-Qualtrax Document ID: 08-113

ALPHA	CHAIN O	F CUSTOD	Y PAGE		<u>i</u>	Date Re	c'd in La	b:	3/11	117		ALPH	IA Job #	#: L17281	130
World Class G. mistry	200 5 . 1	Project Information	on			Repor	t Inform	ation - Da	ata Del	iverab	Contract of the last	The second name of	g Inform	The same of the sa	
8 Walkup Drive Westboro, MA 0 Tel: 508-898-92	320 Forbes Blvd 01581 Mansfield, MA 02048 220 Tel: 508-822-9300	Project Name: Mal	10/10/10	1 Pilot	-		×	□ EMA	IL			□ Sam	e as Client	t info PO#:	
Client Informatio	n	Project Location:		1 100	1	Regula	atory Re	quireme	nts &	Proj	ect In	ormat	ion Requ	uirements	
Address: 57 ]	of The. Dresser Hill Rd. MA 01507	Project Location: Project #: Z ( Project Manager: Z ( ALPHA Quote #:	107 ik Gatt	tom	2.7	☐ Yes ☐ ☐ Yes ☐	No Matr No GW <sup>1</sup> No NPC	Standard	equired Is (Info F	on this		Requir	es □ No ed for MCl EPH with T Criteria _	CT RCP Analytical M P Inorganics) 「argets)	lethods
Phone: 774 Z	00 8029	Turn-Around Tim	e				///	15	e / 3	/_/		11	77	/ / /	
The second secon	Oblivelective ter. com- roject Information:	□ Standard □ Date Due:	RUSH (only confir	med if pre-approve	edi)	78260 D 624	METALS: DMCP 13	EPH: DRanges & To.	UPH: DRanges & Targets D Ranges Only	TPH: DQuant Only	JE + MA	fact Turkid it	Distance of the state of the st	SAMPLE Filtration Field Lab to co	do B O T
ALPHA Lab ID (Lab Use Only)	Sample ID	Collec			ampler nitials	\$10°C	METAL	EPH:	D PCE	Her.	作作	M.	品	Sample Comm	ents S
28130 - 01	1701-6	8/11/17	900 7	DW A	RD					X	1 . 1	XX	V	- Cumple Comm	8
	Troign - 6	9/11/1	1	1						X	1	XX	11		7
03	Fil - 6											1,	X		/
	TITEL E-6				1					X		X	X		/_
04	Filter F-6				),					X	7	X	X		7
05	Field Blank	4	V	V	V								X		1
									11						
Container Type	Preservative			Container	r Type										
P= Plastic A= Amber glass V= Vial	A= None B= HCI C= HNO <sub>3</sub>			Preser								+			_
G= Glass B= Bacteria cup C= Cube O= Other E= Encore D= BOD Bottle	D= H <sub>2</sub> SO <sub>4</sub> E= NaOH F= MeOH G= NaHSO <sub>4</sub> H = Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> I= Ascorbic Àcid J = NH <sub>4</sub> CI	Relinquished By:	8/11/17	Date/Tir		gui	Recei	red By:	AIM		Date/T	1000	Alpha's	ples submitted are su Terms and Condition verse side	
Page 44 of 51	K= Zn Acetate O= Other					9							FORM NO	D: 01-01 (rev. 12-Mar-2012)	

SUB UPS: EUROFINS,	SUB	UPS:EUROFINS,I
--------------------	-----	----------------

	CHAIN OF	CUSTO	DY	PAGE 1 OF	1	Date	Rec'e	d in Lab						AL	PHA	Job #	#:L17:	28130	
ΔLPH ANALY	YTICAL	Project Infor	mation			Rej	port	Inforr	nation	Dat	ta De	livera	bles				natior		
estborough, MA	Mansfield, MA	B.: IN				41.0	FAX			1 11	EMAIL						ent info	PO #:	
L: 508-898-9220 X: 508-898-9193	TEL: 508-822-9300 FAX: 508-822-3288	Project Name:					ADEx				Add'i	Delivera	bles						
lient Informat		Project Locatio	n: MA						equire	emer	its/Re	port	Limi	ts					
ient: Alpha Anal	lytical Lab	Project #:				State	e/Fed	Progran	n					Crit	eria				
ldress: 8 Walku	p Drive	Project Manage	er: Ethan Leig	ıhton		МС	P PR	ESU	MPTIV	E CE	RTA	INTY-	CT F	REAS	ONAE	BLE C	ONFI	DENCE PROTOCO	OI.
estborough, Ma	01581	ALPHA Quote				7_0	/es		☐ No		Are	MCP A	Analyti	cal Met	hods R	equired	1?		-/-
one: 508-898-9	0220	Turn-Around	Time					-	☐ No	-	Are	CT RC	P (Re	asonab	le Con	fidence	Protoc	ols) Required?	
x:				ush (ONLY IE P	RE-APPROVED)	ANA	ALYS	515			T	T	Т	Т	1	Т	т-	SAMPLE HANDLING	-
nail: subreports	@alphalab.com			aon (one) ii ii	NE-ALTROVED)													Filtration	3
	e been Previously analyzed by Alpha	Due Date:	Time:															☐ Done ☐ Not Needed	1
	pecific Requirements/Commer	nts/Detection Limit	ts:			4												☐ Lab to do	9
	Alpha Job #L1728130 on this rep																	Preservation ☐ Lab to do	1
																		(Please specify below)	ġ
												28							S
PHA Lab ID	Sample ID	Coll	ection	Sample	Sampler's	"				60	-						1		
Lab Use Only)	oupio ib	Date	Time	Matrix	Initials	BROMATE													
	1		1 1		1	BR												Sample Specific Comments	
	RAW-6	8/11/17	09:00	DW		x													1
	TROJAN-6	8/11/17	09:00	DW		x													1
	FILTER E-6	8/11/17	09:00	DW		х													1
	FILTER F-6	8/11/17	09:00	DW		x													1
																			$\vdash$
																			Г
																			$\vdash$
ASE ANSWER	QUESTIONS ABOVE!			Cor	ntainer Type	А		-	-	-	-	-	-	-	-	1-	-		
				F	Preservative	0		-	-	-	-	-	-	-	-	-	+	Please print clearly, legible and completely. Samples	
YOUR	PROJECT		Reling	uished By:		Date/Tim		9			Receiv	ed By:			<u> </u>	Date/T:		not be logged in and turnaround time clock will	l not
	or CT RCP?	P							-			ou by.			<sup>1</sup>	Date/Tir	116	start until any ambiguities resolved. All samples	are
D: 01-01(I) UL-07)														_				submitted are subject to Alpha's Payment Terms.	
												-							



### LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at  $(800)\ 332-4345$  or  $(574)\ 233-4777$ .

This report may not be reproduced, except in full, without written approval from EEA.

Page 46 of 51 Page 1 of 6



### STATE CERTIFICATION LIST

State	Certification	State	Certification
Alabama	40700	Montana	CERT0026
Alaska	IN00035	Nebraska	NE-OS-05-04
Arizona	AZ0432	Nevada	IN00035
Arkansas	IN00035	New Hampshire*	2124
California	2920	New Jersey*	IN598
Colorado	IN035	New Mexico	IN00035
Colorado Radiochemistry	IN035	New York*	11398
Connecticut	PH-0132	North Carolina	18700
Delaware	IN035	North Dakota	R-035
Florida*	E87775	Ohio	87775
Georgia	929	Oklahoma	D9508
Hawaii	IN035	Oregon (Primary AB)*	4074-001
Idaho	IN00035	Pennsylvania*	68-00466
Illinois*	200001	Puerto Rico	IN00035
Illinois Microbiology	17767	Rhode Island	LAO00343
Indiana Chemistry	C-71-01	South Carolina	95005
Indiana Microbiology	M-76-07	South Dakota	IN00035
Iowa	098	Tennessee	TN02973
Kansas*	E-10233	Texas*	T104704187-15-8
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA170006	Utah*	IN00035
Maine	IN00035	Vermont	VT-8775
Maryland	209	Virginia*	460275
Massachusetts	M-IN035	Washington	C837
Michigan	9926	West Virginia	9927 C
Minnesota*	018-999-338	Wisconsin	999766900
Mississippi	IN035	Wyoming	IN035
Missouri	880		

<sup>\*</sup>NELAP/TNI Recognized Accreditation Bodies

Revision date: 05/15/2017

Page 47 of 51 Page 2 of 6



110 South Hill Street South Bend, IN 46617 Tel: (574) 233-4777 Fax: (574) 233-8207 1 800 332 4345

### Laboratory Report

Client: Alpha Analytical Report: 395883

Attn: Ethan Leighton Priority: Standard Written

35 Whitney Road Status: Final

Suite 5 PWS ID: Not Supplied

Mahwah, NJ 07430

	Sample Information														
EEA ID#	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time										
3759110	L1728130-1/RAW-6	317.0	08/11/17 09:00	Client	08/17/17 09:45										
3759111	L1728130-2/TROJAN-6	317.0	08/11/17 09:00	Client	08/17/17 09:45										
3759112	L1728130-3/FILTER E-6	317.0	08/11/17 09:00	Client	08/17/17 09:45										
3759113	L1728130-4/FILTER F-6	317.0	08/11/17 09:00	Client	08/17/17 09:45										

#### **Report Summary**

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call James Van Fleit at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from EEA.

Jun Van Hit ASM

08/23/2017

Date

Client Name: Alpha Analytical

Report #: 395883

Authorized Signature

Page 1 of 3

Page 48 of 51 Page 3 of 6

Title

Client Name: Alpha Analytical Report #: 395883

Sampling Point: L1728130-1/RAW-6 PWS ID: Not Supplied

			Gener	al Chem	istry				
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID#
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L		08/18/17 07:19	3759110

Sampling Point: L1728130-2/TROJAN-6 PWS ID: Not Supplied

			Gener	al Chem	istry				
Analyte ID #	Analyte	Preparation Date	Analyzed Date	EEA ID#					
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L		08/18/17 07:44	3759111

Sampling Point: L1728130-3/FILTER E-6 PWS ID: Not Supplied

			Gener	al Chem	istry				
Analyte ID #	Analyte	Preparation Date	Analyzed Date	EEA ID#					
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L		08/18/17 08:09	3759112

Sampling Point: L1728130-4/FILTER F-6 PWS ID: Not Supplied

			Gener	al Chem	istry				
Analyte ID #	Analyte	Preparation Date	Analyzed Date	EEA ID#					
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L		08/18/17 08:34	3759113

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	٨	

Client Name: Alpha Analytical Report #: 395883

#### **Lab Definitions**

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

**Internal Standards (IS)** - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

**Laboratory Duplicate (LD)** - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

**Laboratory Fortified Blank (LFB)** / **Laboratory Control Sample (LCS)** - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

**Laboratory Method Blank (LMB)** / **Laboratory Reagent Blank (LRB)** - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

**Laboratory Trip Blank (LTB)** / **Field Reagent Blank (FRB)** - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

**Quality Control Standard (QCS)** / **Second Source Calibration Verification (SSCV)** - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

**Surrogate Standard (SS)** / **Surrogate Analyte (SUR)** - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

	728130		PO#:	5885				MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS	cols) Required?		SAMPLE HANDLING TI		□ Not Needed □ □ Lab to do □			below) E			Sample Specific Comments	1	-	-	-						ulding wheels tong and O	and completely. Samples can not be logged in and	turnaround time clock will not start until any ambiguities are	resolved. All samples submitted are subject to	Alpha's Payment Terms.
)	ALPHA Job #:L1728130	Billing Information	Same as Client info	39 5	)	ria		Are MCP Analytical Methods Beguired?	Are CT RCP (Reasonable Confidence Protocols) Required?																						Date/Time	BER	
	ALF				In Case of	Criteria		REASO	Reasonable															-	Seria	al_ <b>N</b>	10:0	0828	3171 	2:3	4	8-17-17	
		Report Information Data Deliverables		Add'l Deliverables	Regulatory Requirements/Report Limits			MCP Anal	CT RCP (																						Received By:	do	
20		Jata Del	EMAIL	□ Add'l □	ents/Re			CERTA	Are							177-17		Ÿ)													Rece	3	
		ation	_		equiren	-			2 2																							XP	
	Date Rec'd in Lab:	t Inform	~	×	atory R	State/Fed Program		PRESUI		YSIS				-									- 10	100		_		16			Date/Time	5	
	Date Re	Repor	L FAX	□ ADEx	Regul	State/Fe		MCP :	Yes	ANALYSIS							3	ΤΑI	МОЯВ	×	×	×	×						4	0	Date	8/14/	
											RE-APPROVED)							Sampler's	Initials									7	Container Type	Preservative		6	
	PAGE 1 OF 1							hton			Rush (ONLY IF PRE-APPROVED)				Ş			Sample	Matrix	DW	DW	DW	DW						ပိ		quished By:	0	
	DΥ	nation				: MA		Project Manager: Ethan Leighton	£	Time	□ ਔ		Time:	is:	-	9		Collection	Time	00:60	00:60	00:00	00:60								Relinqui	Same	
	JSTO	Project Information		Project Name:		Project Location: MA	Project #:	oject Manage	ALPHA Quote #:	Turn-Around Time	Standard		Due Date:	tection Limit		43		Coll	Date	8/11/17	8/11/17	8/11/17	8/11/17									~	0
	CHAIN OF CUSTODY	Ā		<u> </u>		Pr	P	P	AL	F				s/Comments/De	on this report.			Sample ID		1-08/30-1	3	co	71								-	00	
S,IN	HAII			300	288							E C	y analyzed by	irements	.1728130			Samr	08		9-	E-6	F-6				-		S ABOVE		П.	יר כא	-
ROFIN			AL.	Mansfield, MA TEL: 508-822-9300	FAX: 508-822-3288	_	sal Lab	rive	581	0		ılphalab.cα	sen Previous	cific Requ	ha Job #L					RAW-6	TROJAN-6	FILTER E-6	FILTER F-6						UESTION		DRO	OT CT RCP2	5
BUB UPS:EUROFINS,IN	e 51	of 5	NALY		FAX: 508-898-9193 FA	Client Information	Client: Alpha Analytical Lab	Address: 8 Walkup Drive	Westborough, Ma 01581	Phone: 508-898-9220	Fax:	Email: subreports@alphalab.com	These samples have been Previously analyzed by Alpha	Other Project Specific Requirements/Comments/Detection Limits:	Please reference Alpha Job #L1728130 on this report.			Ol de l AHO IA	(Lab Use Only)	3759110	-)-	11.2	× 13						PLEASE ANSWER QUESTIONS ABOVE!		Z	Me MCP	FORMTR: 01-01(1)



#### ANALYTICAL REPORT

Lab Number: L1729058

Client: Blueleaf Incorporated

57 Dresser Hill Road Charlton, MA 01507

ATTN: Erik Grotton
Phone: (508) 248-7094

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 09/12/17

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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



Project Name: MAHER WELL PILOT

Project Number: 20107

**Lab Number:** L1729058 **Report Date:** 09/12/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1729058-01	RAW-7	DW	BARNSTABLE, MA	08/18/17 09:00	08/18/17
L1729058-02	TROJAN-7	DW	BARNSTABLE, MA	08/18/17 09:00	08/18/17
L1729058-03	FILTER E-7	DW	BARNSTABLE, MA	08/18/17 09:00	08/18/17
L1729058-04	FILTER F-7	DW	BARNSTABLE, MA	08/18/17 09:00	08/18/17
L1729058-05	FIELD BLANK	DW	BARNSTABLE, MA	08/18/17 09:00	08/18/17



L1729058

Lab Number:

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 09/12/17

#### **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.	



L1729058

Lab Number:

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 09/12/17

### **Case Narrative (continued)**

### Report Submission

The analysis of Bromate was subcontracted. A copy of the laboratory report is included as an addendum.

Please note: This data is only available in PDF format and is not available on Data Merger.

### Sample Receipt

The samples were received at the laboratory above the required temperature range. The samples were transported to the laboratory in a cooler with ice and delivered directly from the sampling site.

### Perfluorinated Alkyl Acids

The WG1034748-2/-3 LCS/LCSD recoveries, associated with L1729058-01 through -05, are outside the acceptance criteria for individual target compounds. The results of the associated samples are reported; however, all results are considered to have a potentially high bias for perfluorooctanoic acid (pfoa) (140%/145%) and perfluorooctanesulfonic acid (pfos) (140%/140%).

The WG1034748-5 MS recovery, performed on L1729058-02, is outside the acceptance criteria for perfluorooctanoic acid (pfoa) (135%).

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.

Then finger Kara Lindquist

Authorized Signature:

Title: Technical Director/Representative

Date: 09/12/17



## **ORGANICS**



### **SEMIVOLATILES**



Project Name: MAHER WELL PILOT Lab Number: L1729058

Project Number: 20107 Report Date: 09/12/17

**SAMPLE RESULTS** 

Lab ID: L1729058-01 Date Collected: 08/18/17 09:00

Client ID: RAW-7 Date Received: 08/18/17
Sample Location: RARNSTABLE MA Field Pren: Not Specified

Sample Location: BARNSTABLE, MA Field Prep: Not Specified Extraction Method:EPA 522

Matrix: Dw Extraction Date: 08/23/17 06:00
Analytical Method: 120,522

Analyst: TJ

08/23/17 19:17

Analytical Date:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield La	ab					
1,4-Dioxane	0.518		ug/l	0.144		1
Surrogate			% Recovery	Qualifier		eptance riteria
1.4-Dioxane-d8			94			70-130



L1729058

08/18/17 09:00

**Project Name:** Lab Number: MAHER WELL PILOT

**Project Number:** 20107

**SAMPLE RESULTS** 

Report Date: 09/12/17

Lab ID: L1729058-01 Client ID: RAW-7

Sample Location: BARNSTABLE, MA Date Received: 08/18/17 Field Prep: Not Specified

Extraction Method: EPA 537

Date Collected:

Extraction Date: 08/23/17 15:30

Matrix: Dw

Analytical Method: 122,537

Analytical Date: 08/25/17 11:23

Analyst: AR

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mans	sfield Lab					
Perfluorooctanoic Acid (PFOA)	20.5		ng/l	1.78		1
Perfluorooctanesulfonic Acid (PFOS)	82.3		ng/l	1.78		1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	106		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	117		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	111		70-130	



**Project Name:** Lab Number: MAHER WELL PILOT L1729058

**Project Number:** Report Date: 20107 09/12/17

**SAMPLE RESULTS** 

Lab ID: L1729058-02 Date Collected: 08/18/17 09:00

Client ID: Date Received: 08/18/17 TROJAN-7 Sample Location: Field Prep: BARNSTABLE, MA Not Specified

Extraction Method:EPA 522 Matrix: Dw Extraction Date: 08/23/17 06:00

Analytical Method: 120,522 Analytical Date:

Analyst: TJ

08/23/17 19:39

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.144		1
Surrogate			% Recovery	Qualifier		eptance riteria
1,4-Dioxane-d8			97			70-130



L1729058

08/18/17 09:00

08/18/17

**Project Name:** MAHER WELL PILOT

**Project Number:** 20107

**SAMPLE RESULTS** 

Report Date:

09/12/17

Lab Number:

Date Collected:

Date Received:

Lab ID: L1729058-02 Client ID: TROJAN-7

Sample Location: BARNSTABLE, MA

Field Prep: Not Specified Extraction Method: EPA 537

Matrix: Dw Extraction Date: 08/23/17 15:30

Analytical Method: 122,537

Analytical Date: 08/25/17 11:41

Analyst: AR

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537	7 - Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	22.0		ng/l	1.72		1	
Perfluorooctanesulfonic Acid (PFOS)	87.9		na/l	1.72		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	97		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	105		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	96		70-130



Project Name: MAHER WELL PILOT Lab Number: L1729058

Project Number: 20107 Report Date: 09/12/17

SAMPLE RESULTS

Lab ID: L1729058-03 Date Collected: 08/18/17 09:00

Client ID: FILTER E-7 Date Received: 08/18/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method:EPA 522

Matrix: Dw Extraction Date: 08/23/17 06:00

Matrix: Dw Extraction Date: 0
Analytical Method: 120,522
Analytical Date: 08/23/17 20:02

Analyst: TJ

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield La	b					
1,4-Dioxane	0.204		ug/l	0.147		1
Surrogate			% Recovery	Qualifier		eptance riteria
1,4-Dioxane-d8			98		-	70-130



L1729058

09/12/17

Project Name: MAHER WELL PILOT

L1729058-03

BARNSTABLE, MA

FILTER E-7

**Project Number:** 20107

Lab ID:

Client ID:

Sample Location:

**SAMPLE RESULTS** 

Date Collected: 08/18/17 09:00

Lab Number:

Report Date:

Date Received: 08/18/17
Field Prep: Not Specified

Extraction Method:EPA 537

Extraction Date: 08/23/17 15:30

Matrix: Dw

Analytical Method: 122,537

Analytical Date: 08/25/17 11:59

Analyst: AR

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mans	field Lab					
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.72		1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.72		1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	109		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	122		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	103		70-130



Project Name: MAHER WELL PILOT Lab Number: L1729058

Project Number: 20107 Report Date: 09/12/17

**SAMPLE RESULTS** 

Lab ID: L1729058-04 Date Collected: 08/18/17 09:00

Client ID: FILTER F-7 Date Received: 08/18/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method:EPA 522

Matrix: Dw Extraction Date: 08/23/17 06:00

Analytical Method: 120,522

Analyst: TJ

08/23/17 20:25

Analytical Date:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.209		ug/l	0.144		1
Surrogate			% Recovery	Qualifier		eptance criteria
1,4-Dioxane-d8			95			70-130



L1729058

**Project Name:** Lab Number: MAHER WELL PILOT

**Project Number:** Report Date: 20107 09/12/17

**SAMPLE RESULTS** 

Lab ID: L1729058-04 Date Collected: 08/18/17 09:00

Client ID: Date Received: 08/18/17 FILTER F-7 Sample Location: Field Prep: BARNSTABLE, MA Not Specified

Extraction Method: EPA 537

Matrix: Dw Extraction Date: 08/23/17 15:30 Analytical Method: 122,537

Analytical Date: 08/25/17 12:09

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mans	field Lab					
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.78		1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.78		1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	115		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	127		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	119		70-130	



Analyst:

AR

L1729058

**Project Name:** MAHER WELL PILOT

**Project Number:** 20107

**SAMPLE RESULTS** 

Report Date: 09/12/17

Lab Number:

Lab ID: L1729058-05 Client ID: FIELD BLANK Sample Location:

BARNSTABLE, MA

Matrix: Dw

Analytical Method: 122,537

Analytical Date: 08/25/17 12:18

Analyst: AR Date Collected: 08/18/17 09:00

Date Received: 08/18/17 Field Prep: Not Specified

Extraction Method: EPA 537

Extraction Date: 08/23/17 15:30

Parameter	Result Qualifier Units RL MDL					Dilution Factor			
Perfluorinated Alkyl Acids by EPA 537 - Mansfield Lab									
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.72		1			
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.72		1			

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	105		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	114		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	106		70-130	



L1729058

Lab Number:

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 09/12/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 120,522 Extraction Method: EPA 522

Analytical Date: 08/23/17 06:15 Extraction Date: 08/23/17 06:00

Analyst: TJ

Parameter	Result	Qualifier Units	RL	MDL	
1,4 Dioxane by EPA 522 - M	lansfield Lab for sar	mple(s): 01-04	Batch: WG103	34633-1	
1,4-Dioxane	ND	ug/l	0.150		

	Acce	ptance
Surrogate	%Recovery Qualifier Cri	teria
1.4-Dioxane-d8	104 70	-130



L1729058

Lab Number:

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 09/12/17

Method Blank Analysis Batch Quality Control

Analytical Method: 122,537 Extraction Method: EPA 537

Analytical Date: 08/25/17 11:13 Extraction Date: 08/23/17 15:30

Analyst: AR

Parameter	Result	Qualifier	Units	RL	N	MDL
Perfluorinated Alkyl Acids by EPA 5	37 - Mansfi	eld Lab for	sample(s):	01-05	Batch:	WG1034748-1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00		
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00		

Surrogate	%Recovery	Qualifier	Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	103		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	108		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	108		70-130	



## Lab Control Sample Analysis Batch Quality Control

**Project Name:** MAHER WELL PILOT

Lab Number:

L1729058

**Project Number:** 20107

Report Date: 09/12/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by EPA 522 - Mansfield Lab	Associated sample(s	s): 01-04	Batch: WG10346	33-2 WG	1034633-3			
1,4-Dioxane	92		95		70-130	3		30

Surrogate	LCS	LCSD	Acceptance
	%Recovery Q	Jual %Recovery	Qual Criteria
1,4-Dioxane-d8	107	109	70-130



## Lab Control Sample Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

**Project Number:** 20107

Lab Number:

L1729058

Report Date:

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	RPD Qual Limits	
Perfluorinated Alkyl Acids by EPA 537 - Ma	ansfield Lab Assoc	ciated sample(s	s): 01-05 Bato	ch: WG103	34748-2 WG1034	1748-3		
Perfluorooctanoic Acid (PFOA)	140	Q	145	Q	70-130	4	30	
Perfluorooctanesulfonic Acid (PFOS)	140	Q	140	Q	70-130	0	30	

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	101		103		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA) N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	111 105		110 112		70-130 70-130	



## Matrix Spike Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number:

L1729058

Report Date:

	Native	MS	MS	MS		MSD	MSD		Recovery			RPD
Parameter	Sample	Added	Found	%Recovery	Qual	Found	%Recovery	Qual	Limits	RPD	Qual	Limits
Perfluorinated Alkyl Acids by E	PA 537 - Ma	nsfield Lab	Associated sa	ample(s): 01-05	QC Ba	tch ID: WO	G1034748-5	QC San	nple: L1729	058-02	Client	ID: TROJAN-7
Perfluorooctanoic Acid (PFOA)	22.0	34.5	68.7	135	Q	-	-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	87.9	31.9	129	129		-	-		70-130	-		30

	MS		MS	SD	Acceptance	
Surrogate	% Recovery C	Qualifier	% Recovery	Qualifier	Criteria	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	105				70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	116				70-130	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	103				70-130	

## Lab Duplicate Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

**Project Number:** 20107

Lab Number:

L1729058

Report Date:

Parameter	Native Sample	Duplio	cate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537 - Mansfield La RAW-7	b Associated sample(s):	01-05	QC Batch ID:	WG1034748-4	QC Sam	ple: L17290	58-01 Client ID:
Perfluorooctanoic Acid (PFOA)	20.5		20.3	ng/l	1		30
Perfluorooctanesulfonic Acid (PFOS)	82.3		81.3	ng/l	1		30

			Acceptance
Surrogate	%Recovery Qualit	ier %Recovery Q	ualifier Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	106	109	70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	117	119	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	111	103	70-130

### **METALS**



**Project Name:** Lab Number: MAHER WELL PILOT

L1729058

**Project Number:** 20107 **Report Date:** 09/12/17

**SAMPLE RESULTS** 

Lab ID: Date Collected: L1729058-01 08/18/17 09:00 Client ID: RAW-7 Date Received: 08/18/17

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab										
Iron, Total	0.062		mg/l	0.050		1	08/22/17 10:00	0 08/22/17 22:32	EPA 3005A	19,200.7	PS
Manganese, Total	0.050		mg/l	0.010		1	08/22/17 10:00	0 08/22/17 22:32	EPA 3005A	19,200.7	PS



**Project Name:** MAHER WELL PILOT

**Project Number:** 20107 Lab Number: **Report Date:** 

L1729058

09/12/17

**SAMPLE RESULTS** 

Date Collected:

08/18/17 09:00

Client ID:

Lab ID:

L1729058-02 **TROJAN-7** 

Sample Location:

BARNSTABLE, MA

Matrix:

Dw

Date Received: Field Prep:

08/18/17

Not Specified

Dilution Date Date Prep **Analytical** Method **Factor** Prepared **Analyzed** Method Parameter Result Qualifier Units RL MDL Analyst Total Metals - Mansfield Lab Iron, Total 0.072 1 08/22/17 10:00 08/22/17 22:36 EPA 3005A 19,200.7 mg/l 0.050 PS Manganese, Total 0.051 mg/l 0.010 1 08/22/17 10:00 08/22/17 22:36 EPA 3005A 19,200.7 PS



**Project Name:** MAHER WELL PILOT

**Project Number:** 20107 Lab Number: **Report Date:** 

L1729058

09/12/17

**SAMPLE RESULTS** 

Lab ID: L1729058-03

Client ID: FILTER E-7 BARNSTABLE, MA

Sample Location: Matrix:

Date Collected:

08/18/17 09:00

Date Received: 08/18/17

Field Prep: Not Specified

Dw Analytical Dilution Date Date Prep

Parameter	Result	Qualifier	Units	RL	MDL	Factor	Prepared	Analyzed	Method	Method	Analyst
Total Metals - Mans	sfield Lab										
Iron, Total	ND		mg/l	0.050		1	08/22/17 10:00	0 08/22/17 22:40	EPA 3005A	19,200.7	PS
Manganese, Total	0.052		mg/l	0.010		1	08/22/17 10:00	0 08/22/17 22:40	EPA 3005A	19,200.7	PS



Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: Report Date: L1729058

AMBLE BEOLUTO

09/12/17

**SAMPLE RESULTS** 

Lab ID: L1729058-04 Client ID: FILTER F-7

Sample Location: BARNSTABLE, MA

Matrix: Dw

Date Collected:

08/18/17 09:00

Date Received: 08/18/17

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	field Lab										
Iron, Total	ND		mg/l	0.050		1	08/22/17 10:00	08/22/17 22:56	EPA 3005A	19,200.7	PS
Manganese, Total	0.051		mg/l	0.010		1	08/22/17 10:00	08/22/17 22:56	EPA 3005A	19,200.7	PS



Project Name: MAHER WELL PILOT

Lab Number:

L1729058

Project Number: 20107

Report Date:

09/12/17

# Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfie	eld Lab for sample(s):	01-04 B	atch: W	G10341	49-1				
Iron, Total	ND	mg/l	0.050		1	08/22/17 10:00	08/22/17 21:10	19,200.7	PS
Manganese, Total	ND	mg/l	0.010		1	08/22/17 10:00	08/22/17 21:10	19,200.7	PS

**Prep Information** 

Digestion Method: EPA 3005A



## Lab Control Sample Analysis Batch Quality Control

**Project Name:** MAHER WELL PILOT

**Project Number:** 20107 Lab Number:

L1729058

Report Date:

Parameter	LCS %Recovery (	LCSD Qual %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sam	nple(s): 01-04 Batch:	: WG1034149-2					
Iron, Total	111	-		85-115	-		
Manganese, Total	105	-		85-115	-		



### Matrix Spike Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1729058

**Report Date:** 09/12/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery Qu	Recovery ual Limits	RPD Qual	RPD Limits
Total Metals - Mansfield Lab As	sociated sam	nple(s): 01-04	QC Bat	ch ID: WG1034	4149-3	QC Sam	ple: L1729109-01	Client ID: MS	S Sample	
Iron, Total	ND	1	1.16	116		-	-	75-125	-	20
Manganese, Total	0.010	0.5	0.538	106		-	-	75-125	-	20
Total Metals - Mansfield Lab As	sociated sam	nple(s): 01-04	QC Bat	ch ID: WG1034	4149-7	QC Sam	ple: L1729308-01	Client ID: MS	S Sample	
Iron, Total	8.67	1	9.50	83		-	-	75-125	-	20
Manganese, Total	2.27	0.5	2.72	90		-	-	75-125	-	20

Lab Duplicate Analysis
Batch Quality Control

Lab Number: MAHER WELL PILOT L1729058

09/12/17 **Project Number:** 20107 Report Date:

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual RPD	Limits
Total Metals - Mansfield Lab Associated sample(s): 01-0	QC Batch ID:	WG1034149-8 QC Sample:	L1729308-01	Client ID:	DUP Sample	
Iron, Total	8.67	8.89	mg/l	3		20



**Project Name:** 

## INORGANICS & MISCELLANEOUS



L1729058

Lab Number:

**Project Name:** MAHER WELL PILOT

Project Number: 20107 Report Date: 09/12/17

**SAMPLE RESULTS** 

Lab ID: L1729058-01

RAW-7 Client ID:

Sample Location: BARNSTABLE, MA

Matrix: Dw Date Collected: 08/18/17 09:00

Date Received: 08/18/17

Not Specified Field Prep:

Parameter	Result Qu	ualifier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	Westborough Lab								
Turbidity	0.22	NTU	0.20		1	-	08/19/17 01:09	44,180.1	VB
Alkalinity, Total	13.1	mg CaCO3/L	2.00	NA	1	-	08/19/17 01:05	121,2320B	VB
pH (H)	6.2	SU	-	NA	1	-	08/19/17 08:01	121,4500H+-B	VB



L1729058

Lab Number:

**Project Name:** MAHER WELL PILOT

Project Number: 20107 **Report Date:** 09/12/17

Method Blank Analysis Batch Quality Control

Parameter	Result Qu	ualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry	- Westborough Lab	for sam	ple(s): 01	Batch:	WG10	33535-1				
Turbidity	ND		NTU	0.20		1	-	08/19/17 01:09	44,180.1	VB
General Chemistry	- Westborough Lab	for sam	ple(s): 01	Batch:	WG10	33537-1				
Alkalinity, Total	ND		mg CaCO3/L	2.00	NA	1	-	08/19/17 01:05	121,2320B	VB



## Lab Control Sample Analysis Batch Quality Control

**Project Name:** MAHER WELL PILOT

**Project Number:** 20107

Lab Number:

L1729058

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab As	sociated sample(s)	: 01 E	Batch: WG1033534-					
рН	100		-		99-101	-		5
General Chemistry - Westborough Lab As	sociated sample(s)	: 01 E	Batch: WG1033535-2	2				
Turbidity	99		-		90-110	-		
General Chemistry - Westborough Lab As	sociated sample(s)	: 01 E	Batch: WG1033537-2	2				
Alkalinity, Total	107		-		90-110	-		10

### Matrix Spike Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number:

L1729058

Report Date:

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual Found	MSD %Recovery Qua	Recovery I Limits	RPD Qual	RPD Limits
General Chemistry - Westborou	gh Lab Asso	ciated samp	le(s): 01	QC Batch ID: V	VG1033537-4	QC Sample: L172905	8-01 Client	ID: RAW-7	
Alkalinity, Total	13.1	100	113	100	-	-	86-116	-	10



## Lab Duplicate Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

**Project Number:** 20107

Lab Number:

L1729058

Report Date:

Parameter	Native Sample	Duplicate Sampl	le Units	RPD Qua	RPD Limits
General Chemistry - Westborough Lab Association	ciated sample(s): 01 QC Batch ID:	WG1033534-2 C	QC Sample: L17290	58-01 Client ID:	: RAW-7
рН (Н)	6.2	6.2	SU	0	5
General Chemistry - Westborough Lab Association	ciated sample(s): 01 QC Batch ID:	WG1033535-3 C	QC Sample: L17290	58-01 Client ID:	: RAW-7
Turbidity	0.22	0.20	NTU	10	13
General Chemistry - Westborough Lab Association	ciated sample(s): 01 QC Batch ID:	WG1033537-3 C	QC Sample: L17290	58-01 Client ID:	: RAW-7
Alkalinity, Total	13.1	13.2	mg CaCO3/L	1	10



Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1729058
Report Date: 09/12/17

### Sample Receipt and Container Information

Were project specific reporting limits specified?

YES

**Cooler Information** 

Cooler Custody Seal

A Absent B Absent

Container Information			Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	рH	pН	deg C	Pres	Seal	Date/Time	Analysis(*)
L1729058-01A	Plastic 120ml HNO3 preserved	В	<2	<2	7.8	Υ	Absent		FE-UI(180),MN-UI(180)
L1729058-01B	Plastic 120ml Other preserved (sub-lab)	В	7	7	7.8	Υ	Absent		SUB-BROMATE(0)
L1729058-01C	Plastic 250ml unpreserved/No Headspace	В	NA		7.8	Υ	Absent		ALK-T-2320(14),TURB-180(2),PH-4500(.01)
L1729058-01D	Plastic 250ml Trizma preserved	В	NA		7.8	Υ	Absent		A2-537-PFOA/PFOS(14)
L1729058-01E	Plastic 250ml Trizma preserved	В	NA		7.8	Υ	Absent		A2-537-PFOA/PFOS(14)
L1729058-01F	Plastic 250ml Trizma preserved	В	NA		7.8	Υ	Absent		A2-537-PFOA/PFOS(14)
L1729058-01G	Amber 500ml NaSulfite/NaHSO4 preserved	В	<4	<4	7.8	Υ	Absent		A2-14DIOXANE-522(28)
L1729058-01H	Amber 500ml NaSulfite/NaHSO4 preserved	В	<4	<4	7.8	Υ	Absent		A2-14DIOXANE-522(28)
L1729058-02A	Plastic 120ml HNO3 preserved	В	<2	<2	7.8	Υ	Absent		FE-UI(180),MN-UI(180)
L1729058-02B	Plastic 120ml Other preserved (sub-lab)	В	7	7	7.8	Υ	Absent		SUB-BROMATE(0)
L1729058-02D	Plastic 250ml Trizma preserved	В	NA		7.8	Υ	Absent		A2-537-PFOA/PFOS(14)
L1729058-02E	Plastic 250ml Trizma preserved	В	NA		7.8	Υ	Absent		A2-537-PFOA/PFOS(14)
L1729058-02F	Plastic 250ml Trizma preserved	В	NA		7.8	Υ	Absent		A2-537-PFOA/PFOS(14)
L1729058-02G	Amber 500ml NaSulfite/NaHSO4 preserved	В	<4	<4	7.8	Υ	Absent		A2-14DIOXANE-522(28)
L1729058-02H	Amber 500ml NaSulfite/NaHSO4 preserved	В	<4	<4	7.8	Υ	Absent		A2-14DIOXANE-522(28)
L1729058-03A	Plastic 120ml HNO3 preserved	В	<2	<2	7.8	Υ	Absent		FE-UI(180),MN-UI(180)
L1729058-03B	Plastic 120ml Other preserved (sub-lab)	В	7	7	7.8	Υ	Absent		SUB-BROMATE(0)
L1729058-03D	Plastic 250ml Trizma preserved	В	NA		7.8	Υ	Absent		A2-537-PFOA/PFOS(14)
L1729058-03E	Plastic 250ml Trizma preserved	В	NA		7.8	Υ	Absent		A2-537-PFOA/PFOS(14)
L1729058-03F	Plastic 250ml Trizma preserved	В	NA		7.8	Υ	Absent		A2-537-PFOA/PFOS(14)
L1729058-03G	Amber 500ml NaSulfite/NaHSO4 preserved	В	<4	<4	7.8	Υ	Absent		A2-14DIOXANE-522(28)
L1729058-03H	Amber 500ml NaSulfite/NaHSO4 preserved	В	<4	<4	7.8	Υ	Absent		A2-14DIOXANE-522(28)



**Lab Number:** L1729058

Report Date: 09/12/17

Project Name: MAHER WELL PILOT

Project Number: 20107

Container Information			Initial	Final	Temp			Frozen		
Container ID	Container Type	Cooler	pН	рН	deg C	Pres	Seal	Date/Time	Analysis(*)	
L1729058-04A	Plastic 120ml HNO3 preserved	В	<2	<2	7.8	Υ	Absent		FE-UI(180),MN-UI(180)	
L1729058-04B	Plastic 120ml Other preserved (sub-lab)	В	7	7	7.8	Υ	Absent		SUB-BROMATE(0)	
L1729058-04D	Plastic 250ml Trizma preserved	В	NA		7.8	Υ	Absent		A2-537-PFOA/PFOS(14)	
L1729058-04E	Plastic 250ml Trizma preserved	В	NA		7.8	Υ	Absent		A2-537-PFOA/PFOS(14)	
L1729058-04F	Plastic 250ml Trizma preserved	В	NA		7.8	Υ	Absent		A2-537-PFOA/PFOS(14)	
L1729058-04G	Amber 500ml NaSulfite/NaHSO4 preserved	В	<4	<4	7.8	Υ	Absent		A2-14DIOXANE-522(28)	
L1729058-04H	Amber 500ml NaSulfite/NaHSO4 preserved	В	<4	<4	7.8	Υ	Absent		A2-14DIOXANE-522(28)	
L1729058-05A	Plastic 250ml Trizma preserved	Α	NA		8.9	Υ	Absent		A2-537-PFOA/PFOS(14)	



Project Name: MAHER WELL PILOT Lab Number: L1729058

Project Number: 20107 Report Date: 09/12/17

#### **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

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**

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

#### Terms

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.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

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.

### 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

Report Format: Data Usability Report



Project Name:MAHER WELL PILOTLab Number:L1729058Project Number:20107Report Date:09/12/17

#### Data Qualifiers

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

- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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: MAHER WELL PILOT Lab Number: L1729058

Project Number: 20107 Report Date: 09/12/17

### REFERENCES

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

- Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.
- Determination of 1,4-Dioxane in Drinking Water by Solid Phase Extraction (SPE) and Gas Chromatography/Mass Spectrometry (GC/MS) with Selected Ion Monitoring (SIM). EPA Method 522, EPA/600/R-08/101. Version 1.0, September 2008.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.
- Determination of Selected Perfluorintated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537, EPA/600/R-08/092. Version 1.1, September 2009.

## **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

ID No.:17873

Revision 10

Page 1 of 1

Published Date: 1/16/2017 11:00:05 AM

## **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, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; 4-Ethyltoluene, Azobe

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-Colilert-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-Colilert-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.

Document Type: Form

Pre-Qualtrax Document ID: 08-113

Διрна	CHAIN O	F CUSTO	DY P	PAGE	OF_/	Date Re	ec'd in Lal	o: S	8/18	11:	7	ALPH	A Job#	: L17	72905	8
8 Walkup Drive	e 320 Forbes Blvd	Project Informa				Repor	t Informa	ition - Dat	a Deliv	erable	es	Billing	g Informa	ation		
Westboro, MA Tel: 508-898-9	9220 Tel: 508-822-9300	Project Name: M	aher h	Jell P.	LOT	☐ ADE	x	□ EMAIL	8			⊒ Same	e as Client	info PO	#:	
Client Information	on	Project #:	Sach ST	1:61e	ins						ct Info	ormati	on Requ	irements		
Client: Blue	lect Inc.	Project #: 2	0107	1	VIII	☐ Yes ☐	No MA N	ACP Analyti	cal Meth	ods	DG2 (I	□ Ye	es 🗆 No	CT RCP A	nalytical Method	sk
Address: 57	Dresser Hill Rd.	Project Manager:				☐ Yes □	No GW1	Standards	(Info Re	quired	for Met	tals & E	PH with T	argets)	»)	
	MA 21507	ALPHA Quote #:		61.001			No NPD State /Fed	ES RGP Program					Criteria			
Dhana	200 8029	Turn-Around T	ime				11		1.7		7	//	/ /	77	7	
Email: earotto	in @ bluelectwater.	50					/ /	EPH: DRanges & Targets  UPH: C. A. A. C.	C PCB C PEST		/ /	' /			/	
			RUSH (only o	confirmed if pre-ap	proved!)	ANALYSIS	5/	8 8	Range anges	/ /	rint	_d /	/ / /	/ / /		т
Additional F	Project Information:	Date Due:				ME)	D524.2 PAH	DRCRA8		/ / .	Ngerpri	4	/ 4.	V / 8	SAMPLE INFO	O T
						A 4 D 624	0 0	arget,	arget		/ */	H.	13/13	/ /	Filtration	Ē
							NCP 1	CRA!	S& T	Vino	177	J 5	TA	/ /	☐ Field ☐ Lab to do	#
						C) 8260	DABN S: DMCP	ange	range D	Quant	1 3	13	づけ	1	Preservation	B O T T
ALPHA Lab ID	Sample ID	Co	lection	Sample	Sampler	1/./6	METALS: DMCP 13	EPH: DRanges & Targ		Douant Only OFF	EF	i Pin	7/10		Lab to do	Ť L E
(Lab Use Only)	Gample 1D	Date	Time	Matrix	Initials	3/5	ME ME	14 / 5	D/E	//-	4	7-	712/	Samp	le Comments	S
29088 01	Raw-t	4 181	7 5:00	DW	ARD					X	XX	X	X			8
205	Trojan-7	- Creary								X	X	X	X			7
703	Filter E-7									X	X	X	X			7
24	Filter F-7									X	X		X			7
705	Field Blank			V							-		v			/
	ricia grante									+	-		Λ			
										+	-					
											-	+-1				_
									-	-	-		-			
							-				-					
Contain on Town																
Container Type P= Plastic A= Amber glass	Preservative A= None B= HCI		_	Contair	ner Type											
V= Vial G= Glass B= Bacteria cup	C= HNO <sub>3</sub> D= H <sub>2</sub> SO <sub>4</sub> E= NaOH				servative											
C= Cube O= Other E= Encore	F= MeOH G= NaHSO4	Relinquished By:	1/1/-	Date/	Time	11 / -	Receive			1	ate/Tim	2000	All samo	les submitte	ed are subject t	to
D= BOD Bottle	H = Na₂S₂O₃ I= Ascorbic Acid J = NH₄CI	5	118/17	13.1	)	Ull	~ 0	N		\$ 12	171	35	Alpha's	Terms and (		
Page 43 of 50	K= Zn Acetate O= Other												See reve	orse side. 01-01 (rev. 12-	Mar-2012)	

CHAIN OF CUSTODY  Project Information    Project Information	MA MCP or CT RCP?						- 4 /				-4	0	i e					resolved. All samples submitted are subject to Alpha's Payment Terms	,
CHAIN OF CUSTODY	IS YOUR PROJECT		Reli		Preservative		ate/Tim	e	-	in .	- Receiv	ed By:	-		- [	- Date/Tir	ne	and completely. Sample not be logged in and turnaround time clock w	ies can vill not
CHAIN OF CUSTODY PAGE 1 OF 1  Project Information  In	PLEASE ANSWER QUESTIONS ABOVE!			-				-	-	-	-	-	-	-	-	-	-	Please print clearly, lea	bly
CHAIN OF CUSTODY PAGE 1 OF 1  Project Information  In														<u> </u>					
CHAIN OF CUSTODY PAGE 1 OF 1  Project Information  In																			
CHAIN OF CUSTODY PAGE 1 OF 1  Project Information  In																			$\perp$
CHAIN OF CUSTODY PAGE 1 OF 1  Project Information  In															-				$\perp$
CHAIN OF CUSTODY PAGE 1 OF 1  Project Information  Project Information  Project Information  Project Information  Project Information  Project Name:  Project Name:  Project Manual Project Location: MA  Statewise Program  Client: Alpha Analytical Lab  Project Manager: Ethan Leighton  ANALYSIS  ANALYS	<u> </u>																		
CHAIN OF CUSTODY PAGE 1 OF 1  Project Information Project Informat																			
CHAIN OF CUSTODY  PAGE 1 OF 1  Project Information  Project Information  Project Information  Project Name:  Regulatory Requirements/Report Limits  State-Fed Program  ANALYSIS  ANALYSIS  ANALYSIS  ANALYSIS  ANALYSIS  ANALYSIS  ANALYSIS  ALPHA Lab ID  (Lab to do Preservation   Lab to do Preservat	FILTER F-7	8/18/17	09:00	DW		х													1
CHAIN OF CUSTODY PAGE 1 OF 1    Chair	FILTER E-7	8/18/17	09:00	DW		X													1
CHAIN OF CUSTODY PAGE 1 OF 1    Chair	TROJAN-7	8/18/17	09:00	DW		X													1
CHAIN OF CUSTODY PAGE 1 OF 1  Westborough, MA Mansfleld, MA TEL: 508-888-8220 TEL: 508-822-3288  Client Information Project Location: MA  Client: Alpha Analytical Lab Address: 8 Walkup Drive Westborough, Ma 01581 Phone: 508-898-9220 Turn-Around Time Fax: Phone: 508-898-9220 Turn-Around Time Fax: Client: Standard These samples have been Priviously analyzed by Alpha Due Date: Time:  Other Project Specific Requirements/Comments/Detection Limits: Please reference Alpha Job #L1729058 on this report.  Date Rec'd in Lab: ALPHA Job #:L1729058  Report Information Data Deliverables Billing Information   FAX	RAW-7	8/18/17	09:00	DW		x													1
CHAIN OF CUSTODY  PAGE 1 OF 1  Date Rec'd in Lab:  Report Information  Report Information Data Deliverables  Billing Information  FAX			T	-		BROMATE												Sample Specific Comments	
CHAIN OF CUSTODY  PAGE 1 OF 1  Date Rec'd in Lab:  Report Information  Project Information  Project Name:  Project Name:  Project Name:  Project Location: MA  Tel: 508-898-9220  FAX: 508-898-9133  FAX: 508-898-9133  FAX: 508-898-9134  Project Location: MA  Client: Alpha Analytical Lab  Address: 8 Walkup Drive  Westborough, Ma 01581  ALPHA Job #:L1729058  Report Information Data Deliverables  Billing Information  PO #:  Report Information Data Deliverables  Report Information  FAX: GMAIL  Same as Client info  PO #:  Regulatory Requirements/Report Limits  State/Fed Program  Criteria  MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS  Westborough, Ma 01581  ALPHA Quote #:  Phone: 508-898-9220  Turn-Around Time  Fax:  Standard  Rush (ONLY IF PRE-APPROVED)  Email: subreports@alphalab.com  Due Date:  Time:			ts:															Preservation ☐ Lab to do (Please specify	O T T L E S
CHAIN OF CUSTODY  PAGE 1 OF 1  Project Information  Project Information  Project Name:    FAX		Due Date:	Time:															The state of the s	
CHAIN OF CUSTODY PAGE 1 OF 1  Project Information  Project Information  Project Information  Project Name:  FAX	Email: subreports@alphalab.com	-	_		,													550000000000000000000000000000000000000	Ĺ
CHAIN OF CUSTODY PAGE 1 OF 1  Project Information    Report Information   Data Deliverables   Billing Information	Fax:			Rush (ONLY IF P	RE-APPROVED)	-						Τ	Τ	T					Ī
CHAIN OF CUSTODY  PAGE 1 OF 1  Date Rec'd in Lab:  Report Information  Report Information  Project Information  Project Name:  Project Name:  Project Name:  Project Name:  Project Location: MA  Client Information  Project Location: MA  Client: Alpha Analytical Lab  Project Manager: Ethan Leighton  Project Manager: Ethan Leighton  Manager: Ethan Leighton  Page 1 OF 1  Date Rec'd in Lab:  ALPHA Job #:L1729058  Report Information  PAX	10000 A STREET DESCRIPTION OF THE							- 100	⊔ NO	St-/	Are	CIRC	r (Kea	sonabl	e Confi	idence	Protoco	ois) Required?	Ţ
CHAIN OF CUSTODY  PAGE 1 OF 1  Date Rec'd in Lab:  ALPHA Job #:L1729058  Report Information Data Deliverables Billing Information  FAX				3							0.0	Year- 1500 - J.	- 20					de) De miles 10	
CHAIN OF CUSTODY  PAGE 1 OF 1  Project Information  Project Information  Project Information  Project Name:  ALPHA Job #:L1729058  Report Information Data Deliverables  Billing Information  FAX			er: Ethan I e	ighton		MC	P PR	ESUN	IPTIV	E CE	RTAI	NTY-	CT R	EASC	NAB	LE C	ONFI	DENCE PROTOC	OLS
CHAIN OF CUSTODY  PAGE 1 OF 1  Date Rec'd in Lab:  ALPHA Job #:L1729058  Report Information Data Deliverables  FAX: 508-898-9220  FAX: 508-898-9193  ALPHA Job #:L1729058  Report Information Data Deliverables  FAX: 508-898-9220  FAX: 508-898-9193  FAX: 508-898-9193  FAX: 508-898-9193  CHAIN OF CUSTODY  PAGE 1 OF 1  Date Rec'd in Lab:  ALPHA Job #:L1729058  Report Information Data Deliverables  FAX: 508-898-9193  FAX: 508-898-9193  FAX: 508-898-9193  Regulatory Requirements/Report Limits			n: MA		*	Star	te/Fed i	Program	)					Crite	eria				
CHAIN OF CUSTODY  PAGE 1 OF 1  Date Rec'd in Lab:  Report Information  ALPHA Job #:L1729058  Report Information Data Deliverables  FAX		2000 Mor le er San		-		Re	gulat	ory R	equir	emen	ts/Re	port	Limit	s					1
CHAIN OF CUSTODY  PAGE 1 OF 1  Date Rec'd in Lab:  ALPHA Job #:L1729058  Report Information Data Deliverables  Billing Information	SA CONSISTENCE AND AN ANALYSIS CONTRACT	Project Name:					ADEx				Add'l D	elivera	bles						
CHAIN OF CUSTODY PAGE 1 OF 1  Date Rec'd in Lab:  ALPHA Job #:L1729058	ANALYTICAL	Project Infor	mation				_	IIIOIII	iatioi				nies						
	VIDE'S			PAGE 1 OF	1				ation	Dat	a Dol	ivora	blos						
SUB UPS: Eurofins, IN	CHAIN OF		DY			Dat	e Rec'o	l in Lab						ALI	DLIA	loh t	.1 47	OODEO	
Serial_No:09121714:48	SUB UPS: Eurofins, IN	W!														_			

IS YOUR PROJECT MA MCP or CT RCP?

\_\_Page 44 of 50



## LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at  $(800)\ 332-4345$  or  $(574)\ 233-4777$ .

This report may not be reproduced, except in full, without written approval from EEA.

Page 45 of 50 Page 1 of 6



## **STATE CERTIFICATION LIST**

State	Certification	State	Certification
Alabama	40700	Missouri	880
Alaska	IN00035	Montana	CERT0026
Arizona	AZ0432	Nebraska	NE-OS-05-04
Arkansas	IN00035	Nevada	IN00035
California	2920	New Hampshire*	2124
Colorado	IN035	New Jersey*	IN598
Colorado Radiochemistry	IN035	New Mexico	IN00035
Connecticut	PH-0132	New York*	11398
Delaware	IN035	North Carolina	18700
Florida*	E87775	North Dakota	R-035
Georgia	929	Ohio	87775
Hawaii	IN035	Oklahoma	D9508
Idaho	IN00035	Oregon (Primary AB)*	4074-001
Illinois*	200001	Pennsylvania*	68-00466
Illinois Microbiology	17767	Puerto Rico	IN00035
Illinois Radiochemistry	IN00035	Rhode Island	LAO00343
Indiana Chemistry	C-71-01	South Carolina	95005
Indiana Microbiology	M-76-07	South Dakota	IN00035
Iowa	098	Tennessee	TN02973
Kansas*	E-10233	Texas*	T104704187-15-8
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA170006	Utah*	IN00035
Maine	IN00035	Vermont	VT-8775
Maryland	209	Virginia*	460275
Massachusetts	M-IN035	Washington	C837
Michigan	9926	West Virginia	9927 C
Minnesota*	018-999-338	Wisconsin	999766900
Mississippi	IN035	Wyoming	IN035
EPA	IN00035		

\*NELAP/TNI Recognized Accreditation Bodies

Revision date: 08/28/2017

Page 46 of 50 Page 2 of 6



110 South Hill Street South Bend, IN 46617 Tel: (574) 233-4777 Fax: (574) 233-8207 1 800 332 4345

## Laboratory Report

Client: Alpha Analytical Report: 396213

Attn: Ethan Leighton Priority: Standard Written

35 Whitney Road Status: Final

Suite 5 PWS ID: Not Supplied

Mahwah, NJ 07430

	Sample Information													
EEA ID#	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time									
3762640	L1729058 RAW-7	317.0	08/18/17 09:00	Client	08/22/17 09:45									
3762641	L1729058 TROJAN-7	317.0	08/18/17 09:00	Client	08/22/17 09:45									
3762642	L1729058 FILTER E-7	317.0	08/18/17 09:00	Client	08/22/17 09:45									
3762643	L1729058 FILTER F-7	317.0	08/18/17 09:00	Client	08/22/17 09:45									

## **Report Summary**

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call James Van Fleit at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from EEA.

Jim Van Kuit ASM

09/05/2017

Date

Authorized Signature
Client Name: Alp

Alpha Analytical

Report #: 396213

Page 1 of 3

Page 47 of 50 Page 3 of 6

Title

Client Name: Alpha Analytical Report #: 396213

Sampling Point: L1729058 RAW-7 PWS ID: Not Supplied

	General Chemistry												
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID#				
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L		08/24/17 09:23	3762640				

Sampling Point: L1729058 TROJAN-7 PWS ID: Not Supplied

			Gene	General Chemistry												
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID#							
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L		08/24/17 09:48	3762641							

Sampling Point: L1729058 FILTER E-7 PWS ID: Not Supplied

	General Chemistry												
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID#				
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L		08/25/17 01:44	3762642				

Sampling Point: L1729058 FILTER F-7 PWS ID: Not Supplied

			Gene	ral Chemi	stry				
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID#
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L		08/25/17 02:09	3762643

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	۸	!

Client Name: Alpha Analytical Report #: 396213

### **Lab Definitions**

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

**Internal Standards (IS)** - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

**Laboratory Duplicate (LD)** - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

**Laboratory Method Blank (LMB)** / **Laboratory Reagent Blank (LRB)** - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

346 213

3 101 616	ALPHA Job #:L1729058	Billing Information		Criteria	Oriena	CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS	Are MCP Analytical Methods Required? Are CT RCP (Reasonable Confidence Protocols) Remirred?		SAMPLE HANDLING T	X	□ Not Needed #	Preservation 0	(Please specify E below) S		Sample Specific Comments	1	-		-	Seri	m / to	233 233 233 20091			Date/Time start until any ambiguites are	
396013		Data Deliverables	eliverables	quirements/Report Limits		Ш	☐ No   Are MCP Analytical Methods Required?																		Received By:	
	Date Rec'd in Lab	Report Information	□ ADEx	Regulatory Re	Orace Control	MCP PRES	☐ Yes☐ Yes☐ Yes	ANALYSIS	OVED)				:		вком	×	×	×	×				- Lype	ative o	Date/Time	
	PAGE 1 OF 1					ghton	65		Rush (ONLY IF PRE-APPROVED)					Sample Sampler's	Matrix Initials	DW	DW	DW	DW			2	Container Type	Preservative	Relinquished By:	
	STODY	Project Information	Project Name:	Project Location: MA	ect #:	Project Manager: Ethan Leighton	ALPHA Quote #:	Turn-Around Time	Standard 🔲 R		Date: Time:	ction Limits:		Collection	Date Time	8/18/17 09:00	8/18/17 09:00	8/18/17 09:00	8/18/17 09:00						Relin	
UB UPS: Eurofins, IN	CHAIN OF CUSTODY	Proje	Mansfield, MA TEL: 508-822-9300	PAX: 508-898-9193 FAX: 508-822-5288  Client Information	l Lab			Phone: 508-898-9220	S ⊠	Email: subreports <u>@alphalab.com</u>	☐ These samples have been Previously analyzed by Alpha ☐ Due Date:	Other Project Specific Requirements/Comments/Detection Limits: Please reference Alpha Job #L1729058 on this report.		ALPHA Lab ID Sample ID	(Lab Use Only)	3762,640 RAW-7	TROJAN-7	643 FILTER E-7	FILTER F-7		•		PLEASE ANSWER QUESTIONS ABOVE!		IS YOUR PROJECT	



## ANALYTICAL REPORT

Lab Number: L1729617

Client: Blueleaf Incorporated

57 Dresser Hill Road Charlton, MA 01507

ATTN: Erik Grotton
Phone: (508) 248-7094

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 09/13/17

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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



Project Name: MAHER WELL PILOT

Project Number: 20107

**Lab Number:** L1729617 **Report Date:** 09/13/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1729617-0	1 RAW-8	DW	BARNSTABLE, MA	08/23/17 09:00	08/23/17
L1729617-0	2 TROJAN -8	DW	BARNSTABLE, MA	08/23/17 09:00	08/23/17
L1729617-0	3 FILTER E-8	DW	BARNSTABLE, MA	08/23/17 09:00	08/23/17
L1729617-0	4 FILTER F-8	DW	BARNSTABLE, MA	08/23/17 09:00	08/23/17
L1729617-0	5 FIELD BLANK	DW	BARNSTABLE, MA	08/23/17 09:00	08/23/17



L1729617

Lab Number:

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 09/13/17

## **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.



L1729617

Lab Number:

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 09/13/17

## **Case Narrative (continued)**

Report Submission

The analysis of Bromate was subcontracted. A copy of the laboratory report is included as an addendum.

Please note: This data is only available in PDF format and is not available on Data Merger.

Perfluorinated Alkyl Acids

The WG1036202-3 LCSD recovery, associated with L1729617-01 through -05, is outside the individual acceptance criteria for perfluorooctanesulfonic acid (pfos) (134%). The results of the associated samples are reported.

The WG1036202-5 MS recovery, performed on L1729617-02, is outside the acceptance criteria for perfluorooctanesulfonic acid (pfos) (136%).

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:

Title: Technical Director/Representative Date: 09/13/17

600, Shawow Kelly Stenstrom

## **ORGANICS**



## **SEMIVOLATILES**



Project Name: MAHER WELL PILOT Lab Number: L1729617

Project Number: 20107 Report Date: 09/13/17

SAMPLE RESULTS

Lab ID: Date Collected: 08/23/17 09:00

Client ID: RAW-8 Date Received: 08/23/17

Sample Location: BARNSTABLE, MA Field Prep: Not Specified Extraction Method:EPA 522

Matrix: Dw Extraction Date: 09/05/17 09:30
Analytical Method: 120,522

Analytical Date: 09/06/17 17:28
Analyst: TJ

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab	)					
1,4-Dioxane	0.553		ug/l	0.147		1
Surrogate			% Recovery	Qualifier		eptance iteria
1,4-Dioxane-d8			103		7	70-130

Project Name: MAHER WELL PILOT Lab Number: L1729617

Project Number: 20107 Report Date: 09/13/17

SAMPLE RESULTS

09/12/17 11:31

Lab ID: L1729617-01 Date Collected: 08/23/17 09:00

Client ID: RAW-8 Date Received: 08/23/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method:EPA 537

Matrix: Dw Extraction Date: 08/28/17 15:30 Analytical Method: 122,537

Analyst: AR

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mans	field Lab					
Perfluorooctanoic Acid (PFOA)	17.4		ng/l	1.85		1
Perfluorooctanesulfonic Acid (PFOS)	77.1		ng/l	1.85		1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	113		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	109		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	116		70-130	



Project Name: MAHER WELL PILOT Lab Number: L1729617

Project Number: 20107 Report Date: 09/13/17

SAMPLE RESULTS

09/06/17 18:21

Lab ID: L1729617-02 Date Collected: 08/23/17 09:00

Client ID: TROJAN -8 Date Received: 08/23/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method:EPA 522

Matrix: Dw Extraction Date: 09/05/17 09:30

Analytical Method: 120,522

Analyst: TJ

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab	)					
1,4-Dioxane	ND		ug/l	0.147		1
Surrogate			% Recovery	Qualifier		eptance riteria
1,4-Dioxane-d8			99			70-130



**Project Name:** Lab Number: MAHER WELL PILOT L1729617

**Project Number:** Report Date: 20107 09/13/17

**SAMPLE RESULTS** 

AR

Lab ID: L1729617-02 Date Collected: 08/23/17 09:00

Client ID: Date Received: 08/23/17 TROJAN -8 Sample Location: Field Prep: BARNSTABLE, MA Not Specified

Extraction Method: EPA 537

Matrix: Dw Extraction Date: 08/28/17 15:30 Analytical Method: 122,537

Analytical Date: 09/12/17 11:50

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537 -	Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	20.7		ng/l	1.72		1	
Perfluorooctanesulfonic Acid (PFOS)	85.7		ng/l	1.72		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	99		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	97		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	104		70-130	



Analyst:

Project Name: MAHER WELL PILOT Lab Number: L1729617

Project Number: 20107 Report Date: 09/13/17

SAMPLE RESULTS

Lab ID: L1729617-03 Date Collected: 08/23/17 09:00

Client ID: FILTER E-8 Date Received: 08/23/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method:EPA 522

Matrix: Dw Extraction Date: 09/05/17 09:30

Analytical Method: 120,522

Analyst: TJ

09/06/17 19:17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.147		1
Surrogate			% Recovery	Qualifier		eptance riteria
1,4-Dioxane-d8			99			70-130



Project Name: MAHER WELL PILOT Lab Number: L1729617

Project Number: 20107 Report Date: 09/13/17

SAMPLE RESULTS

09/12/17 12:59

Lab ID: L1729617-03 Date Collected: 08/23/17 09:00

Client ID: FILTER E-8 Date Received: 08/23/17

Sample Location: BARNSTABLE, MA Field Prep: Not Specified Extraction Method:EPA 537

Matrix: Dw Extraction Date: 08/28/17 15:30

Analytical Method: 122,537

Analyst: AR

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537	- Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.72		1	
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.72		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	105		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	102		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	102		70-130	



**Project Name:** Lab Number: MAHER WELL PILOT L1729617

**Project Number:** Report Date: 20107 09/13/17

**SAMPLE RESULTS** 

09/06/17 19:46

Lab ID: L1729617-04 Date Collected: 08/23/17 09:00

Client ID: Date Received: 08/23/17 FILTER F-8 Sample Location: Field Prep: BARNSTABLE, MA Not Specified

Extraction Method: EPA 522 Matrix: Dw Extraction Date: 09/05/17 09:30

Analytical Method: 120,522

Analyst: TJ

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.144		1
Surrogate			% Recovery	Qualifier		eptance criteria
1,4-Dioxane-d8			100			70-130



Project Name: MAHER WELL PILOT Lab Number: L1729617

Project Number: 20107 Report Date: 09/13/17

SAMPLE RESULTS

09/12/17 13:08

Lab ID: L1729617-04 Date Collected: 08/23/17 09:00

Client ID: FILTER F-8 Date Received: 08/23/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Matrix: Dw Extraction Method:EPA 537
Extraction Date: 08/28/17 15:30

Analytical Method: 122,537

Analyst: AR

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537	- Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.72		1	
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.72		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	111		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	112		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	101		70-130	



Project Name: MAHER WELL PILOT Lab Number: L1729617

Project Number: 20107 Report Date: 09/13/17

SAMPLE RESULTS

 Lab ID:
 L1729617-05
 Date Collected:
 08/23/17 09:00

 Client ID:
 FIELD BLANK
 Date Received:
 08/23/17

Client ID: FIELD BLANK Date Received: 08/23/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified
Extraction Method: EPA 537

Matrix: Dw Extraction Method: Extraction Date: 08/28/17 15:30
Analytical Method: 122,537

Analytical Date: 09/12/17 13:18

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537 - Mar	nsfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.78		1	
Perfluorooctanesulfonic Acid (PFOS)	ND		na/l	1.78		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	113		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	116		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	110		70-130



Analyst:

AR

L1729617

Lab Number:

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 09/13/17

Method Blank Analysis Batch Quality Control

Analytical Method: 122,537 Extraction Method: EPA 537

Analytical Date: 09/12/17 11:22 Extraction Date: 08/28/17 15:30

Analyst: AR

Parameter	Result	Qualifier	Units	RL	ı	MDL
Perfluorinated Alkyl Acids by EPA 5	37 - Mansfi	eld Lab for	sample(s):	01-05	Batch:	WG1036202-1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00		
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00		

			Acceptance	
Surrogate	%Recovery	Qualifier	Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	107		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	101		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	109		70-130	



L1729617

**Project Name:** MAHER WELL PILOT

**Project Number:** 20107 Report Date:

09/13/17

Lab Number:

Method Blank Analysis Batch Quality Control

Extraction Method: EPA 522 Analytical Method: 120,522

Analytical Date: 09/05/17 11:24 09/05/17 09:30 Extraction Date:

Analyst: TJ

Parameter	Result	Qualifier	Units		RL	MDL
1,4 Dioxane by EPA 522 - Mansfield	d Lab for sa	ample(s): C	1-04	Batch:	WG1038558	3-1
1,4-Dioxane	ND		ug/l	(	0.150	

	Acceptance					
Surrogate	%Recovery Qualifi	er Criteria				
1.4-Dioxane-d8	102	70-130				



# Lab Control Sample Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

**Project Number:** 20107

Lab Number: L1729617

**Report Date:** 09/13/17

_	LCS		LCSD	_	%Recovery			RPD
Parameter	%Recovery	Qual	%Recovery	Qual	Limits	RPD	Qual	Limits
Perfluorinated Alkyl Acids by EPA 537 - M	ansfield Lab Assoc	ciated sample(s	s): 01-05 Bato	ch: WG10	36202-2 WG1036	202-3		
Perfluorooctanoic Acid (PFOA)	116		127		70-130	9		30
Perfluorooctanesulfonic Acid (PFOS)	128		134	Q	70-130	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	119		112		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	99		98		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	106		107		70-130	



# Lab Control Sample Analysis Batch Quality Control

**Project Name:** MAHER WELL PILOT

Lab Number: L1729617

**Project Number:** 20107 Report Date: 09/13/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by EPA 522 - Mansfield Lab A	Associated sample(	s): 01-04	Batch: WG10385	558-2 WG	G1038558-3			
1,4-Dioxane	74		75		70-130	1		30

Surrogate	LCS %Recovery C	LCSD Qual %Recovery	Acceptance Qual Criteria	
1,4-Dioxane-d8	81	82	70-130	



# Matrix Spike Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

ND

9.8

Project Number: 20107 Lab Number:

L1729617

Report Date:

70-130

MSD

09/13/17

	Native	MS	_MS	MS		MSD .	MSD		Recovery			RPD
Parameter	Sample	Added	Found	%Recovery	Qual	Found	%Recovery	Qual	Limits	RPD	Qual	Limits
Perfluorinated Alkyl Acids by I 8	EPA 537 - Ma	ansfield Lab	Associated s	ample(s): 01-05	QC Bat	ch ID: WG	31036202-5	QC Sar	nple: L1729	617-02	Client	ID: TROJAN -
Perfluorooctanoic Acid (PFOA)	20.7	34.5	64.4	127		-	-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	85.7	31.9	129	136	Q	-	-		70-130	-		30
Surrogate			% F	MS Recovery Qu	alifier	% Rec	MSD overy Qua	lifier	Accept Crite			
N-Deuterioethylperfluoro-1-octanesu	Ifonamidoacetic	Acid (d5-NEtFO	SAA)	119					70-	130		
Perfluoro-n-[1,2-13C2]decanoic Acid	(13C-PFDA)			105					70-	130		
Perfluoro-n-[1,2-13C2]hexanoic Acid	(13C-PFHxA)			109					70-	130		
Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery		Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by EPA 522 - Ma	nsfield Lab	Associated s	ample(s): 01-0	04 QC Batch II	D: WG103	38558-5	QC Sample:	L172961	17-02 Clie	nt ID: T	ROJAN	-8

	MS	MSD	Acceptance
Surrogate	% Recovery Qualifier	% Recovery Qualifier	Criteria
1,4-Dioxane-d8	102		70-130

8.49

87

MS



30

1,4-Dioxane

Lab Duplicate Analysis
Batch Quality Control

Lab Number:

L1729617

Report Date:

09/13/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Qual Limits
Perfluorinated Alkyl Acids by EPA 537 - NRAW-8	Mansfield Lab Associated sample(s):	01-05 QC Batch ID	: WG1036202-4	QC Samp	ole: L1729617-01 Client ID
Perfluorooctanoic Acid (PFOA)	17.4	18.9	ng/l	8	30
Perfluorooctanesulfonic Acid (PFOS)	77.1	75.0	ng/l	3	30

Surrogate	%Recovery Qualifier %	Recovery Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	113	113	70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	109	109	70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	116	108	70-130
Dioxane by EPA 522 - Mansfield Lab Associated sample(s): 01-04	QC Batch ID: WG1038558-4	QC Sample: L17296	17-01 Client ID: RAW-8
,4-Dioxane 0.553	0.643	ug/l 15	30

		Acceptance			
Surrogate	%Recovery Qualifie	r %Recovery Qualifier	Criteria		
1,4-Dioxane-d8	103	105	70-130		



**Project Name:** 

Project Number:

MAHER WELL PILOT

20107

## **METALS**



**Project Name:** MAHER WELL PILOT

Lab Number:

L1729617

**Project Number:** 20107

**Report Date: SAMPLE RESULTS** 

09/13/17

Lab ID: L1729617-01

Client ID: RAW-8

Sample Location: BARNSTABLE, MA

Matrix: Dw Date Collected:

08/23/17 09:00

Date Received: 08/23/17

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	field Lab										
Iron, Total	0.087		mg/l	0.050		1	08/24/17 15:05	08/29/17 11:25	EPA 3005A	19,200.7	AM
Manganese, Total	0.050		mg/l	0.010		1	08/24/17 15:05	08/29/17 11:25	EPA 3005A	19,200.7	AM



Project Name: MAHER WELL PILOT Lab Number:

Lab Number: L1729617

Project Number: 20107 Report Date: 09/13/17

**SAMPLE RESULTS** 

 Lab ID:
 L1729617-02

 Client ID:
 TROJAN -8

Sample Location: BARNSTABLE, MA

Matrix: Dw

Date Collected: 08/23/17 09:00

Date Received: 08/23/17

Field Prep: Not Specified

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansf	field Lab										
Iron, Total	0.082		mg/l	0.050		1	08/24/17 15:05	08/29/17 12:13	EPA 3005A	19,200.7	AM
Manganese, Total	0.053		mg/l	0.010		1	08/24/17 15:05	08/29/17 12:13	EPA 3005A	19,200.7	AM



L1729617

Project Name: MAHER WELL PILOT Lab Number:

Project Number: 20107 Report Date: 09/13/17

**SAMPLE RESULTS** 

 Lab ID:
 L1729617-03
 Date Collected:
 08/23/17 09:00

 Client ID:
 FILTER E-8
 Date Received:
 08/23/17

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Man	sfield Lab										
Iron, Total	ND		mg/l	0.050		1	08/24/17 15:0	5 08/29/17 12:17	EPA 3005A	19,200.7	AM
Manganese, Total	0.052		mg/l	0.010		1	08/24/17 15:0	5 08/29/17 12:17	EPA 3005A	19,200.7	AM



L1729617

**Project Name:** MAHER WELL PILOT

**Project Number:** 20107 **Report Date:** 09/13/17

**SAMPLE RESULTS** 

Lab ID: L1729617-04 Client ID: FILTER F-8

Sample Location: BARNSTABLE, MA

Matrix: Dw Date Collected: 08/23/17 09:00

Date Received: 08/23/17

Lab Number:

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansf	ield Lab										
Iron, Total	ND		mg/l	0.050		1	08/24/17 15:05	08/29/17 12:42	EPA 3005A	19,200.7	AM
Manganese, Total	0.051		mg/l	0.010		1	08/24/17 15:05 (	08/29/17 12:42	EPA 3005A	19,200.7	AM



**Project Name:** MAHER WELL PILOT **Lab Number:** L1729617

Project Number: 20107 Report Date: 09/13/17

# Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfi	eld Lab for sample(s):	01-04 B	atch: W	G10351	57-1				
Iron, Total	ND	mg/l	0.050		1	08/24/17 15:05	08/29/17 09:39	19,200.7	AM
Manganese, Total	ND	mg/l	0.010		1	08/24/17 15:05	08/29/17 09:39	19,200.7	AM

**Prep Information** 

Digestion Method: EPA 3005A



## Lab Control Sample Analysis Batch Quality Control

**Project Name:** MAHER WELL PILOT

Lab Number: L1729617

**Project Number:** 20107

Report Date: 09/13/17

Parameter	LCS %Recovery Qua	LCSD   %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sa	ample(s): 01-04 Batch: WG	1035157-2					
Iron, Total	113	-		85-115	-		
Manganese, Total	103	-		85-115	-		

### Matrix Spike Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1729617

**Report Date:** 09/13/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery Qu	Recovery ial Limits	RPD Qual	RPD Limits
Total Metals - Mansfield Lab	Associated sam	ple(s): 01-04	QC Bat	ch ID: WG103	5157-3	QC Sam	ple: L1729408-01	Client ID: MS	S Sample	
Iron, Total	0.063	1	1.19	113		-	-	75-125	-	20
Manganese, Total	ND	0.5	0.524	105		-	-	75-125	-	20
Total Metals - Mansfield Lab	Associated sam	ple(s): 01-04	QC Bat	ch ID: WG103	5157-7	QC Sam	nple: L1729713-01	Client ID: MS	S Sample	
Iron, Total	0.182	1	1.29	111		-	-	75-125	-	20
Manganese, Total	ND	0.5	0.532	106		-	-	75-125	-	20

## INORGANICS & MISCELLANEOUS



Project Name: MAHER WELL PILOT

Lab Number: L1729617

Report Date:

Project Number: 20107

09/13/17

**SAMPLE RESULTS** 

Lab ID: L1729617-01

Client ID: RAW-8

Sample Location: BARNSTABLE, MA

Matrix: Dw

Date Collected: 08/23/17 09:00

Date Received: 08/23/17

Field Prep: Not Specified

Parameter	Result (	Qualifier U	Jnits	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	Westborough Lab									
Turbidity	0.39	١	NTU	0.20		1	-	08/24/17 11:40	44,180.1	LH
Alkalinity, Total	13.1	mg C	CaCO3/L	2.00	NA	1	-	08/24/17 10:30	121,2320B	BR
pH (H)	5.4		SU	-	NA	1	-	08/23/17 19:30	121,4500H+-B	CW



L1729617

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 09/13/17

had Blank Analysis

Lab Number:

Method Blank Analysis Batch Quality Control

Parameter	Result Quali	fier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	Westborough Lab for	sample(s): 01	Batch:	WG10	35022-1				
Turbidity	ND	NTU	0.20		1	-	08/24/17 11:40	44,180.1	LH
General Chemistry -	Westborough Lab for	sample(s): 01	Batch:	WG10	35099-1				
Alkalinity, Total	ND	mg CaCO3/L	2.00	NA	1	-	08/24/17 10:30	121,2320B	BR



## Lab Control Sample Analysis Batch Quality Control

**Project Name:** MAHER WELL PILOT

**Project Number:** 20107

Lab Number:

L1729617

Report Date:

09/13/17

Parameter	LCS %Recovery Q	LCSD ual %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab A	ssociated sample(s): 0	1 Batch: WG1034871-1	ĺ				
рН	100	-		99-101	-		5
General Chemistry - Westborough Lab A	ssociated sample(s): 0°	1 Batch: WG1035022-2	2				
Turbidity	108	-		90-110	-		
General Chemistry - Westborough Lab A	ssociated sample(s): 0	1 Batch: WG1035099-2	2				
Alkalinity, Total	104	-		90-110	-		10

### Matrix Spike Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number:

L1729617

Report Date:

09/13/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual Found	MSD %Recovery Qu	Recovery al Limits	RPD Q	RPD <sub>ual</sub> Limits
General Chemistry - Westborou	igh Lab Asso	ciated samp	le(s): 01	QC Batch ID: V	VG1035099-4	QC Sample: L17296	54-01 Client	ID: MS Sa	ample
Alkalinity, Total	45.5	100	145	100	-	-	86-116	-	10



## Lab Duplicate Analysis Batch Quality Control

**Project Name:** MAHER WELL PILOT

**Project Number:** 20107

L1729617 09/13/17 Report Date:

Lab Number:

Parameter	Native Sam	nple Duplicate Sar	nple Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab	Associated sample(s): 01 Q	C Batch ID: WG1034871-2	QC Sample: L	1729676-01	Client ID: D	OUP Sample
рН	4.8	4.9	SU	2		5
General Chemistry - Westborough Lab	Associated sample(s): 01 Q	C Batch ID: WG1035022-3	QC Sample: L	1729617-01	Client ID: F	RAW-8
Turbidity	0.39	0.37	NTU	5		13
General Chemistry - Westborough Lab	Associated sample(s): 01 Q	C Batch ID: WG1035099-3	QC Sample: L	1729654-01	Client ID: D	OUP Sample
Alkalinity, Total	45.5	44.8	mg CaCO3	3/L 2		10



Serial\_No:09131714:42 **Lab Number:** L1729617

Project Name: MAHER WELL PILOT

Project Number: 20107

**Report Date:** 09/13/17

Sample Receipt and Container Information

Were project specific reporting limits specified?

YES

**Cooler Information** 

Custody Seal Cooler

Α Absent В Absent

Container Info	ormation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	pН	рН	deg C	Pres	Seal	Date/Time	Analysis(*)
L1729617-01A	Plastic 120ml HNO3 preserved	Α	<2	<2	5.0	Υ	Absent		FE-UI(180),MN-UI(180)
L1729617-01B	Plastic 120ml Other preserved (sub-lab)	Α	7	7	5.0	Υ	Absent		SUB-BROMATE(0)
L1729617-01C	Plastic 250ml unpreserved/No Headspace	Α	NA		5.0	Υ	Absent		ALK-T-2320(14),TURB-180(2),PH-4500(.01)
L1729617-01D	Plastic 250ml Trizma preserved	Α	NA		5.0	Υ	Absent		A2-537-PFOA/PFOS(14)
L1729617-01E	Plastic 250ml Trizma preserved	Α	NA		5.0	Υ	Absent		A2-537-PFOA/PFOS(14)
L1729617-01F	Plastic 250ml Trizma preserved	Α	NA		5.0	Υ	Absent		A2-537-PFOA/PFOS(14)
L1729617-01G	Amber 500ml NaSulfite/NaHSO4 preserved	Α	<4	<4	5.0	Υ	Absent		A2-14DIOXANE-522(28)
L1729617-01H	Amber 500ml NaSulfite/NaHSO4 preserved	Α	<4	<4	5.0	Υ	Absent		A2-14DIOXANE-522(28)
L1729617-02A	Plastic 120ml HNO3 preserved	Α	<2	<2	5.0	Υ	Absent		FE-UI(180),MN-UI(180)
L1729617-02B	Plastic 120ml Other preserved (sub-lab)	Α	7	7	5.0	Υ	Absent		SUB-BROMATE(0)
L1729617-02D	Plastic 250ml Trizma preserved	Α	NA		5.0	Υ	Absent		A2-537-PFOA/PFOS(14)
L1729617-02E	Plastic 250ml Trizma preserved	Α	NA		5.0	Υ	Absent		A2-537-PFOA/PFOS(14)
L1729617-02F	Plastic 250ml Trizma preserved	Α	NA		5.0	Υ	Absent		A2-537-PFOA/PFOS(14)
L1729617-02G	Amber 500ml NaSulfite/NaHSO4 preserved	Α	<4	<4	5.0	Υ	Absent		A2-14DIOXANE-522(28)
L1729617-02H	Amber 500ml NaSulfite/NaHSO4 preserved	Α	<4	<4	5.0	Υ	Absent		A2-14DIOXANE-522(28)
L1729617-03A	Plastic 120ml HNO3 preserved	Α	<2	<2	5.0	Υ	Absent		FE-UI(180),MN-UI(180)
L1729617-03B	Plastic 120ml Other preserved (sub-lab)	Α	7	7	5.0	Υ	Absent		SUB-BROMATE(0)
L1729617-03D	Plastic 250ml Trizma preserved	Α	NA		5.0	Υ	Absent		A2-537-PFOA/PFOS(14)
L1729617-03E	Plastic 250ml Trizma preserved	Α	NA		5.0	Υ	Absent		A2-537-PFOA/PFOS(14)
L1729617-03F	Plastic 250ml Trizma preserved	Α	NA		5.0	Υ	Absent		A2-537-PFOA/PFOS(14)
L1729617-03G	Amber 500ml NaSulfite/NaHSO4 preserved	Α	<4	<4	5.0	Υ	Absent		A2-14DIOXANE-522(28)
L1729617-03H	Amber 500ml NaSulfite/NaHSO4 preserved	Α	<4	<4	5.0	Υ	Absent		A2-14DIOXANE-522(28)



**Lab Number:** L1729617

Report Date: 09/13/17

Project Name: MAHER WELL PILOT

Project Number: 20107

Container Info	ormation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	рН	рН	deg C	Pres	Seal	Date/Time	Analysis(*)
L1729617-04A	Plastic 120ml HNO3 preserved	Α	<2	<2	5.0	Υ	Absent		FE-UI(180),MN-UI(180)
L1729617-04B	Plastic 120ml Other preserved (sub-lab)	Α	7	7	5.0	Υ	Absent		SUB-BROMATE(0)
L1729617-04D	Plastic 250ml Trizma preserved	Α	NA		5.0	Υ	Absent		A2-537-PFOA/PFOS(14)
L1729617-04E	Plastic 250ml Trizma preserved	Α	NA		5.0	Υ	Absent		A2-537-PFOA/PFOS(14)
L1729617-04F	Plastic 250ml Trizma preserved	Α	NA		5.0	Υ	Absent		A2-537-PFOA/PFOS(14)
L1729617-04G	Amber 500ml NaSulfite/NaHSO4 preserved	Α	<4	<4	5.0	Υ	Absent		A2-14DIOXANE-522(28)
L1729617-04H	Amber 500ml NaSulfite/NaHSO4 preserved	Α	<4	<4	5.0	Υ	Absent		A2-14DIOXANE-522(28)
L1729617-05A	Plastic 250ml Trizma preserved	В	NA		5.6	Υ	Absent		A2-537-PFOA/PFOS(14)



Project Name: MAHER WELL PILOT Lab Number: L1729617

Project Number: 20107 Report Date: 09/13/17

#### **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

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**

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

#### Terms

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.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

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.

#### Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

- 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

Report Format: Data Usability Report



В

Project Name: MAHER WELL PILOT Lab Number: L1729617

Project Number: 20107 Report Date: 09/13/17

#### Data Qualifiers

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

- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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: MAHER WELL PILOT Lab Number: L1729617

Project Number: 20107 Report Date: 09/13/17

#### REFERENCES

- 19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.
- Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.
- Determination of 1,4-Dioxane in Drinking Water by Solid Phase Extraction (SPE) and Gas Chromatography/Mass Spectrometry (GC/MS) with Selected Ion Monitoring (SIM). EPA Method 522, EPA/600/R-08/101. Version 1.0, September 2008.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.
- Determination of Selected Perfluorintated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537, EPA/600/R-08/092. Version 1.1, September 2009.

#### 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.



ID No.:17873

Revision 10

Alpha Analytical, Inc. Facility: Company-wide

Department: Quality Assurance

Published Date: 1/16/2017 11:00:05 AM Title: Certificate/Approval Program Summary

Page 1 of 1

#### 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-Colilert-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 II, 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-Colilert-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.

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.

Pre-Qualtrax Document ID: 08-113 Document Type: Form

Διρ <sub>н</sub> α	CHAIN O	F CUSTODY	PAGEOF	Date R	ec'd in Lab:	19/23/	וח	ALPH	A Job #:	1729617
8 Walkup Drive	320 Forbes Blyd	Project Information			rt Information			Control of the last of the las	g Informati	
Westboro, MA Tel: 508-898-9	01581 Mansfield, MA 02048	Project Name: Mahe	Well Pilo	□ ADE	Ex 🗆 E	EMAIL		☐ Same	as Client in	fo PO#:
Client Information	on	Duningt Lauretin	45 Tible, M.	Dogwi	atory Require	ments &	Project In	formati	on Require	ements
Address: 57	Dresser Hill Rd.	Project #: 2 0 Project Manager: F. ALPHA Quote #:	L Grottun	☐ Yes ☐ Yes ☐ Yes ☐ Yes ☐	□ No MA MCP A □ No Matrix Spil □ No GW1 Stan □ No NPDES Rer State /Fed Pro	ke Required on dards (Info Red GP gram	this SDG?	(Require etals & E	d for MCP Ir	FRCP Analytical Methods norganics) gets)
Email: grotton (	200 8029 Oblyelectivater.	Turn-Around Time	SH (only confirmed if pre-approved!)	AA AAA D 624	METALS: DMCP 13 DMCP 14 DRCP 14 EPH: CT	WPH: Changes & Targets C. Ranges Only C. PCB. C. PESST.	La Tel Le Fingerprint	Total Lability	Distriction of	SAMPLE INFO Filtration Field Lab to do Preservation Lab to do
ALPHA Lab ID (Lab Use Only)	Sample ID	Collection	n Sample Sam Time Matrix Initi	pler / ¿ Ś	METALS METALS EPH. C.	VPH:	A Table	3	FE FE	✓ Lab to do  L  Sample Comments
9617-01	RAW-8	8/23/17 9	ios DW AG	D			vv	VV	v	
02	Trojan - 8	The second second	1 1				X	\ \ \ \ \ \		7
03	EV+ E-4						×/		X	7
	Tilb E 1							XX	X	
04	Tiller F-8			,			X	XX	X	7
OZ-	Field Blank		V V						X	1
Container Type P= Plastic A= Amber glass V= Vial G= Glass	Preservative A= None B= HCI C= HNO <sub>3</sub> D= H <sub>2</sub> SO <sub>4</sub>		Container Ty Preservat							
B= Bacteria cup C= Cube O= Other E= Encore D= BOD Bottle Page 42 of 51	E= NaOH F= MeOH G= NaHSO <sub>4</sub> H = Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> I= Ascorbic Acid J = NH <sub>4</sub> Cl K= Zn Acetate O= Other	Relinquished By:	Date/Time	Sui	Received By		Date/Ti		Alpha's Ter See revers	s submitted are subject to rms and Conditions. e side. -01 (rev. 12-Mar-2012)



	CHAIN OF	CUSTO	DY	PAGE 1 O	F 1	Da	te Rec'd i	n Lab:	PAGE 1 OF 1 Date Rec'd in Lab					ALPHA Job #:L172 9617					
ALPH	YTICAL	Project Info	rmation			Re	port In	form	atior	n Data	Del	ivera	bles	Bil	ling l	nforn	natio	n	
Westborough, MA	Mansfield, MA						FAX			□ E	MAIL				Same	as Clie	ent info	PO #:	
TEL: 508-898-9220 FAX: 508-898-9193	TEL: 508-822-9300 FAX: 508-822-3288	Project Name:					ADEx			□ A	dd'l D	elivera	ables						
Client Informa		Project Location	n. MA				gulato			ement	s/Re	port	Limit						
Client: Alpha Ana		Project #:				Sta	te/Fed Pr	ogram	1			_		Crit	eria				
Address: 8 Walku		Project Manag	er: Ethan I e	iahton		MO	P PRE	SUN	IPTIV	E CEF	RTAI	NTY-	CT R	EAS	ONAB	LE C	ONF	DENCE PROTO	COLS
Westborough, Ma		ALPHA Quote		igittori		-	Yes		⊠ No						nods Re				
Phone: 508-898-9		Turn-Around					Yes		⊠ No		Are	CTRO	CP (Rea	asonab	le Conf	idence	Protoc	ols) Required?	T
Fax:				Push (ONLY IS	PRE-APPROVED)		IALYSI	<u> </u>		П		T		1	1	1		SAMPLE HANDLING	O T A L
Email: subreports	@alphalah com	_ Z Otandard	LJ 1	CUSTI (ONLY IF	PRE-APPROVED)													Filtration  ☐ Done	L
	e been Previously analyzed by Alpha	- Due Date:	Time	a·			1											☐ Not Needed	#
	pecific Requirements/Comments	s/Detection Limi				4												☐ Lab to do  Preservation	B
	Alpha Job # <b>L172 9617</b> on this rep																	☐ Lab to do	B O T T L E S
																		(Please specify below)	E
ALPHA Lab ID	Sample ID	Col	lection	Sample	Sampler's	A E													
(Lab Use Only)	Annual de la constante	Date	Time	Matrix	Initials	BROMATE												Sample Specific	
	· 		1	1		<u> </u>												Comments	
	RAW-8	8/23/17	09:00	DW		X					3 - 1/4								1
	TROJAN -8	8/23/17	09:00	DW		X													1
	FILTER E-8	8/23/17	09:00	DW		X										1			1
	FILTER F-8	8/23/17	09:00	DW		X													1
												1000							
LEASE ANSWER	QUESTIONS ABOVE!			Co	ontainer Type	P		-	-	-	-	-	-	-	-	-	-		
					Preservative	TRIZMA		-	-	-	-	-	-	-	-	-	-	Please print clearly, le and completely. Sam not be logged in and	
S YOUR	PROJECT		Relin	quished By:		Da	ate/Time			F	Receiv	ed By:	:	d	[	Date/T	ime	turnaround time clock start until any ambigui	
MA MCP	or CT RCP?																	resolved. All samples submitted are subject	to
ORM NO: 01-01(I) ev. 30-JUL-07)														_				Alpha's Payment Terr	ns
Page 43 of s	77)			// <sub>2</sub> // <sub>2</sub> = 1/2			_								<u></u>				



	CHAIN OF	CUSTO	DY	PAGE 1	OF 1	Date	Rec'd in La	ib:					AL	РНА .	Job #:	L172	9617	
<b>ALPH</b>	TICAL	Project Infor	mation			Rep	ort Info	matio	n Data	Deliv	veral	bles	Bil	ling lr	nforma	ation		
Westborough, MA	Mansfield, MA	Desired Name					AX			MAIL				Same a	as Client	t info	PO #:	
TEL: 508-898-9220 FAX: 508-898-9193	TEL: 508-822-9300 FAX: 508-822-3288	Project Name:					ADEx		□ A	dd'l De	liveral	bles						
Client Informat		Project Locatio	n: MA			100	ulatory		ement	s/Rep	ort	Limits						
Client: Alpha Anal	-	Project #:	11. 17/2 (		-	State	/Fed Progra	am					Crite	eria				
Address: 8 Walkup		Project #.	ar: Ethan Lo	ighton		MCI	PRESL	IMPTI\	VE CEF	RTAIN	ITY-	CT RE	ASC	NAB	LE CC	NFIE	ENCE PROTOC	OLS
Westborough, Ma		ALPHA Quote		ightori		Y		⊠ No							quired?			
Phone: 508-898-9		Turn-Around						⊠ No		Are C	TRC	P (Reas	sonabl	e Confi	dence F	rotocol	s) Required?	T
Fax:		Standard		Dueb course		ANA	ALYSIS		1		-	T			T		SAMPLE HANDLING	C T A L
	Malahalah aam	_ 🖂 Standard	☐ F	KUSH (ONLY)	F PRE-APPROVED)												Filtration  ☐ Done	A L
Email: subreports@	A CONTRACTOR OF THE PROPERTY O	— Due Date:	Time														☐ Not Needed	#
	e been Previously analyzed by Alpha pecific Requirements/Comment		1377508170089	s.		-				ŝ							☐ Lab to do  Preservation	B
	Alpha Job # <b>L172 9617</b> on this re		is.														☐ Lab to do	T
																	(Please specify below)	E S
																		8
ALPHA Lab ID	Cample ID	Call	estion	Comple		<u> </u>												
(Lab Use Only)	Sample ID	Date	ection Time	Sample Matrix	Sampler's Initials	BROMATE												
		1				BR								İ			Sample Specific Comments	
	RAW-8	8/23/17	09:00	DW		X				T								1
	TROJAN -8	8/23/17	09:00	DW		X												1
	FILTER E-8	8/23/17	09:00	DW		X												1
	FILTER F-8	8/23/17	09:00	DW		X												1
	47 ( 3000) 27 ( 3000) 4440																	
												3000 00						
																		T
LEASE ANSWER	QUESTIONS ABOVE!			- 1	Container Type	Р	-	-	-	-	-	-		-	-	-		
					Preservative	TRIZMA	-	-	-	-	-	-	-	-	-	-	Please print clearly, leg- and completely. Sampl	oly es car
SYOUR	PROJECT		Relin	nquished By:		Dat	e/Time		F	Receive	d By:				ate/Tim	ie	not be logged in and turnaround time clock w start until any ambiguitie	
	or CT RCP?		G(N) =		-	8/24/		30									resolved. All samples submitted are subject to	
ORM NO: 01-01(I) rev. 30-JUL-07)	0. 01 1(01 1		1- 0			1											Alpha's Payment Terms	
Page 44 of 5																		

Transaction Date: 24 Aug 2017

Tracking Number:

1ZE306540198407005

**ADDRESS INFORMATION** 

Ship To:

Ship From:

Eurofins Eaton Analytical 110 South Hill Street SOUTH BEND IN 466172702 Telephone:574-233-4777

Walkup Login Dept Westboro 8 Walkup Dr Westborough MA 01581 Telephone:508-898-9220 email:login@alphalab.com

Return Address:

Login Dept Westboro 8 Walkup Dr Westborough MA 01581 Telephone:508-898-9220 email:login@alphalab.com

N **PACKAGE INFORMATION** 

WEIGHT

ß 11.0 lbs (15.0 lbs billable) 14 x 14 x 10in. Other Packaging DIMENSIONS / PACKAGING

**DECLARED VALUE** 100.00 USD

REFERENCE NUMBERS

**UPS SHIPPING SERVICE AND SHIPPING OPTIONS** 

Shipping Fees Subtotal: Transportation 145.17 USD 137.93 USD

Guaranteed By:

10:30 AM Friday, Aug 25, 2017

Service:

**Declared Value** Fuel Surcharge

0.00 USD

4 PAYMENT INFORMATION

Bill Shipping Charges to:

Shipper's Account E30654

Shipping Charges: A discount has been applied to the Daily rates for this shipment Negotiated Charges:

145.17 USD

53.46 USD 53.46 USD

53.46 USD

Subtotal Shipping Charges:

Total Charges:

Note: This document is not an invoice. Your final invoice may vary from the displayed reference rates

\* For delivery and guarantee information, see the UPS Service Guide ({0}). To speak to a customer service representative, call 1-800-PICK-UPS for domestic services and 1-800-782-7892 for international services.



### LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at  $(800)\ 332-4345$  or  $(574)\ 233-4777$ .

This report may not be reproduced, except in full, without written approval from EEA.

Page 46 of 51 Page 1 of 6



### **STATE CERTIFICATION LIST**

State	Certification	State	Certification
Alabama	40700	Missouri	880
Alaska	IN00035	Montana	CERT0026
Arizona	AZ0432	Nebraska	NE-OS-05-04
Arkansas	IN00035	Nevada	IN00035
California	2920	New Hampshire*	2124
Colorado	IN035	New Jersey*	IN598
Colorado Radiochemistry	IN035	New Mexico	IN00035
Connecticut	PH-0132	New York*	11398
Delaware	IN035	North Carolina	18700
Florida*	E87775	North Dakota	R-035
Georgia	929	Ohio	87775
Hawaii	IN035	Oklahoma	D9508
Idaho	IN00035	Oregon (Primary AB)*	4074-001
Illinois*	200001	Pennsylvania*	68-00466
Illinois Microbiology	17767	Puerto Rico	IN00035
Illinois Radiochemistry	IN00035	Rhode Island	LAO00343
Indiana Chemistry	C-71-01	South Carolina	95005
Indiana Microbiology	M-76-07	South Dakota	IN00035
Iowa	098	Tennessee	TN02973
Kansas*	E-10233	Texas*	T104704187-15-8
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA170006	Utah*	IN00035
Maine	IN00035	Vermont	VT-8775
Maryland	209	Virginia*	460275
Massachusetts	M-IN035	Washington	C837
Michigan	9926	West Virginia	9927 C
Minnesota*	018-999-338	Wisconsin	999766900
Mississippi	IN035	Wyoming	IN035
EPA	IN00035		

\*NELAP/TNI Recognized Accreditation Bodies

Revision date: 08/28/2017

Page 47 of 51 Page 2 of 6



110 South Hill Street South Bend, IN 46617 Tel: (574) 233-4777 Fax: (574) 233-8207 1 800 332 4345

### Laboratory Report

Client: Report: 396593 Alpha Analytical

Priority: Standard Written Ethan Leighton Attn:

Final Status: 35 Whitney Road

PWS ID: Not Supplied Suite 5

Mahwah, NJ 07430

	Samp	le Information			
EEA ID#	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
3766097	Raw-8/L1729617-1	317.0	08/23/17 09:00	Client	08/25/17 10:00
3766098	Trojan-8/L1729617-2	317.0	08/23/17 09:00	Client	08/25/17 10:00
3766099	Filter E-8/L1729617-3	317.0	08/23/17 09:00	Client	08/25/17 10:00
3766100	Filter F-8/L1729617-4	317.0	08/23/17 09:00	Client	08/25/17 10:00

#### **Report Summary**

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call James Van Fleit at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from EEA.

Van Huit ASM

Date

Client Name: Alpha Analytical

Report #: 396593

Authorized Signature

Page 3 of 6 Page 48 of 51

Page 1 of 3

Title

09/07/2017

Client Name: Alpha Analytical Report #: 396593

Sampling Point: Raw-8/L1729617-1 PWS ID: Not Supplied

			Gene	ral Chemi	stry				
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID#
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L		09/05/17 20:25	3766097

Sampling Point: Trojan-8/L1729617-2 PWS ID: Not Supplied

			Gene	ral Chemi	stry				
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID#
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L		09/05/17 20:50	3766098

Sampling Point: Filter E-8/L1729617-3 PWS ID: Not Supplied

			Gene	ral Chemi	stry				
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID#
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L		09/05/17 21:15	3766099

Sampling Point: Filter F-8/L1729617-4 PWS ID: Not Supplied

			Gene	ral Chemi	stry				
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID#
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L		09/05/17 21:40	3766100

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	۸	!

Client Name: Alpha Analytical Report #: 396593

#### **Lab Definitions**

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

**Internal Standards (IS)** - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

**Laboratory Duplicate (LD)** - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

**Laboratory Method Blank (LMB)** / **Laboratory Reagent Blank (LRB)** - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

325522

e s		CHUILO	>											1	0
51 <sub>4</sub>	CHAIN OF COSTODY	01000	ב	PAGE 1 OF 1		Date Rec'd in Lab	n Lab:				ALP	ALPHA Job #:L172 9617	#:L172	9617 5 76575	0
ALPHA AMALYTICAL		Project Information	mation			Report Information Data Deliverables	ıformat	ion Da	ta Deliv	erables	BIIII	Billing Information	mation	# Od	
	Mansfield, MA TEL: 508-822-9300	Project Name:							Add'I Deliverables	verables		a a a a a a a a a a a a a a a a a a a		; )	
AX: 508-898-9193 FAX	FAX: 508-822-3288 <b>On</b>	Project Location: MA	n: MA			Regulatory Requirements/Report Limits	ry Req	uiremer	its/Rep	ort Limi	Criteria	c			
lient: Alpha Analytical Lab	ıl Lab	Project #:				o data	and and								
ddress: 8 Walkup Drive	,ve	Project Manager: Ethan Leighton	er: Ethan Lei	hton		MCP PR	SUMP	TIVE CE	RTAIN	ry-ct r	EASO	VABLE	CONFID	MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS	
/estborough, Ma 01581	81	ALPHA Quote #:	#			Yes		% × ×	Are M	SP Analyti	cal Metho	Are MCP Analytical Methods Required?	d?	Are MCP Analytical Methods Required?	
hone: 508-898-9220		Turn-Around Time	Time			ANALYSIS	1								
ax:		Standard Standard	П	Rush (ONLY IF PRE-APPROVED)	E-APPROVED)									SAMPLE HANDLING T	
mail: subreports@alphalab.com	ohalab.com										, in	2			
These samples have been	These samples have been Previously analyzed by Alpha	Due Date:	Time:				=		0	7	-	<b>10</b>		□ Not Needed #	
ther Project Specil	ither Project Specific Requirements/Comments/Detection Limits:	s/Detection Limi	ts:						3	3				Preservation 0	
lease reference Alph	ease reference Alpha Job # L172 9617 on this report.	ort.						reactivity to the second	h					(Please specify E below) S	
	-		1	-	3	3T/									
LPHA Lab ID	Sample ID	5	Collection	Sample	Sampler's	₹W¢									
(Lab Use Only)		Date	Lime	Matrix	Initials	ВВО								Sample Specific Comments	
2	RAW-8	8/23/17	00:60	DW		×								3766097	
	TROJAN -8 - 2	8/23/17	00:60	DW		×								1 098 1	
ш	FILTER E-8 -3	8/23/17	00:60	DW		X								099 1	
Ŧ	FILTER F-8 ~ 4	8/23/17	00:60	DW	-	Х				3				1 000 7	
						,				-		*			
										+		\$6			
										-		erial	+		
		+								-		_No:			
	-							+		-		:091			
EASE ANSWER QUESTIONS ABOVE!	ESTIONS ABOVE!			Con	Container Type	a				ŀ		, 31,71			
				a.	Preservative	TRIZMA						4:4:		Prease print clearly, regiony and completely. Samples can not be loaged in and	
MOUR P	ROJECT		Relin	Relinquished By:		Date/Time			Received By:	I By:		Date/Time	Time	turnaround time clock will not start until any ambiguities are	
A CP o	A MCP or CT RCP?	8	Se 3			0 6/46/8	06:60	3	3		820	11-5	3	resolved. All samples submitted are subject to Alpha's Payment Terms.	
30-JUL-07)															

SUE UPS: Eurofins, IN



#### ANALYTICAL REPORT

Lab Number: L1730552

Client: Blueleaf Incorporated

57 Dresser Hill Road Charlton, MA 01507

ATTN: Erik Grotton

Phone: (508) 248-7094

Project Name: MAHER WELLS

Project Number: 20107 Report Date: 09/18/17

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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



Project Name: MAHER WELLS

Project Number: 20107

**Lab Number:** L1730552 **Report Date:** 09/18/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1730552-01	RAW-9	DW	BARNSTABLE, MA	08/30/17 09:00	08/30/17
L1730552-02	TROJAN-9	DW	BARNSTABLE, MA	08/30/17 09:00	08/30/17
L1730552-03	FILTER E-9	DW	BARNSTABLE, MA	08/30/17 09:00	08/30/17
L1730552-04	FILTER F-9	DW	BARNSTABLE, MA	08/30/17 09:00	08/30/17
L1730552-05	FIELD BLANK	DW	BARNSTABLE, MA	08/30/17 09:00	08/30/17



L1730552

Project Name: MAHER WELLS Lab Number:

Project Number: 20107 Report Date: 09/18/17

#### **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 cont	act Client Service	ces at 800-624-9	220 with any que	stions.



L1730552

Lab Number:

Project Name: MAHER WELLS

Project Number: 20107 Report Date: 09/18/17

#### **Case Narrative (continued)**

#### Report Submission

The analysis of Bromate was subcontracted. A copy of the laboratory report is included as an addendum.

Please note: This data is only available in PDF format and is not available on Data Merger.

### Sample Receipt

Some samples were received at the laboratory above the required temperature range. The samples were transported to the laboratory in coolers with ice and delivered directly from the sampling site.

#### Perfluorinated Alkyl Acids

The WG1037665-2/-3 LCS/LCSD recoveries, associated with L1730552-01 through -05, are outside the individual acceptance criteria for perfluorooctanoic acid (pfoa) (146%/136%) and perfluorooctanesulfonic acid (pfos) (143%/135%). The results of the associated samples are reported.

The WG1037665-5 MS recoveries, performed on L1730552-02, are outside the acceptance criteria for perfluorooctanoic acid (pfoa) (133%) and perfluorooctanesulfonic acid (pfos) (135%).

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:

Title: Technical Director/Representative Date: 09/18/17

6004 Skulow Kelly Stenstrom

## **ORGANICS**



## **SEMIVOLATILES**



Project Name: MAHER WELLS Lab Number: L1730552

Project Number: 20107 Report Date: 09/18/17

SAMPLE RESULTS

09/12/17 19:20

WI LL KLOOL IS

Lab ID: L1730552-01 Date Collected: 08/30/17 09:00

Client ID: RAW-9 Date Received: 08/30/17 Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method:EPA 522

Matrix: Dw Extraction Date: 09/12/17 11:00

Analytical Method: 120,522

Analyst: TJ

Analytical Date:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.461		ug/l	0.147		1
Surrogate			% Recovery	Qualifier		eptance riteria
1,4-Dioxane-d8			91			70-130



Project Name: MAHER WELLS Lab Number: L1730552

Project Number: 20107 Report Date: 09/18/17

SAMPLE RESULTS

Lab ID: Date Collected: 08/30/17 09:00

Client ID: RAW-9 Date Received: 08/30/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Sample Location: BARNSTABLE, MA Field Prep: Not Specified Extraction Method: EPA 537

Matrix: Dw Extraction Date: 09/01/17 08:00

Analytical Method: 122,537
Analytical Date: 09/06/17 19:45

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537 -	Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	20.7		ng/l	1.78		1	
Perfluorooctanesulfonic Acid (PFOS)	72.5		ng/l	1.78		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	116		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	84		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	85		70-130	



Analyst:

AR

09/12/17 11:00

**Project Name:** Lab Number: MAHER WELLS L1730552

**Project Number:** Report Date: 20107 09/18/17

**SAMPLE RESULTS** 

Lab ID: L1730552-02 Date Collected: 08/30/17 09:00

Client ID: Date Received: 08/30/17 TROJAN-9 Sample Location: Field Prep: BARNSTABLE, MA Not Specified

Extraction Method: EPA 522

Matrix: Dw Extraction Date: Analytical Method: 120,522

Analytical Date: 09/12/17 19:44

Analyst: TJ

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfie	eld Lab					
1,4-Dioxane	ND		ug/l	0.147		1
Surrogate			% Recovery	Qualifier		eptance riteria
1.4-Dioxane-d8			93			70-130



Project Name: MAHER WELLS Lab Number: L1730552

Project Number: 20107 Report Date: 09/18/17

**SAMPLE RESULTS** 

Lab ID: L1730552-02 Date Collected: 08/30/17 09:00

Client ID: TROJAN-9 Date Received: 08/30/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method:EPA 537

Matrix: Dw Extraction Date: 09/01/17 08:00 Analytical Method: 122,537

Analytical Date: 09/06/17 20:03
Analyst: AR

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537	- Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	20.4		ng/l	1.72		1	
Perfluorooctanesulfonic Acid (PFOS)	73.0		ng/l	1.72		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	120		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	90		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	94		70-130	



Project Name: MAHER WELLS Lab Number: L1730552

Project Number: 20107 Report Date: 09/18/17

SAMPLE RESULTS

E RESULTS

Lab ID: L1730552-03 Date Collected: 08/30/17 09:00

Client ID: FILTER E-9 Date Received: 08/30/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Matrix: Dw Extraction Method:EPA 522
Extraction Date: 09/12/17 11:00

Analytical Method: 120,522
Analytical Date: 09/12/17 20:07

Analyst: TJ

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.147		1
Surrogate			% Recovery	Qualifier		eptance riteria
1,4-Dioxane-d8			97			70-130



Project Name: MAHER WELLS Lab Number: L1730552

Project Number: 20107 Report Date: 09/18/17

SAMPLE RESULTS

Lab ID: L1730552-03 Date Collected: 08/30/17 09:00

Client ID: FILTER E-9 Date Received: 08/30/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method:EPA 537

Matrix: Dw Extraction Date: 09/01/17 08:00

Analytical Method: 122,537

Analyst: AR

09/06/17 20:22

Analytical Date:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537	- Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.72		1	
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.72		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	121		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	87		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	86		70-130	



**Project Name:** Lab Number: MAHER WELLS L1730552

**Project Number:** Report Date: 20107 09/18/17

**SAMPLE RESULTS** 

09/12/17 20:30

Lab ID: L1730552-04 Date Collected: 08/30/17 09:00

Client ID: Date Received: FILTER F-9 08/30/17 Sample Location: Field Prep: BARNSTABLE, MA Not Specified

Extraction Method: EPA 522

Matrix: Dw Extraction Date: 09/12/17 11:00 Analytical Method: 120,522

Analyst: TJ

Analytical Date:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.147		1
Surrogate			% Recovery	Qualifier		eptance riteria
1,4-Dioxane-d8			76			70-130



Project Name: MAHER WELLS Lab Number: L1730552

Project Number: 20107 Report Date: 09/18/17

**SAMPLE RESULTS** 

Lab ID: L1730552-04 Date Collected: 08/30/17 09:00

Client ID: FILTER F-9 Date Received: 08/30/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method:EPA 537

Matrix: Dw Extraction Date: 09/01/17 08:00

Analytical Method: 122,537

Analyst: AR

09/06/17 20:31

Analytical Date:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537 -	Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.78		1	
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.78		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	114		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	86		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	100		70-130



Project Name: MAHER WELLS Lab Number: L1730552

Project Number: 20107 Report Date: 09/18/17

SAMPLE RESULTS

Lab ID: Date Collected: 08/30/17 09:00

Client ID: FIELD BLANK Date Received: 08/30/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified
Extraction Method: EPA 537

Matrix: Dw Extraction Date: 09/01/17 08:00

Analytical Method: 122,537
Analytical Date: 09/06/17 20:40

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537 - Man	sfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.72		1	
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.72		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	119		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	81		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	86		70-130



Analyst:

AR

Extraction Method: EPA 537

L1730552

09/01/17 08:00

Lab Number:

**Extraction Date:** 

Project Name: MAHER WELLS

Perfluorooctanesulfonic Acid (PFOS)

Project Number: 20107 Report Date: 09/18/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537

Analytical Date: 09/06/17 19:17

Analyst: AR

Parameter	Result	Qualifier	Units	RL	MDL
Perfluorinated Alkyl Acids by EPA	537 - Mansfi	eld Lab for	sample(s):	01-05	Batch: WG1037665-1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00	

ng/l

2.00

			Acceptance	
Surrogate	%Recovery	Qualifier	Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	129		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	87		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	97		70-130	

ND



L1730552

**Project Name:** Lab Number: MAHER WELLS

**Project Number:** 20107 Report Date:

09/18/17

Method Blank Analysis Batch Quality Control

Extraction Method: EPA 522 Analytical Method: 120,522

Analytical Date: 09/12/17 12:49 09/12/17 11:00 Extraction Date:

Analyst: TJ

Parameter	Result	Qualifier Uni	s RL	MDL	
1,4 Dioxane by EPA 522 - Ma	insfield Lab for sa	mple(s): 01-04	Batch: WG	G1040812-1	
1,4-Dioxane	ND	uç	/I 0.150		

	Acceptance				
Surrogate	%Recovery Qualifier Criteria				
1.4-Dioxane-d8	85 70-130				



## Lab Control Sample Analysis Batch Quality Control

**Project Name:** MAHER WELLS

20107

**Project Number:** 

Lab Number:

L1730552

09/18/17

Report Date:

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	RF Qual Lim	PD nits
Perfluorinated Alkyl Acids by EPA 537 - Man	sfield Lab Assoc	ciated sample(	s): 01-05 Bato	h: WG10	37665-2 WG1037	665-3		
Perfluorooctanoic Acid (PFOA)	146	Q	136	Q	70-130	7	3	0
Perfluorooctanesulfonic Acid (PFOS)	143	Q	135	Q	70-130	6	3	0

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	120		115		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	95		85		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	97		100		70-130	



## Lab Control Sample Analysis Batch Quality Control

**Project Name:** MAHER WELLS

Lab Number:

L1730552

**Project Number:** 20107 Report Date:

09/18/17

Parameter	LCS %Recovery Q	ual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by EPA 522 - Mansfield Lab	Associated sample(s):	01-04	Batch: WG104081	2-2 WG	1040812-3			
1,4-Dioxane	80		79		70-130	1		30

Surrogate	LCS	LCSD	Acceptance
	%Recovery Qu	ual %Recovery	Qual Criteria
1,4-Dioxane-d8	77	77	70-130

## Matrix Spike Analysis Batch Quality Control

Project Name: MAHER WELLS

Project Number: 20107

Lab Number:

L1730552

Report Date:

09/18/17

	Native	MS	MS	MS		MSD MSD			Recovery			RPD
Parameter	Sample	Added	Found	%Recovery	Qual	Found	%Recovery	Qual	Limits	RPD	Qual	Limits
Perfluorinated Alkyl Acids by E	PA 537 - Ma	nsfield Lab	Associated s	sample(s): 01-05	QC Ba	tch ID: Wo	G1037665-5	QC San	nple: L1730	552-02	Client	ID: TROJAN-9
Perfluorooctanoic Acid (PFOA)	20.4	34.5	66.4	133	Q	-	-		70-130	-		30
Perfluorooctanesulfonic Acid (PFOS)	73.0	31.9	116	135	Q	-	-		70-130	-		30

	MS	MSD	Acceptance
Surrogate	% Recovery Qualify	ier % Recovery Qualifier	Criteria
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	90		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	88		70-130
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	115		70-130

## Lab Duplicate Analysis Batch Quality Control

MAHER WELLS

Lab Number:

L1730552

**Project Number:** 20107

**Project Name:** 

09/18/17 Report Date:

Parameter	Native Sample	Duplio	cate Sample	Units	RPD	Qual	RPD Limits
Perfluorinated Alkyl Acids by EPA 537 - Mansfield La RAW-9	b Associated sample(s):	01-05	QC Batch ID:	WG1037665-4	QC Sam	ple: L17305	52-01 Client ID:
Perfluorooctanoic Acid (PFOA)	20.7		20.3	ng/l	2		30
Perfluorooctanesulfonic Acid (PFOS)	72.5		69.7	ng/l	4		30

			Acceptance	
Surrogate	%Recovery Qua	lifier %Recovery Q	ualifier Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	116	112	70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	84	80	70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	85	84	70-130	

### **METALS**



Project Name: MAHER WELLS Lab Number: L1730552

Project Number: 20107 Report Date: 09/18/17

**SAMPLE RESULTS** 

 Lab ID:
 L1730552-01
 Date Collected:
 08/30/17 09:00

 Client ID:
 RAW-9
 Date Received:
 08/30/17

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab										
Iron, Total	0.089		mg/l	0.050		1	08/31/17 14:20	0 09/06/17 18:10	EPA 3005A	19,200.7	AB
Manganese, Total	0.053		mg/l	0.010		1	08/31/17 14:20	0 09/06/17 18:10	EPA 3005A	19,200.7	AB



Project Name: MAHER WELLS Lab Number: L1730552

Project Number: 20107 Report Date: 09/18/17

**SAMPLE RESULTS** 

 Lab ID:
 L1730552-02
 Date Collected:
 08/30/17 09:00

 Client ID:
 TROJAN-9
 Date Received:
 08/30/17

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab										
Iron, Total	0.086		mg/l	0.050		1	08/31/17 14:20	0 09/06/17 18:15	EPA 3005A	19,200.7	AB
Manganese, Total	0.051		mg/l	0.010		1	08/31/17 14:20	0 09/06/17 18:15	EPA 3005A	19,200.7	AB



Project Name: MAHER WELLS Lab Number: L1730552

Project Number: 20107 Report Date: 09/18/17

**SAMPLE RESULTS** 

 Lab ID:
 L1730552-03
 Date Collected:
 08/30/17 09:00

 Client ID:
 FILTER E-9
 Date Received:
 08/30/17

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab										
Iron, Total	0.148		mg/l	0.050		1	08/31/17 14:20	0 09/06/17 18:19	EPA 3005A	19,200.7	AB
Manganese, Total	0.087		mg/l	0.010		1	08/31/17 14:20	0 09/06/17 18:19	EPA 3005A	19,200.7	AB



Project Name: MAHER WELLS Lab Number: L1730552

Project Number: 20107 Report Date: 09/18/17

**SAMPLE RESULTS** 

 Lab ID:
 L1730552-04
 Date Collected:
 08/30/17 09:00

 Client ID:
 FILTER F-9
 Date Received:
 08/30/17

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab										
Iron, Total	ND		mg/l	0.050		1	08/31/17 14:20	0 09/06/17 18:24	EPA 3005A	19,200.7	AB
Manganese, Total	0.050		mg/l	0.010		1	08/31/17 14:20	0 09/06/17 18:24	EPA 3005A	19,200.7	AB



Project Name: MAHER WELLS

Project Number: 20107

Lab Number:

L1730552

**Report Date:** 09/18/17

Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield	d Lab for sample(s):	01-04 B	atch: W	G10374	19-1				
Iron, Total	ND	mg/l	0.050		1	08/31/17 14:20	09/06/17 16:56	19,200.7	AB
Manganese, Total	ND	mg/l	0.010		1	08/31/17 14:20	09/06/17 16:56	19,200.7	AB

**Prep Information** 

Digestion Method: EPA 3005A



09/18/17

## Lab Control Sample Analysis Batch Quality Control

Project Name: MAHER WELLS

Lab Number: L1730552

**Project Number:** 20107

Report Date:

Parameter	LCS %Recovery Qu	LCSD ual %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sa	ample(s): 01-04 Batch: W	/G1037419-2					
Iron, Total	104	-		85-115	-		
Manganese, Total	98	-		85-115	_		



### Matrix Spike Analysis Batch Quality Control

Project Name: MAHER WELLS

Project Number: 20107

Lab Number: L1730552

**Report Date:** 09/18/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery Qu	Recovery ial Limits	RPD Qual	RPD Limits
Total Metals - Mansfield Lab	Associated sam	ple(s): 01-04	QC Bat	ch ID: WG1037	7419-3	QC Sam	nple: L1730578-01	Client ID: MS	S Sample	
Iron, Total	0.053	1	1.11	106		-	-	75-125	-	20
Manganese, Total	0.010	0.5	0.508	100		-	-	75-125	-	20
Total Metals - Mansfield Lab	Associated sam	ple(s): 01-04	QC Bat	ch ID: WG1037	7419-7	QC Sam	nple: L1730611-01	Client ID: MS	S Sample	
Iron, Total	0.082	1	1.16	108		-	-	75-125	-	20
Manganese, Total	ND	0.5	0.518	104		-	-	75-125	-	20

# INORGANICS & MISCELLANEOUS



Project Name: MAHER WELLS Lab Number: L1730552

Project Number: 20107 Report Date: 09/18/17

**SAMPLE RESULTS** 

Lab ID: L1730552-01

Client ID: RAW-9

Sample Location: BARNSTABLE, MA

Matrix: Dw

Date Collected: 08/30/17 09:00

Date Received: 08/30/17

Field Prep: Not Specified

Parameter	Result Q	ualifier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	Westborough Lab								
Turbidity	0.30	NTU	0.20		1	-	08/31/17 04:15	44,180.1	VB
Alkalinity, Total	13.8	mg CaCO3/L	2.00	NA	1	-	09/01/17 19:30	121,2320B	MR
pH (H)	6.1	SU	-	NA	1	-	08/31/17 06:23	121,4500H+-B	VB



L1730552

Lab Number:

Project Name: MAHER WELLS

Project Number: 20107 Report Date: 09/18/17

Method	Blank	Analysis	
Batch	Quality	Control	

Parameter	Result Qualit	fier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - V	Vestborough Lab for	sample(s): 01	Batch:	WG10	37180-1				
Turbidity	ND	NTU	0.20		1	-	08/31/17 04:15	44,180.1	VB
General Chemistry - V	Vestborough Lab for	sample(s): 01	Batch:	WG10	37999-1				
Alkalinity, Total	ND	mg CaCO3/L	2.00	NA	1	-	09/01/17 19:30	121,2320B	MR



## Lab Control Sample Analysis Batch Quality Control

Project Name: MAHER WELLS

**Project Number:** 

20107

Lab Number:

L1730552

Report Date:

09/18/17

Parameter	LCS %Recovery Qua	LCSD al %Recovery	%Recovery Qual Limits	RPD	Qual RF	PD Limits
General Chemistry - Westborough La	ab Associated sample(s): 01	Batch: WG1037180-2				
Turbidity	94	-	90-110	-		
General Chemistry - Westborough La	ab Associated sample(s): 01	Batch: WG1037205-1				
рН	100	-	99-101	-		5
General Chemistry - Westborough La	ab Associated sample(s): 01	Batch: WG1037999-2				
Alkalinity, Total	106	-	90-110	-		10



### Matrix Spike Analysis Batch Quality Control

Project Name: MAHER WELLS

Project Number: 20107

Lab Number:

L1730552

Report Date:

09/18/17

Parameter Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual Found	MSD %Recovery Qua	Recovery Limits	RPD Q	RPD ual Limits
General Chemistry - Westboro	ugh Lab Asso	ciated samp	le(s): 01	QC Batch ID: V	VG1037999-4	QC Sample: L173020	2-01 Client	ID: MS S	ample
Alkalinity, Total	419	100	519	100	-	-	86-116	-	10



## Lab Duplicate Analysis Batch Quality Control

Project Name: MAHER WELLS

**Project Number:** 20107

**Lab Number:** L1730552 **Report Date:** 09/18/17

Parameter	Nativ	e Sample	Duplicate Sam	ple Units	RPD	Qual RPI	) Limits
General Chemistry - Westborough Lab	Associated sample(s): 0	O1 QC Batch ID:	WG1037180-3	QC Sample: L1730	515-01 CI	ient ID: DUP Sa	mple
Turbidity		0.24	0.22	NTU	9		13
General Chemistry - Westborough Lab	Associated sample(s): 0	01 QC Batch ID:	WG1037205-2	QC Sample: L1730	526-01 CI	ient ID: DUP Sa	mple
рН		6.7	6.7	SU	0		5
General Chemistry - Westborough Lab	Associated sample(s): 0	01 QC Batch ID:	WG1037999-3	QC Sample: L1730	202-01 CI	ient ID: DUP Sa	mple
Alkalinity, Total		419	423	mg CaCO3/L	1		10



**Lab Number:** L1730552

Report Date: 09/18/17

Project Name: MAHER WELLS

Project Number: 20107

### Sample Receipt and Container Information

Were project specific reporting limits specified?

**Cooler Information** 

Cooler Custody Seal

A Absent B Absent

Container In	formation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	рН	рН	deg C	Pres	Seal	Date/Time	Analysis(*)
L1730552-01A	Plastic 120ml HNO3 preserved	В	<2	<2	7.4	Υ	Absent		FE-UI(180),MN-UI(180)
L1730552-01B	Plastic 120ml Other preserved (sub-lab)	В	7	7	7.4	Υ	Absent		SUB-BROMATE(0)
L1730552-01C	Plastic 250ml unpreserved/No Headspace	В	NA		7.4	Υ	Absent		ALK-T-2320(14),TURB-180(2),PH-4500(.01)
L1730552-01D	Plastic 250ml Trizma preserved	В	NA		7.4	Υ	Absent		A2-537-PFOA/PFOS(14)
L1730552-01E	Plastic 250ml Trizma preserved	В	NA		7.4	Υ	Absent		A2-537-PFOA/PFOS(14)
L1730552-01F	Plastic 250ml Trizma preserved	В	NA		7.4	Υ	Absent		A2-537-PFOA/PFOS(14)
L1730552-01G	Amber 500ml NaSulfite/NaHSO4 preserved	В	4	4	7.4	Υ	Absent		A2-14DIOXANE-522(28)
L1730552-01H	Amber 500ml NaSulfite/NaHSO4 preserved	В	4	4	7.4	Υ	Absent		A2-14DIOXANE-522(28)
L1730552-02A	Plastic 120ml HNO3 preserved	В	<2	<2	7.4	Υ	Absent		FE-UI(180),MN-UI(180)
L1730552-02B	Plastic 120ml Other preserved (sub-lab)	В	7	7	7.4	Υ	Absent		SUB-BROMATE(0)
L1730552-02D	Plastic 250ml Trizma preserved	В	NA		7.4	Υ	Absent		A2-537-PFOA/PFOS(14)
L1730552-02E	Plastic 250ml Trizma preserved	В	NA		7.4	Υ	Absent		A2-537-PFOA/PFOS(14)
L1730552-02F	Plastic 250ml Trizma preserved	В	NA		7.4	Υ	Absent		A2-537-PFOA/PFOS(14)
L1730552-02G	Amber 500ml NaSulfite/NaHSO4 preserved	В	4	4	7.4	Υ	Absent		A2-14DIOXANE-522(28)
L1730552-02H	Amber 500ml NaSulfite/NaHSO4 preserved	В	4	4	7.4	Υ	Absent		A2-14DIOXANE-522(28)
L1730552-03A	Plastic 120ml HNO3 preserved	В	<2	<2	7.4	Υ	Absent		FE-UI(180),MN-UI(180)
L1730552-03B	Plastic 120ml Other preserved (sub-lab)	В	7	7	7.4	Υ	Absent		SUB-BROMATE(0)
L1730552-03D	Plastic 250ml Trizma preserved	В	NA		7.4	Υ	Absent		A2-537-PFOA/PFOS(14)
L1730552-03E	Plastic 250ml Trizma preserved	В	NA		7.4	Υ	Absent		A2-537-PFOA/PFOS(14)
L1730552-03F	Plastic 250ml Trizma preserved	В	NA		7.4	Υ	Absent		A2-537-PFOA/PFOS(14)
L1730552-03G	Amber 500ml NaSulfite/NaHSO4 preserved	В	4	4	7.4	Υ	Absent		A2-14DIOXANE-522(28)
L1730552-03H	Amber 500ml NaSulfite/NaHSO4 preserved	В	4	4	7.4	Υ	Absent		A2-14DIOXANE-522(28)



*Lab Number:* L1730552

Report Date: 09/18/17

Project Number: 20107

MAHER WELLS

Project Name:

Container In	Container Information			Final	101116			Frozen			
Container ID	Container Type	Cooler	pН	pН	deg C	Pres	Seal	Date/Time	Analysis(*)		
L1730552-04A	Plastic 120ml HNO3 preserved	В	<2	<2	7.4	Υ	Absent		FE-UI(180),MN-UI(180)		
L1730552-04B	Plastic 120ml Other preserved (sub-lab)	В	7	7	7.4	Υ	Absent		SUB-BROMATE(0)		
L1730552-04D	Plastic 250ml Trizma preserved	В	NA		7.4	Υ	Absent		A2-537-PFOA/PFOS(14)		
L1730552-04E	Plastic 250ml Trizma preserved	В	NA		7.4	Υ	Absent		A2-537-PFOA/PFOS(14)		
L1730552-04F	Plastic 250ml Trizma preserved	В	NA		7.4	Υ	Absent		A2-537-PFOA/PFOS(14)		
L1730552-04G	Amber 500ml NaSulfite/NaHSO4 preserved	В	3	3	7.4	Υ	Absent		A2-14DIOXANE-522(28)		
L1730552-04H	Amber 500ml NaSulfite/NaHSO4 preserved	В	3	3	7.4	Υ	Absent		A2-14DIOXANE-522(28)		
L1730552-05A	Plastic 250ml Trizma preserved	Α	NA		4.2	Υ	Absent		A2-537-PFOA/PFOS(14)		

Project Name: MAHER WELLS Lab Number: L1730552

Project Number: 20107 Report Date: 09/18/17

#### **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**

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

#### Terms

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.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

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.

#### 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

Report Format: Data Usability Report



Project Name: MAHER WELLS Lab Number: L1730552

Project Number: 20107 Report Date: 09/18/17

#### **Data Qualifiers**

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

- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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: MAHER WELLS Lab Number: L1730552

Project Number: 20107 Report Date: 09/18/17

#### REFERENCES

Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

- Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.
- Determination of 1,4-Dioxane in Drinking Water by Solid Phase Extraction (SPE) and Gas Chromatography/Mass Spectrometry (GC/MS) with Selected Ion Monitoring (SIM). EPA Method 522, EPA/600/R-08/101. Version 1.0, September 2008.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.
- Determination of Selected Perfluorintated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537, EPA/600/R-08/092. Version 1.1, September 2009.

#### 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

ID No.:**17873** Revision 10

Published Date: 1/16/2017 11:00:05 AM

Page 1 of 1

#### **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, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; 4-Ethyltoluene, Azobe

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-Colilert-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-Colilert-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.

Document Type: Form

Phone: "274 "Z	320 Forbes Blv. 01581 Mansfield, MA 10220 Tel: 508-822-93  On    Late   Late	Project Project Project ALPHA	t Information  Name: Mahe  Location: Barys  #: Zolo7  Manager: Erila  Quote #:  Around Time	TELLO	ma	Report  ADE  Regula  Yes  Yes  Yes  Yes  Yes  Yes	tory Rec No MA M No Matrix No GW1 No NPD	ICP Analyti Spike Red Standards ES RGP Program	s & cal Metho	Proje ods this SI	ct Info	Same rmation Ye equire	Information as Client in on Requires   No. 10	rements CT RCP Analytical Me	
	Project Informat	ion: Date I			Sampler Initials	D 624	METALS: CINCP 13 CI	EPH: DRanges & Targets DPP13	L PCB L PEST	UQuant Only OFine.	All F. Worthing	44 Dilled	The met of	SAMPLE II  Filtration Field Lab to do  Preservation Lab to do	# B O T T L E
30552-01 02 03 04 05	Rew-9 Trajen-6 Filter Field B	i E-9 F-9	\$\\ 3c		4 RD					* X X	X X	X X X X	X X X X	Sample Comme	7 7
Container Type P= Plastic A= Amber glass V= Vial G= Glass B= Bacteria cup C= Cube O= Other E= Encore D= BOD Bottle	Preservative  A= None  B= HCI C= HNO <sub>3</sub> D= H <sub>2</sub> SO <sub>4</sub> E= NaOH F= MeOH G= NaHSO <sub>4</sub> H = Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> I= Ascorbic Àcid J = NH <sub>4</sub> CI K= Zn Acetate O= Other	Relinqu	ished By:	Containe Prese	ervative	Service of the servic	Receive	ed By:	42		ate/Tim		000 10101	es submitted are sub erms and Conditions rse side. 01-01 (rev. 12-Mar-2012)	oject to

SUB UPS:	Eurofins, IN	1.0														-			
41.71	CHAIN OF	CUSTO	DY	PAGE 1 OF	1	Da	ate Rec'o	d in Lai	b:					A	LPHA	Job	#: L	1730552	
ALPH	YTICAL	Project Info	rmation			R	eport l	Infor	matic	n Da	ta De	liver	ables	В	illing	Infor	mati	on	
Westborough, MA	Mansfield, MA	Dunis of N					FAX				EMAI	L			Same				
TEL: 508-898-9220 FAX: 508-898-9193	TEL: 508-822-9300 FAX: 508-822-3288	Project Name:					ADEx				Add'l								_
Client Informa	tion	Project Location	on: MA				egulat ate/Fed l			reme	nts/R	eport	Lim						
Client: Alpha Ana	lytical Lab	Project #:					nen eu i	rogra					-	Cn	iteria		_		_
Address: 8 Walkup Drive		Project Manager: Ethan Leighton				M	CP PR	ESU	MPTI	VE CI	ERTA	INTY	-CT I	REAS	ONA	BLE (	CONI	FIDENCE PROTOCOL	. 5
Westborough, Ma 01581		ALPHA Quote #:				7_0	Yes			0	Are	MCP	Analyt	ical Me	thods F	Require	d?		
Phone: 508-898-9220		Turn-Around Time					Yes	10	□ N	0	Are	CT R	CP (Re	easonal	ble Cor	fidence	e Proto	ocols) Required?	-
Fax:							IALYS	015		Т		Т	Т	Т			_	SAMPLE HANDLING	ġ
Email: subreports	@alphalab.com			SIT (ONLT IF F	RE-APPROVED)													Filtration	A
	re been Previously analyzed by Alpha	Due Date:	Time:			ŀ												☐ Done ☐ Not Needed	#
	pecific Requirements/Commer											i i						☐ Lab to do	В
	Alpha Job #L1730552 on this repo																	Preservation  ☐ Lab to do	Ţ
												-						(Please specify below)	Ŀ
																		Delow)	S
ALPHA Lab ID	Sample ID	Coll	ection	Sample	Sampler's	te e								ŀ					
(Lab Use Only)		Date	Time	Matrix	Initials	Bromate												Sample Specific Comments	
	RAW-9	8/30/17	09:00	W		X								1		+	+		1
	TROJAN-9	8/30/17	09:00	W		X													1
	FILTER E-9	8/30/17	09:00	W		X												1	1
	FILTER F-9	8/30/17	09:00	W		X									$\top$	$\top$		1	1
																1			
																$\top$			_
																	+	+	_
														1				+	-
																	+		_
														+	+	+-	-	+	_
PLEASE ANSWER	QUESTIONS ABOVE!			Cor	ntainer Type	Р			-	-	-		-	+-	-	1.	1.		_
					Preservative	A			-	-	_	_		-	-	+	-	Please print clearly, legibly	
IS YOUR	PROJECT		Polingui		. Joon valive								10.55				Ľ,	and completely. Samples can not be logged in and	
	or CT RCP?		Relinquished By:			Da	Date/Time Received By:					Date/Time				turnaround time clock will not start until any ambiguities are resolved. All samples			
FORM NO: 01-01(I) (rev. 30-JUL-07)	UI CI KUP!		7	.51000		-												submitted are subject to Alpha's Payment Terms	
Page 43 of 4	0													-					
Faut 45 01 4	7														1				



### LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at  $(800)\ 332-4345$  or  $(574)\ 233-4777$ .

This report may not be reproduced, except in full, without written approval from EEA.

Page 44 of 49 Page 1 of 6



### **STATE CERTIFICATION LIST**

State	Certification	State	Certification			
Alabama	40700	Missouri	880			
Alaska	IN00035	Montana	CERT0026			
Arizona	AZ0432	Nebraska	NE-OS-05-04			
Arkansas	IN00035	Nevada	IN00035			
California	2920	New Hampshire*	2124			
Colorado	IN035	New Jersey*	IN598			
Colorado Radiochemistry	IN035	New Mexico	IN00035			
Connecticut	PH-0132	New York*	11398			
Delaware	IN035	North Carolina	18700			
Florida*	E87775	North Dakota	R-035			
Georgia	929	Ohio	87775			
Hawaii	IN035	Oklahoma	D9508			
Idaho	IN00035	Oregon (Primary AB)*	4074-001			
Illinois*	200001	Pennsylvania*	68-00466			
Illinois Microbiology	17767	Puerto Rico	IN00035			
Illinois Radiochemistry	IN00035	Rhode Island	LAO00343			
Indiana Chemistry	C-71-01	South Carolina	95005			
Indiana Microbiology	M-76-07	South Dakota	IN00035			
Iowa	098	Tennessee	TN02973			
Kansas*	E-10233	Texas*	T104704187-15-8			
Kentucky	90056	Texas/TCEQ	TX207			
Louisiana*	LA170006	Utah*	IN00035			
Maine	IN00035	Vermont	VT-8775			
Maryland	209	Virginia*	460275			
Massachusetts	M-IN035	Washington	C837			
Michigan	9926	West Virginia	9927 C			
Minnesota*	018-999-338	Wisconsin	999766900			
Mississippi	IN035	Wyoming	IN035			
EPA	IN00035					

\*NELAP/TNI Recognized Accreditation Bodies

Revision date: 08/28/2017

Page 45 of 49 Page 2 of 6



110 South Hill Street South Bend, IN 46617 Tel: (574) 233-4777 Fax: (574) 233-8207 1 800 332 4345

### Laboratory Report

Client: Alpha Analytical Report: 397084

Attn: Ethan Leighton Priority: Standard Written

35 Whitney Road Status: Final

Suite 5 PWS ID: Not Supplied

Mahwah, NJ 07430

Sample Information										
EEA ID#	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time					
3770528	Raw-9/L1730552-1	317.0	08/30/17 09:00	Client	09/01/17 09:45					
3770529	Trojan-9/L1730552-2	317.0	08/30/17 09:00	Client	09/01/17 09:45					
3770530	Filter E-9/L1730552-3	317.0	08/30/17 09:00	Client	09/01/17 09:45					
3770531	Filter F-9/L1730552-4	317.0	08/30/17 09:00	Client	09/01/17 09:45					

#### **Report Summary**

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call James Van Fleit at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from EEA.

Jun Van Hit ASM

09/07/2017

Date

Authorized Signature
Client Name: Alp

Alpha Analytical

Report #: 3

397084

Page 1 of 3

Page 46 of 49 Page 3 of 6

Title

Serial\_No:09181716:28

Client Name: Alpha Analytical Report #: 397084

Sampling Point: Raw-9/L1730552-1 PWS ID: Not Supplied

			Gene	ral Chemi	stry				
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID#
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L		09/06/17 03:05	3770528

Sampling Point: Trojan-9/L1730552-2 PWS ID: Not Supplied

			Gene	ral Chemi	stry				
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID#
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L		09/06/17 03:30	3770529

Sampling Point: Filter E-9/L1730552-3 PWS ID: Not Supplied

			Gene	ral Chemi	stry				
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID#
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L		09/06/17 03:55	3770530

Sampling Point: Filter F-9/L1730552-4 PWS ID: Not Supplied

			Gene	ral Chemi	stry				
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID#
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L		09/06/17 04:20	3770531

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	۸	!

Client Name: Alpha Analytical Report #: 397084

#### **Lab Definitions**

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

**Internal Standards (IS)** - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

**Laboratory Duplicate (LD)** - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

**Laboratory Method Blank (LMB)** / **Laboratory Reagent Blank (LRB)** - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

7
9
S
(2)

SUB UPS: Eurofins, IN	ofins, IN	~			- 7.9							325912	~ 1
e 49	CHAIN OF CUSTODY	CUSTO		PAGE 1 OF 1		Date Rec'd in Lab	ı Lab:			ALPH/	ALPHA Job #: L1730552	730552	
CHCJD of 4		Project Information	nation			Report Inf	formation	Data De	Report Information Data Deliverables	Billing	Billing Information	L	
6 ANALYTICAL						□ FAX		☐ EMAIL		Sam	Same as Client info	PO #:	
	Mansfield, MA TEL: 508-822-9300	Project Name:				□ ADEx		□ Add'l [	Add'l Deliverables		397	180	
Client Information	PAX: 506-622-5266	Project Location: MA	. MA		100	Regulator	y Require	ments/R	Regulatory Requirements/Report Limits	1000			
		10000				State/red Program	ogram			Criteria			
Client: Alpha Analytical Lab	Lab	Project #:											
Address: 8 Walkup Drive	/e	Project Manager: Ethan Leighton	r: Ethan Leight	no		MCP PRE	SUMPTIV	E CERIA	INTY-CT R	EASONA	BLECONF	MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS	က
Westborough, Ma 01581	31	ALPHA Quote #:				☐ Yes	2 2	Are	Are MCP Analytical Methods Required?  Are CT RCP (Reasonable Confidence P	sal Methods	Kequired?	Are INCP Analytical Methods Required? Are CT RCP (Reasonable Confidence Protocols) Remitred?	
Phone: 508-898-9220		Turn-Around Time	Time			ANAL YSIS							<b>F</b> 0
Fax:		Standard Standard	Ιп	Rush (ONLY IF PRE-APPROVED)	PPROVED)							SAMPLE HANDLING	FE
Email: subreports@alphalab.com	halab.com											□ Done	-
These samples have been	These samples have been Previously analyzed by Alpha	Due Date:	Time:									□ Not Needed	## (
		: : :										Discontigue	m C
Other Project Specif Please reference Alph≀	Other Project Specific Requirements/Comments/Detection Limits: Please reference Alpha Job #L1730552 on this report.	/Detection Limit	. <b>.</b>									Freservation ☐ Lab to do (Please specify	) F F = W
		}				til							ı o
ALPHA Lab ID	Sample ID	Colli	Collection	Sample	Sampler's	əţe							
(Lab Use Only)		Date	Time	Matrix	Initials	Broms						Sample Specific Comments	
3770528 R	RAW-9 41730552-	8/30/17	00:60	W		×							-
745.75	TROJAN-9	8/30/17	00:60	W		×							-
S30 F	FILTER E-9	8/30/17	00:60	W		×							-
	FILTER F-9 V - 4	8/30/17	00:60	W		×							-
										Seria			
										al_N			
										lo:09			
							1		1	918	1		
PLEASE ANSWER QUESTIONS ABOVE!	ESTIONS ABOVE!			Contai	Container Type	۵.		,		, 1,71		Hind shoots toke	;
				Pre	Preservative	V V	1			6:2	1	and completely. Samples on the logged in and	s can
IS YOUR P	PROJECT		Relinquished	ished By:		J Date/Time		Rece	Received By:	3	Date/Time	turnaround time clock will not start until any ambiguities are	l not are
MEA MCP o	or CT RCP?		202	1	×	151/17	7	3	7-14	Ţ	5/1/2	submitted are subject to Alpha's Payment Terms.	
(rev <b>Q</b> JUL-0?)													



#### ANALYTICAL REPORT

Lab Number: L1731241

Client: Blueleaf Incorporated

57 Dresser Hill Road Charlton, MA 01507

ATTN: Erik Grotton
Phone: (508) 248-7094

Project Name: MAHER WALL PILOT

Project Number: 20107 Report Date: 09/21/17

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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



Project Name: MAHER WALL PILOT

Project Number: 20107

**Lab Number:** L1731241 **Report Date:** 09/21/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1731241-01	RAW-10	DW	BARNSTABLE, MA	09/06/17 09:30	09/06/17
L1731241-02	TROJAN-10	DW	BARNSTABLE, MA	09/06/17 09:30	09/06/17
L1731241-03	FILTER E-10	DW	BARNSTABLE, MA	09/06/17 09:30	09/06/17
L1731241-04	FILTER F-10	DW	BARNSTABLE, MA	09/06/17 09:30	09/06/17
L1731241-05	FIELD BLANK	DW	BARNSTABLE, MA	09/06/17 09:30	09/06/17



L1731241

Lab Number:

Project Name: MAHER WALL PILOT

Project Number: 20107 Report Date: 09/21/17

#### **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.	



L1731241

Lab Number:

Project Name: MAHER WALL PILOT

Project Number: 20107 Report Date: 09/21/17

#### **Case Narrative (continued)**

Report Submission

The analysis of Bromate was subcontracted. A copy of the laboratory report is included as an addendum.

Please note: This data is only available in PDF format and is not available on Data Merger.

Sample Receipt

The analysis of 1,4-Dioxane by Method 522 was received unpreserved.

Perfluorinated Alkyl Acids

L1731241-05: The surrogate recovery is above the acceptance criteria for perfluoro-n-[1,2-13c2]hexanoic acid (13c-pfhxa) (135%). Since the sample was non-detect for all target analytes, re-analysis was not required.

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:

Title: Technical Director/Representative Date: 09/21/17

600, Sharow Kelly Stenstrom

#### **ORGANICS**



#### **SEMIVOLATILES**



Project Name: MAHER WALL PILOT Lab Number: L1731241

Project Number: 20107 Report Date: 09/21/17

SAMPLE RESULTS

Lab ID: L1731241-01 Date Collected: 09/06/17 09:30

Client ID: RAW-10 Date Received: 09/06/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method:EPA 522

Matrix: Dw Extraction Date: 09/20/17 11:00

Analytical Method: 120,522

Analyst: TJ

09/20/17 20:43

Analytical Date:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.407		ug/l	0.144		1
Surrogate			% Recovery	Qualifier		eptance riteria
1,4-Dioxane-d8			85			70-130



Project Name: MAHER WALL PILOT Lab Number: L1731241

Project Number: 20107 Report Date: 09/21/17

SAMPLE RESULTS

09/19/17 21:32

Lab ID: Date Collected: 09/06/17 09:30

Client ID: RAW-10 Date Received: 09/06/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method:EPA 537

Matrix: Dw Extraction Date: 09/13/17 17:0

Matrix: Dw Extraction Date: 09/13/17 17:00
Analytical Method: 122,537

Analyst: AR

Analytical Date:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Man	sfield Lab					
Perfluorooctanoic Acid (PFOA)	17.8		ng/l	1.67		1
Perfluorooctanesulfonic Acid (PFOS)	68.5		ng/l	1.67		1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	108		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	114		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	102		70-130	



Project Name: MAHER WALL PILOT Lab Number: L1731241

Project Number: 20107 Report Date: 09/21/17

SAMPLE RESULTS

Lab ID: Date Collected: 09/06/17 09:30

Client ID: TROJAN-10 Date Received: 09/06/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method: EPA 522

Matrix: Dw Extraction Date: 09/20/17 11:00
Analytical Method: 120,522
Analytical Date: 09/20/17 21:07

Analyst: TJ

Parameter	Result	Qualifier Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfi	eld Lab				
1,4-Dioxane	ND	ug/l	0.144		1
Surrogate		% Reco	very Qualific		eptance riteria
1.4-Dioxane-d8		79			70-130



L1731241

09/21/17

Project Name: MAHER WALL PILOT Lab Number:

Project Number: 20107

L1731241-03

FILTER E-10

BARNSTABLE, MA

**SAMPLE RESULTS** 

Date Collected: 09/06/17 09:30

Date Received: 09/06/17
Field Prep: Not Specified

Extraction Method: EPA 537

Report Date:

Extraction Date: 09/13/17 17:00

Matrix: Dw

Lab ID:

Client ID:

Sample Location:

Analytical Method: 122,537

Analytical Date: 09/19/17 21:50

Analyst: AR

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mans	sfield Lab					
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.72		1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.72		1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	111		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	114		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	110		70-130	



L1731241

**Project Name:** Lab Number: MAHER WALL PILOT

**Project Number:** Report Date: 20107

09/21/17

**SAMPLE RESULTS** 

Lab ID: L1731241-04 Date Collected: 09/06/17 09:30

Client ID: Date Received: FILTER F-10 09/06/17 Sample Location: Field Prep: BARNSTABLE, MA Not Specified

Extraction Method: EPA 537 Matrix: Dw Extraction Date: 09/13/17 17:00

Analytical Method: 122,537

Analyst: AR

09/19/17 22:09

Analytical Date:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537 -	Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.67		1	
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.67		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	114		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	118		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	107		70-130



L1731241

**Project Name:** Lab Number: MAHER WALL PILOT

**Project Number:** Report Date: 20107

09/21/17

**SAMPLE RESULTS** 

Lab ID: L1731241-05 Date Collected: 09/06/17 09:30

Client ID: Date Received: FIELD BLANK 09/06/17 Sample Location: Field Prep: BARNSTABLE, MA Not Specified Extraction Method: EPA 537

Matrix: Dw Extraction Date: 09/13/17 17:00 Analytical Method: 122,537

Analytical Date: 09/19/17 23:34 Analyst: AR

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537 -	Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.72		1	
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.72		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	135	Q	70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	120		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	122		70-130



L1731241

Lab Number:

Project Name: MAHER WALL PILOT

Project Number: 20107 Report Date: 09/21/17

ethod Blank Analysis

Method Blank Analysis Batch Quality Control

Analytical Method: 122,537 Extraction Method: EPA 537

Analytical Date: 09/19/17 21:22 Extraction Date: 09/13/17 17:00

Analyst: AR

Parameter	Result	Qualifier	Units	RL	MDL	
Perfluorinated Alkyl Acids by EPA 5	37 - Mansfi	eld Lab for	sample(s):	01,03-05	Batch:	WG1041285-1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00		
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00		

			Acceptance	
Surrogate	%Recovery	Qualifier	Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	112		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	115		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	117		70-130	



L1731241

**Project Name:** MAHER WALL PILOT

**Project Number:** 20107 Report Date: 09/21/17

Lab Number:

Method Blank Analysis Batch Quality Control

Extraction Method: EPA 522 Analytical Method: 120,522

Analytical Date: 09/20/17 12:09 09/20/17 11:00 Extraction Date:

Analyst: TJ

Parameter	Result	Qualifier	Units		RL	MDL
1,4 Dioxane by EPA 522 - Mans	field Lab for sa	ample(s): 0	1-02	Batch:	WG104374	6-1
1,4-Dioxane	ND		ug/l	C	).150	

	Acceptanc	е
Surrogate	%Recovery Qualifier Criteria	
1.4-Dioxane-d8	81 70-130	



### Lab Control Sample Analysis Batch Quality Control

**Project Name:** MAHER WALL PILOT

Lab Number:

L1731241

**Project Number:** 20107

Report Date: 09/21/17

	LCS		LCSD		%Recove	ry		RPD	
Parameter	%Recovery	Qual	%Recovery	Qual	Limits	RPD	Qual	Limits	
Perfluorinated Alkyl Acids by EPA 537	- Mansfield Lab Assoc	ciated sample(s	s): 01,03-05	Batch: V	VG1041285-2	WG1041285-3			
Perfluorooctanoic Acid (PFOA)	103		115		70-130	11		30	
Perfluorooctanesulfonic Acid (PFOS)	101		109		70-130	8		30	

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	108		110		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	110		110		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	115		115		70-130	



### Lab Control Sample Analysis Batch Quality Control

**Project Name:** MAHER WALL PILOT

**Project Number:** 20107 Lab Number:

L1731241

Report Date:

09/21/17

Parameter	LCS %Recovery Q	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	RF Qual Lin	PD nits
1,4 Dioxane by EPA 522 - Mansfield Lab	Associated sample(s):	01-02	Batch: WG104374	46-2 W	G1043746-3			
1,4-Dioxane	76		81		70-130	6	3	30

Surrogate	LCS	LCSD	Acceptance
	%Recovery Q	Qual %Recovery	Qual Criteria
1,4-Dioxane-d8	74	82	70-130

# Matrix Spike Analysis Batch Quality Control

Project Name: MAHER WALL PILOT

Project Number: 20107

Lab Number:

L1731241

Report Date:

09/21/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery		Recovery Limits	RPD	Qual	RPD Limits	
Perfluorinated Alkyl Acids by E E-10	EPA 537 - Ma	nsfield Lab	Associated sa	ample(s): 01,03-0	)5 QC	Batch ID:	WG1041285-5	QC S	Sample: L1	731241-(	03 Clie	ent ID: FILTE	:R
Perfluorooctanoic Acid (PFOA)	ND	34.5	34.7	101		-	-		70-130	-		30	
Perfluorooctanesulfonic Acid (PFOS)	ND	31.9	34.1	107		-	-		70-130	-		30	

	MS		MS	SD	Acceptance
Surrogate	% Recovery Qu	ualifier	% Recovery	Qualifier	Criteria
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	106				70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	110				70-130
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	109				70-130

# Lab Duplicate Analysis Batch Quality Control

MAHER WALL PILOT Batch Quality

Lab Number:

L1731241

**Report Date:** 09/21/17

Parameter	Native Sample	Duplicate Sample	Units	RPD C	RPD Qual Limits
Perfluorinated Alkyl Acids by EPA 537 - Mar RAW-10	nsfield Lab Associated sample(s):	01,03-05 QC Batch I	D: WG1041285-4	QC Samp	ole: L1731241-01 Client ID:
Perfluorooctanoic Acid (PFOA)	17.8	18.7	ng/l	5	30
Perfluorooctanesulfonic Acid (PFOS)	68.5	69.5	ng/l	1	30

			Acceptance	
Surrogate	%Recovery	Qualifier %Recovery	Qualifier Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	108	108	70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	114	108	70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	102	107	70-130	

**Project Name:** 

**Project Number:** 20107

#### **METALS**



Project Name: MAHER WALL PILOT Lab Number:

Domant Data

L1731241

**Project Number:** 20107

Report Date:

09/21/17

**SAMPLE RESULTS** 

Lab ID: Client ID: L1731241-01

Client ID: RAW-10

Sample Location:

RAW-10

BARNSTABLE, MA

Matrix: Dw

Date Collected:

09/06/17 09:30

Date Received:

09/06/17

Field Prep:

Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab										
Iron, Total	0.087		mg/l	0.050		1	09/08/17 15:30	0 09/11/17 23:48	EPA 3005A	19,200.7	AB
Manganese, Total	0.052		mg/l	0.010		1	09/08/17 15:30	0 09/11/17 23:48	EPA 3005A	19,200.7	AB



**Project Name:** MAHER WALL PILOT

Lab Number:

L1731241

**Project Number:** 20107 **Report Date:** 

09/21/17

**SAMPLE RESULTS** 

Lab ID: L1731241-02 Client ID: TROJAN-10

Sample Location: BARNSTABLE, MA

Matrix: Dw Date Collected:

09/06/17 09:30

Date Received: 09/06/17

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab										
Iron, Total	0.085		mg/l	0.050		1	09/08/17 15:3	0 09/11/17 23:53	EPA 3005A	19,200.7	AB
Manganese, Total	0.051		mg/l	0.010		1	09/08/17 15:3	0 09/11/17 23:53	EPA 3005A	19,200.7	AB



Project Name: MAHER WALL PILOT Lab Number:

Lab Number: L1731241

**Project Number:** 20107

Report Date:

09/21/17

**SAMPLE RESULTS** 

Lab ID: Client ID: L1731241-03 FILTER E-10

Sample Location: BARNSTABLE, MA

Matrix:

Dw

Date Collected:

09/06/17 09:30

Date Received:

09/06/17

Field Prep:

Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab										
Iron, Total	ND		mg/l	0.050		1	09/08/17 15:3	0 09/12/17 00:17	7 EPA 3005A	19,200.7	AB
Manganese, Total	0.058		mg/l	0.010		1	09/08/17 15:3	0 09/12/17 00:17	7 EPA 3005A	19,200.7	AB



Project Name: MAHER WALL PILOT

Lab Number: L1731241

**Project Number:** 20107

Report Date:

09/21/17

**SAMPLE RESULTS** 

Lab ID: Client ID: L1731241-04 FILTER F-10

Sample Location:

BARNSTABLE, MA

Matrix:

Dw

Date Collected:

09/06/17 09:30

Date Received:

09/06/17

Field Prep:

Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab										
Iron, Total	ND		mg/l	0.050		1	09/08/17 15:3	0 09/12/17 00:21	EPA 3005A	19,200.7	AB
Manganese, Total	0.048		ma/l	0.010		1	09/08/17 15:3	0 09/12/17 00:21	EPA 3005A	19,200.7	AB



**Project Name:** MAHER WALL PILOT **Lab Number:** L1731241

Project Number: 20107 Report Date: 09/21/17

# Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfi	eld Lab for sample(s):	01-04 B	atch: W	G10398	12-1				
Iron, Total	ND	mg/l	0.050		1	09/08/17 15:30	09/11/17 22:20	19,200.7	AB
Manganese, Total	ND	mg/l	0.010		1	09/08/17 15:30	09/11/17 22:20	19,200.7	AB

**Prep Information** 

Digestion Method: EPA 3005A



### Lab Control Sample Analysis Batch Quality Control

Project Name: MAHER WALL PILOT

Lab Number:

L1731241

**Project Number:** 20107

Report Date:

09/21/17

Parameter	LCS %Recovery Qua	LCSD   %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sar	mple(s): 01-04 Batch: WG	1039812-2					
Iron, Total	106	-		85-115	-		
Manganese, Total	100	-		85-115	-		

#### Matrix Spike Analysis Batch Quality Control

Project Name: MAHER WALL PILOT

Project Number: 20107

Lab Number: L1731241

**Report Date:** 09/21/17

arameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery Qu	Recovery al Limits	RPD Qual	RPD Limits
Total Metals - Mansfield Lab A	ssociated sam	nple(s): 01-04	QC Bat	ch ID: WG1039	9812-3	QC Sam	ple: L1731307-01	Client ID: MS	Sample	
Iron, Total	0.167	1	1.22	105		-	-	75-125	-	20
Manganese, Total	0.013	0.5	0.522	102		-	-	75-125	-	20
Total Metals - Mansfield Lab A	ssociated sam	nple(s): 01-04	QC Bat	ch ID: WG1039	9812-7	QC Sam	nple: L1731371-01	Client ID: MS	Sample	
Iron, Total	33.6	1	31.5	0	Q	-	-	75-125	-	20
Manganese, Total	0.382	0.5	0.829	89		-	-	75-125	-	20

# INORGANICS & MISCELLANEOUS



Project Name: MAHER WALL PILOT Lab Number:

Lab Number: L1731241

Project Number: 20107 Report Date: 09/21/17

**SAMPLE RESULTS** 

Lab ID: L1731241-01

Client ID: RAW-10

Sample Location: BARNSTABLE, MA

Matrix: Dw

Date Collected: 09/06/17 09:30

Date Received: 09/06/17

Field Prep: Not Specified

Parameter	Result Q	ualifier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	Westborough Lab								
Turbidity	0.49	NTU	0.20		1	-	09/07/17 17:01	44,180.1	AS
Alkalinity, Total	13.2	mg CaCO3/L	2.00	NA	1	-	09/07/17 09:14	121,2320B	BR
pH (H)	5.6	SU	-	NA	1	-	09/07/17 12:00	121,4500H+-B	UN



L1731241

Lab Number:

Project Name: MAHER WALL PILOT

Project Number: 20107 Report Date: 09/21/17

ct Number: 2010/ Report Date: 09/21/17

Method Blank Analysis Batch Quality Control

Parameter	Result Qua	lifier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry	- Westborough Lab fo	or sample(s): 01	Batch:	WG10	39332-1				
Alkalinity, Total	ND	mg CaCO3/L	2.00	NA	1	-	09/07/17 09:14	121,2320B	BR
General Chemistry	- Westborough Lab fo	or sample(s): 01	Batch:	WG10	39460-1				
Turbidity	ND	NTU	0.20		1	_	09/07/17 17:01	44,180.1	AS



### Lab Control Sample Analysis Batch Quality Control

Project Name: MAHER WALL PILOT

**Project Number:** 20107

Lab Number:

L1731241

Report Date:

09/21/17

Parameter	LCS %Recovery Qua	LCSD al %Recovery	%Recovery Qual Limits	RPD (	Qual RPD Limits
General Chemistry - Westborough Lab	Associated sample(s): 01	Batch: WG1039324-1			
рН	100	-	99-101	-	5
General Chemistry - Westborough Lab	Associated sample(s): 01	Batch: WG1039332-2			
Alkalinity, Total	105	-	90-110	-	10
General Chemistry - Westborough Lab	Associated sample(s): 01	Batch: WG1039460-2			
Turbidity	97	-	90-110	-	



#### Matrix Spike Analysis Batch Quality Control

Project Name: MAHER WALL PILOT

Project Number: 20107

Lab Number:

L1731241

Report Date:

09/21/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual Found	MSD %Recovery Qua	Recovery I Limits	RPD Qu	RPD <sub>ual</sub> Limits
General Chemistry - Westborou	ugh Lab Asso	ciated samp	ole(s): 01	QC Batch ID: V	WG1039332-4	QC Sample: L173115	3-02 Client	ID: MS Sa	ample
Alkalinity, Total	138	100	236	98	-	-	86-116	-	10



# Lab Duplicate Analysis Batch Quality Control

Project Name: MAHER WALL PILOT

**Project Number:** 20107

th Quality Control Lab Number: L1731241
Report Date: 09/21/17

Parameter	Native S	ample	Duplicate Sam	ple Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab A	Associated sample(s): 01	QC Batch ID:	WG1039324-2	QC Sample: L173	1330-01 C	lient ID: D	UP Sample
рН	8.1		8.1	SU	0		5
General Chemistry - Westborough Lab A	Associated sample(s): 01	QC Batch ID:	WG1039332-3	QC Sample: L173	1153-01 C	lient ID: D	UP Sample
Alkalinity, Total	88.1	I	89.8	mg CaCO3/L	2		10
General Chemistry - Westborough Lab A	Associated sample(s): 01	QC Batch ID:	WG1039460-3	QC Sample: L173	1241-01 C	lient ID: R	AW-10
Turbidity	0.49	9	0.51	NTU	4		13



Lab Number: L1731241

Report Date: 09/21/17

Project Name: MAHER WALL PILOT

Project Number: 20107

#### Sample Receipt and Container Information

Were project specific reporting limits specified?

**Cooler Information** 

Cooler Custody Seal

A Absent
B Absent

Container Info	rmation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	pН	pН	deg C	Pres	Seal	Date/Time	Analysis(*)
L1731241-01A	Plastic 120ml HNO3 preserved	Α	<2	<2	5.6	Υ	Absent		FE-UI(180),MN-UI(180)
L1731241-01B	Plastic 120ml Other preserved (sub-lab)	Α	7	7	5.6	Υ	Absent		SUB-BROMATE(0)
L1731241-01C	Plastic 250ml unpreserved/No Headspace	Α	NA		5.6	Υ	Absent		ALK-T-2320(14),TURB-180(2),PH-4500(.01)
L1731241-01D	Plastic 250ml Trizma preserved	Α	NA		5.6	Υ	Absent		A2-537-PFOA/PFOS(14)
L1731241-01E	Plastic 250ml Trizma preserved	Α	NA		5.6	Υ	Absent		A2-537-PFOA/PFOS(14)
L1731241-01F	Plastic 250ml Trizma preserved	Α	NA		5.6	Υ	Absent		A2-537-PFOA/PFOS(14)
L1731241-01G	Amber 500ml NaSulfite/NaHSO4 preserved	Α	7	7	5.6	N	Absent		A2-14DIOXANE-522(28)
L1731241-01H	Amber 500ml NaSulfite/NaHSO4 preserved	Α	7	7	5.6	N	Absent		A2-14DIOXANE-522(28)
L1731241-02A	Plastic 120ml HNO3 preserved	Α	<2	<2	5.6	Υ	Absent		FE-UI(180),MN-UI(180)
L1731241-02B	Plastic 120ml Other preserved (sub-lab)	Α	7	7	5.6	Υ	Absent		SUB-BROMATE(0)
L1731241-02G	Amber 500ml NaSulfite/NaHSO4 preserved	Α	7	7	5.6	N	Absent		A2-14DIOXANE-522(28)
L1731241-02H	Amber 500ml NaSulfite/NaHSO4 preserved	Α	7	7	5.6	N	Absent		A2-14DIOXANE-522(28)
L1731241-03A	Plastic 120ml HNO3 preserved	Α	<2	<2	5.6	Υ	Absent		FE-UI(180),MN-UI(180)
L1731241-03B	Plastic 120ml Other preserved (sub-lab)	Α	7	7	5.6	Υ	Absent		SUB-BROMATE(0)
L1731241-03D	Plastic 250ml Trizma preserved	Α	NA		5.6	Υ	Absent		A2-537-PFOA/PFOS(14)
L1731241-03E	Plastic 250ml Trizma preserved	Α	NA		5.6	Υ	Absent		A2-537-PFOA/PFOS(14)
L1731241-03F	Plastic 250ml Trizma preserved	Α	NA		5.6	Υ	Absent		A2-537-PFOA/PFOS(14)
L1731241-04A	Plastic 120ml HNO3 preserved	Α	<2	<2	5.6	Υ	Absent		FE-UI(180),MN-UI(180)
L1731241-04B	Plastic 120ml Other preserved (sub-lab)	Α	7	7	5.6	Υ	Absent		SUB-BROMATE(0)
L1731241-04D	Plastic 250ml Trizma preserved	Α	NA		5.6	Υ	Absent		A2-537-PFOA/PFOS(14)
L1731241-04E	Plastic 250ml Trizma preserved	Α	NA		5.6	Υ	Absent		A2-537-PFOA/PFOS(14)
L1731241-04F	Plastic 250ml Trizma preserved	Α	NA		5.6	Υ	Absent		A2-537-PFOA/PFOS(14)



Serial\_No:09211720:29

**Lab Number:** L1731241

Report Date: 09/21/17

Project Name: MAHER WALL PILOT

Project Number: 20107

Container Info	ormation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	рН	рН	deg C	Pres	Seal	Date/Time	Analysis(*)
I 1731241-05A	Plastic 250ml Trizma preserved	B	NA		5.0	Υ	Absent		A2-537-PFOA/PFOS(14)



Project Name: MAHER WALL PILOT Lab Number: L1731241
Project Number: 20107 Report Date: 09/21/17

# **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

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**

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

## Terms

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.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

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.

# 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

Report Format: Data Usability Report



Project Name:MAHER WALL PILOTLab Number:L1731241Project Number:20107Report Date:09/21/17

#### Data Qualifiers

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

- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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: MAHER WALL PILOT Lab Number: L1731241

Project Number: 20107 Report Date: 09/21/17

# **REFERENCES**

- 19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.
- Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.
- Determination of 1,4-Dioxane in Drinking Water by Solid Phase Extraction (SPE) and Gas Chromatography/Mass Spectrometry (GC/MS) with Selected Ion Monitoring (SIM). EPA Method 522, EPA/600/R-08/101. Version 1.0, September 2008.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.
- Determination of Selected Perfluorintated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537, EPA/600/R-08/092. Version 1.1, September 2009.

# 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.



Serial\_No:09211720:29

Alpha Analytical, Inc.
Facility: Company-wide

Department: Quality Assurance

Title: Certificate/Approval Program Summary

ID No.:**17873** Revision 10

Published Date: 1/16/2017 11:00:05 AM

Page 1 of 1

# **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:** <u>NPW</u>: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; <u>SCM</u>: 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-Colilert-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 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-Colilert-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.

Document Type: Form

-revised 9/21/17 ks					Serial_No:09211720:29
MANSFIELD CHAIN	OF CUSTODY	PAGE	Date Rec'd in Lab: 09 106 1	ALPH	IA Job #: L1731241
WESTBORO, MA MANSFIELD, MA	Project Information		Report Information - Data Deliver	rables Billin	g Information
TEL: 508-898-9220 TEL: 508-822-9300 FAX: 508-898-9193 FAX: 508-822-3288	Project Name: Maker	Well Pilot	□ FAX □ EMAIL	□ Sam	e as Client info PO#:
Client Information	Project Location: 3acus	/   -   4 4	□ ADEx □ Add'l Deliverables		
Client: Bluelegt, Inc.	Project #: ZOLO	10010, WIT	Regulatory Requirements/Report I	Limits	
Address: 5-7 Dresser Hill Rd	Project Manager: En L	<del></del>	State /Fed Program Criter	ria	
Ola It was ALEST	ALPHA Quote #:	ov=710m			
Cherlton, MA 01507 Phone: 774 ZOO 8029	Turn-Around Time				
Fax:	Turr-Around Time				
Empile	☐ Standard ☐ RUSH (o	nly confirmed if pre-approved!)		<del>, , , , , , , , , , , , , , , , , , , </del>	
Email:  Carotton & bluelectivetee  These samples have been previously analyzed by Alpha	Date Due:	Time:	2/ / / / /	/ / / /	
			ANALYSIS C + ML Lange C + C + C + C + C + C + C + C + C + C +		SAMPLE HANDLING Filtration
Other Project Specific Requirements/Com	iments/Detection Limits:		AMAL TECT DIETE		/ Filtration
PLEASE NOTE			The AMA	/ / / /	/ Not needed
MS/MSD (at unit cost) will be omitted unles	ss you check here:   □		1 2 2 3 7 7 /		Preservation
ALPHA Lab ID	Collection	Sample Sampler's	1 五元为五十		Lab to do Preservation Lab to do Chelase specify below) Sample Specific Comments
(Lab Use Only) Sample ID	Date Time		114446		Sample Specific Comments
31241-01 Raw - 10	9/6/17 9:35	DW ARD	XXXXX		8
02 Troign - 10			X X X		U
02 Trojan-10 03 Filter E-10			X X X		
04 Filter F- 10					5
0 F. 1 Ter 1-10			X X X		5
05 Field Blank	V	4 0	X		1
		-			
		Container Type			Please print clearly, legibly and com-
		Preservative			pletely. Samples can not be logged in and turnaround time clock will not
1+	Relinquished By:	Date/Time	Received By:	Date/Time	start until any ambiguities are resolved. All samples submitted are subject to
	1/4/17	13.27	gane Am	9/6/17 1327	Alpha's Terms and Conditions.
ORM NO: 101-09 (rev. 27-SEP-10)  Page 39 of 49		1			See reverse side.
age 55 or 45					

ALPHA MA	ANSFIELD CHAIN	OF CI	JSTOD	Υ	PAGE	_ OF	Date	Rec'd	in Lab:	ogla	56/	17		ALPI	HA Job#: 617312	+1
WESTBORO, MA TEL: 508-898-9220	MANSFIELD, MA TEL: 508-822-9300	Projec	t Informat	tion		0	Re	ort Inf	ormatio	n - Data	Deliv	erable	es	Billir	g Information	
FAX: 508-898-9193	FAX: 508-822-3288	Project I	Name: Me	her 1	1=11	Pilot		AX		EMAIL				☐ Sam	e as Client info PO#:	
Client Information	on	Project I	Location: 3	COLCE	11.1	1-14	U /	DEx		Add'l De	-11 - 12 - 12 - 12				- sales and	
Client: Bluele	egt, Inc.	Project #	#: 7	010	1	No. 1 21				ements/l	Report	Limi	its			
	Dresser Hill Rd	Project N	Manager: E			41	State	/Fed P	rogram		Crit	eria				÷
Cherit	in, MA 01507	ALPHA	Quote #:	7115	A 211 0 -	1										
Phone: 774	200 8029	Turn-	Around Tir	ne												
Fax:							ı,									
Email:	@ bluelectivater	☐ Standa		RUSH (only	confirmed if pre-a	pproved!)		7	/ /	/ /		7	7	/ /	7 / /	T
☐ These samples have	ve been previously analyzed by Alpha	Date Du	ie:		Time:		ANALYSIC	W. S.				/ /	/ /		SAMPLE HANDLING	O T A L
	pecific Requirements/Comm	- 300000	etection Li	mits:			4	12		64.0	/ /			//	/ Filtration	L
PLEASE NOTE							A	that I	4 4	70			/ ,	/ /	/ Done   Not needed	#
	: t cost) will be omitted unless	vou ch	eck here:	П				7 7	7 3/	TO		/ /	/ /	/ /	Lab to do Preservation	B O T
ALPHA Lab ID		, , , , , , , , , , , , , , , , , , , ,	,		-		13	4	3	7,7	//			//	☐ Lab to do	T
(Lab Use Only)	Sample ID		Colle Date	ection Time	Sample Matrix	Sampler's	1/3	17	立か	6	/ /		/ /	/ /	(Please specify below)  Sample Specific Comments	E S
31241-01	Rahe = 10		9/6/17	9:30	DW	AZD	X	XX	XX						- Campio Openio Commente	8
02	Tool 600 = 10		101				Y		X							U
03	Trojan-10 Filter E-10															
27	FILTER E-10				1		X	X	X		-					5
07	Filter F-10						X	X	X	4	-	-		_ _		5
05	Field Blank		$\lor$	V	~	•	X									1
				-									$\top$			
								+			_			-		+-
						iner Type									Please print clearly, legibly and c	
		-				servative									pletely. Samples can not be logg in and turnaround time clock will	not
	1+	Relinquis	shed By:	1117		Time	0	Re	eceived B	y: AA	1		Date/T		start until any ambiguities are res All samples submitted are subject	
ODM NO. 404 CC 2			- 11	4/14	1 / 3	3.27	1			AM	_	9/6/	17	1327	Alpha's Terms and Conditions. See reverse side.	
ORM NO: 101-09 (rev. 27-SI Page 40 of 49	EP-10)					0									ous reverse side.	



	CHAIN OF CUSTODY			STODY PAGE 1 OF 1					Date Rec'd in Lab:						ALPHA Job #:L1731241				
<b>ALPHA</b>	TICAL	Project Inform	nation					nform	ation	Data		veral	oles	T		- 10	ation	PO#:	
	Mansfield, MA TEL: 508-822-9300	Project Name:					ADEx				:MAIL idd'l De	eliverat	bles		Same a	is Cliei	nt into	FO#.	
	FAX: 508-822-3288					Red	ulato	ry Re	quire	ement	s/Rej	port l	Limits	S					
Client Informati	on	Project Location	n: MA			State	e/Fed P	rogram						Crite	ria				
Client: Alpha Analy	rtical Lab	Project #:				We	D DD	-CLIN	IDEIV	E OF	TAU	UTV (	CT D	-ASC	MAD	EC	ONEI	DENCE PROTOC	OL S
Address: 8 Walkup	Drive	Project Manage	er: Ethan Leig	ghton		MC			IPIIV ⊠ No	ECE	_							DENGE PROTOC	OLS
Westborough, Ma	01581	ALPHA Quote #	<b>#</b> :						⊠ No		_		15573	ical Methods Required? easonable Confidence Protoc				ols) Required?	
Phone: 508-898-92	220	Turn-Around	Time			AN	ALYS	IS					1924						T
Fax:		Standard	□R	ush (ONLY IF	PRE-APPROVED)													SAMPLE HANDLING Filtration	O T A L
Email: subreports@	Dalphalab.com																	☐ Done	#
☐ These samples have	been Previously analyzed by Alpha	Due Date:	Time:															☐ Not Needed☐ Lab to do	В
Other Project Sp	ecific Requirements/Commer	nts/Detection Limit	ts:														3	Preservation  ☐ Lab to do	B O T
Please reference A	Alpha Job # <b>L1731241</b> on this re	eport.																(Please specify	T L E S
																		below)	S
						ш													
ALPHA Lab ID	Sample ID	Coll	ection	Sample	Sampler's	BROMATE													
(Lab Use Only)		Date	Time	Matrix	Initials	RO N												Sample Specific	
				· 			-						_	-	-	_	-	Comments	
	RAW-10	9/6/17	09:30	DW		X								-		-	-		1
	TROJAN-10	9/6/17	09:30	DW		X										-	_		1
	FILTER E-10	9/6/17	09:30	DW		X										_	-		1
	FILTER F-10	9/6/17	09:30	DW		X							-				_		1
																1			
																_			
				-												_			
																_			
PLEASE ANSWER	QUESTIONS ABOVE!				Container Type	Р		-	-	-	-	-	-	-	-	-	-		
					Preservative	EDA		-	-	-	-	-	-	-	-	-	-	Please print clearly, leg and completely. Sampl not be logged in and	
IS VOLLE	PROJECT		Relin	nquished By:		Di	ate/Tim	e			Receiv	ed By	:	-		Date/Ti	ime	turnaround fime clock w start until any ambiguitie	
E 1920 10 1824 1927 1937 19	or CT RCP?		300															resolved. All samples submitted are subject to	0
FORM NO: 01-01(I)	UI CI KCF!																	Alpha's Payment Terms	
Page 41 of 4	.9																		

SUB UPS:	Eurofins,	IN	
----------	-----------	----	--

CHAIN OF		CUSTODY PAGE 1 OF 1					Date Rec'd în Lab:						ALPHA Job #:L1731241				
ALPH	YTICAL	Project Info	rmation			Rep	ort Infor	mation	Data D	elivera	bles	Bi	lling l	nform	ation		
Westborough, MA	Mansfield, MA						FAX		☐ EMA	IL			Same	as Clie	nt info	PO #:	
TEL: 508-898-9220 FAX: 508-898-9193	TEL: 508-822-9300 FAX: 508-822-3288	Project Name	:				ADEx		☐ Add'l	Deliver	ables						
Client Informat		Project Location	on: MA				ulatory l		ments/R	Report	Limit						
Client: Alpha Ana	lytical Lab	Project #:				State	e/Fed Progra	im				Crit	teria				
Address: 8 Walku		Project Manag	ıer: Ethan Le	eighton		МС	P PRESU	MPTIV	E CERTA	YTNIA	-CT R	EAS	ONAE	BLE C	ONFI	DENCE PROTOC	OLS
Westborough, Ma	01581	ALPHA Quote		<u> </u>				⊠ No		e MCP							2-24(4)
Phone: 508-898-9	220	Turn-Aroun				ANI	es ALYSIS	⊠ No	Ar	e CT R	CP (Rea	asonab	ole Cont	idence	Protoco	ls) Required?	T
Fax:				Rush (ONLY IF F	DE ARRONED		AL 1313			1	T	1			1	SAMPLE HANDLING	0
Email: subreports	@alphalab.com		ш.	TOOT (ONE) II T	NE-AFFROVED											Filtration  ☐ Done	L
N-10	e been Previously analyzed by Alpha	- Due Date:	Time	e:												☐ Not Needed	#
	pecific Requirements/Comments	/Detection Lim				-										☐ Lab to do  Preservation	B 0
	Alpha Job # <b>L1731241</b> on this repo															☐ Lab to do	BOTTLES
				19												(Please specify below)	E
ALPHA Lab ID	Sample ID	Со	llection	Sample	Sampler's	ATE											
(Lab Use Only)		Date	Time	Matrix	Initials	BROMATE										Sample Specific	
	1		·	1	1	B										Comments	
	RAW-10	9/6/17	09:30	DW		X											1
	TROJAN-10	9/6/17	09:30	DW		X											1
	FILTER E-10	9/6/17	09:30	DW		X											1
	FILTER F-10	9/6/17	09:30	DW		X											1
LEASE ANSWER	QUESTIONS ABOVE!			Co	ntainer Type	P	-	-		-	-	-	-		-		
					Preservative	EDA	-	-		-	2	-	-	-	-	Please print clearly, legi and completely. Sample not be logged in and	bly es can
S YOUR	PROJECT		Relin	quished By:		Dat	e/Time		Rece	ived By:	:		1	Date/Tir	ne	turnaround time clock w start until any ambiguitie	ill not
MA MCP	or CT RCP?	02	in	e,	AAL	9/7/1	)									resolved. All samples submitted are subject to	
ORM NO: 01-01(I) ev. 30-JUL-07)																Alpha's Payment Terms	
Page 42 of 4	19																

# Shipment Receipt

Tracking Number:

1ZE306540198685876

1) ADDRESS INFORMATION

Fransaction Date: 07 Sep 2017

Ship From: Eurofins Eaton Analytical 110 South Hill Street SOUTH BEND IN 466.172702 Telephone:574-233-4777

Ship To:

Walkup Login Dept Westboro Swalkup Dra Westborough MA 01581 Telephone:508-898-9220 emailtogin@alphalab.com

Walkup Login Dept Westboro 8 Walkup Dr Westborough MA 01581 Telephone:508-898-9220 email·login@alphalab.com Return Address:

PACKAGE INFORMATION

7

REFERENCE NUMBERS	
DECLARED VALUE	100.00 USD
DIMENSIONS / PACKAGING	18×16×13in. Other Packaging
WEIGHT	31.0 lbs (31.0 lbs billable)
	-i ]

3 UPS SHIPPING SERVICE AND SHIPPING OPTIONS

10:30 AM Friday, Sep 8, 2017 **Guaranteed By:** Service:

224.84 USD Shipping Fees Subtotal:

213.62 USD 11.22 USD **Transportation Fuel Surcharge**  0.00 USD Package 1

**Declared Value** 

4 PAYMENT INFORMATION

Bill Shipping Charges to:

Shipper's Account E30654

Shipping Charges:

224.84 USD

83.19 USD

83.19 USD 83.19 USD

A discount has been applied to the Daily rates for this shipment Negotiated Charges:

Subtotal Shipping Charges:

Total Charges:

Note: This document is not an invoice. Your final invoice may vary from the displayed reference rates.

\* For delivery and guarantee information, see the UPS Service Guide ({0}). To speak to a customer service representative, call 1-800-PICK-UPS for domestic services and 1-800-782-7892 for international services.



# LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

This report may not be reproduced, except in full, without written approval from EEA.

Page 44 of 49 Page 1 of 6



# **STATE CERTIFICATION LIST**

State	Certification	State	Certification
Alabama	40700	Missouri	880
Alaska	IN00035	Montana	CERT0026
Arizona	AZ0432	Nebraska	NE-OS-05-04
Arkansas	IN00035	Nevada	IN00035
California	2920	New Hampshire*	2124
Colorado	IN035	New Jersey*	IN598
Colorado Radiochemistry	IN035	New Mexico	IN00035
Connecticut	PH-0132	New York*	11398
Delaware	IN035	North Carolina	18700
Florida*	E87775	North Dakota	R-035
Georgia	929	Ohio	87775
Hawaii	IN035	Oklahoma	D9508
Idaho	IN00035	Oregon (Primary AB)*	4074-001
Illinois*	200001	Pennsylvania*	68-00466
Illinois Microbiology	17767	Puerto Rico	IN00035
Illinois Radiochemistry	IN00035	Rhode Island	LAO00343
Indiana Chemistry	C-71-01	South Carolina	95005
Indiana Microbiology	M-76-07	South Dakota	IN00035
Iowa	098	Tennessee	TN02973
Kansas*	E-10233	Texas*	T104704187-15-8
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA170006	Utah*	IN00035
Maine	IN00035	Vermont	VT-8775
Maryland	209	Virginia*	460275
Massachusetts	M-IN035	Washington	C837
Michigan	9926	West Virginia	9927 C
Minnesota*	018-999-338	Wisconsin	999766900
Mississippi	IN035	Wyoming	IN035
EPA	IN00035		

\*NELAP/TNI Recognized Accreditation Bodies

Revision date: 08/28/2017

Page 45 of 49 Page 2 of 6



110 South Hill Street South Bend, IN 46617 Tel: (574) 233-4777 Fax: (574) 233-8207 1 800 332 4345

# Laboratory Report

Client: Alpha Analytical Report: 397615

Attn: Ethan Leighton Priority: Standard Written

35 Whitney Road Status: Final

Suite 5 PWS ID: Not Supplied

Mahwah, NJ 07430

	Sample Information													
EEA ID#	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time									
3774352	L1731241-1/Raw-10	317.0	09/06/17 09:30	Client	09/11/17 08:45									
3774353	L1731241-2/Trojan-10	317.0	09/06/17 09:30	Client	09/11/17 08:45									
3774354	L1731241-3/Filter E-10	317.0	09/06/17 09:30	Client	09/11/17 08:45									
3774355	L1731241-4/Filter F-10	317.0	09/06/17 09:30	Client	09/11/17 08:45									

# **Report Summary**

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call James Van Fleit at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from EEA.

Jun Van Hit ASM

09/15/2017

Date

Authorized Signature
Client Name: Alp

Alpha Analytical

Report #: 397615

Page 1 of 3

Page 46 of 49 Page 3 of 6

Title

Serial\_No:09211720:29

Client Name: Alpha Analytical Report #: 397615

Sampling Point: L1731241-1/Raw-10 PWS ID: Not Supplied

	General Chemistry														
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID#						
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L		09/13/17 09:34	3774352						

Sampling Point: L1731241-2/Trojan-10 PWS ID: Not Supplied

	General Chemistry														
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID#						
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L		09/13/17 09:59	3774353						

Sampling Point: L1731241-3/Filter E-10 PWS ID: Not Supplied

	General Chemistry														
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID#						
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L		09/13/17 10:24	3774354						

Sampling Point: L1731241-4/Filter F-10 PWS ID: Not Supplied

			Gene	ral Chemi	stry				
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID#
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L		09/13/17 10:49	3774355

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	۸	!

Client Name: Alpha Analytical Report #: 397615

# **Lab Definitions**

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

Internal Standards (IS) - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

**Laboratory Duplicate (LD)** - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

**Laboratory Method Blank (LMB)** / **Laboratory Reagent Blank (LRB)** - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

SUB UPS: F	SUB UPS: Eurofins, IN								397615	SIO		320	326246
je 49	CHAIN OF CUSTODY	CUSTC	)DY	PAGE 1 OF	-	Date Rec'd in Lab:	Lab:			ALPH	ALPHA Job #:L1731241	#:L1731	241
ALPHA 4	ICAL T	Project Information	rmation			Report Information	ormation	Data De	Data Deliverables	Billin	Billing Information	nation	
	Mansfield, MA TEL: 508-822-9300	Project Name:				□ FAX		EMAIL Add'I D	☐ EMAIL ☐ Add'l Deliverables	Sar	Same as Client info	ant info	PO #:
Client Information	PAX: 508-622-3288	Project Location: MA	on: MA			Regulatory	/ Requir	ements/R	Regulatory Requirements/Report Limits				
Slient: Alpha Analytical Lab	tical Lab	Project #:				State/red Program	ram			Criteria			
Address: 8 Walkup Drive	Drive	Project Manager: Ethan Leighton	er: Ethan Lei	ghton		MCP PRES	UMPTIV	E CERTA	INTY-CT R	EASON,	ABLE C	ONFID	MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS
Vestborough, Ma 01581	1581	ALPHA Quote #:	#:			Yes	2 ≥		Are MCP Analytical Methods Required?	al Methods	s Required	21	9
hone: 508-898-9220	20	Turn-Around Time	d Time			ANALYSIS	N M		Are CIRCE (Reasonable Conidence Protocols) Required?	sonable	oniidence	Protocols	
ax:		Standard		Rush (ONLY IF PRE-APPROVED)	RE-APPROVED)								SAMPLE HANDLING T
:mail: subreports@alphalab.com	alphalab.com	ı									•		
These samples have	These samples have been Previously analyzed by Alpha	Due Date:	Time:	(agris)						d	,		Not Needed
Other Project Spe	Other Project Specific Requirements/Comments/Detection Limits	s/Detection Lim	its:						1	O,			
		01.0						3	<u>م</u>				(Please specify E below)
I PHA Lab ID	CledameS		Collection	alumeS	Sampler's	∃TA							
(Lab Use Only)		Date	Time	Matrix	Initials	МОЯ					15		Sample Specific
	RAW-10	6/6/17	09:30	DW		×				+	+		1 CASULES
	TROJAN-10	6/1/17	09:30	DW		×							+
	FILTER E-10	21/9/6	09:30	DW		×					-		354 1
	FILTER F-10	6/6/17	09:30	DW		×			3				1 388 1
										36	Se		
										i iai_i V	rial N		
										10.032	lo:092 <sup>2</sup>		
EASE ANSWER Q	EASE ANSWER QUESTIONS ABOVE!			Con	Container Type	٠.				,,,,,	1,72		
				ш	Preservative	EDA -				,			Please print clearly, legibly and completely. Samples car not be located in and
NOUR S	PROJECT		Reling	Relinquished By:		Date/Time		Receiv	Received By:		Date/Time		turnaround time clock will not
A MCP (	A MCP or CT RCP?	9	3	9	48	4/2/10	4	Con	7	20	C	380	resolved. All samples submitted are subject to Alpha's Payment Terms.
30-JUL-07)		_					+			+		T	



# ANALYTICAL REPORT

Lab Number: L1732361

Client: Blueleaf Incorporated

57 Dresser Hill Road Charlton, MA 01507

ATTN: Erik Grotton
Phone: (508) 248-7094

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 10/03/17

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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



Project Name: MAHER WELL PILOT

Project Number: 20107

**Lab Number:** L1732361 **Report Date:** 10/03/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1732361-01	RAW-11	DW	BARNSTABLE, MA	09/13/17 10:00	09/13/17
L1732361-02	TROJAN-11	DW	BARNSTABLE, MA	09/13/17 10:00	09/13/17
L1732361-03	FILTER E-11	DW	BARNSTABLE, MA	09/13/17 10:00	09/13/17
L1732361-04	FILTER F-11	DW	BARNSTABLE, MA	09/13/17 10:00	09/13/17



L1732361

Lab Number:

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 10/03/17

# **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 cont	act Client Service	ces at 800-624-9	220 with any que	stions.



L1732361

Lab Number:

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 10/03/17

and Normative (nantinued)

# **Case Narrative (continued)**

# Report Submission

The analysis of Bromate was subcontracted. A copy of the laboratory report is included as an addendum.

Please note: This data is only available in PDF format and is not available on Data Merger.

# Sample Receipt

L1732361-01 and -02: One of the sample vials was received above the appropriate pH for the 1,4-Dioxane analysis.

# Perfluorinated Alkyl Acids

The surrogate recovery for the following samples was outside the acceptance criteria for n-deuterioethylperfluoro-1-octanesulfonamidoacetic acid (d5-netfosaa); however, re-analysis achieved similar results. The results of the original analyses are reported:

L1732361-01: 146% L1732361-03: 144% L1732361-04: 147% WG1043307-5:165% WG1043307-4: 178%

WG1043307-1: The surrogate recovery for n-deuterioethylperfluoro-1-octanesulfonamidoacetic acid (d5-netfosaa) (132%) is outside the acceptance criteria; however, since the sample was non-detect for all target analytes associated with this surrogate, re-analysis was not required.

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.

(600, Skulow Kelly Stenstrom

Authorized Signature:

Title: Technical Director/Representative Date: 10/03/17

ANALYTICAL

# **ORGANICS**



# **SEMIVOLATILES**



Project Name: MAHER WELL PILOT Lab Number: L1732361

Project Number: 20107 Report Date: 10/03/17

SAMPLE RESULTS

09/20/17 21:54

Lab ID: Date Collected: 09/13/17 10:00

Client ID: RAW-11 Date Received: 09/13/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Matrix: Dw Extraction Method:EPA 522

Extraction Date: 09/20/17 11:00

Matrix: Dw Extraction Date: 09/20/17 11:00
Analytical Method: 120,522

Analyst: TJ

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.152		ug/l	0.147		1
Surrogate			% Recovery	Qualifier		eptance riteria
1,4-Dioxane-d8			91			70-130



Project Name: MAHER WELL PILOT Lab Number: L1732361

Project Number: 20107 Report Date: 10/03/17

**SAMPLE RESULTS** 

Lab ID: L1732361-01 Date Collected: 09/13/17 10:00

Client ID: RAW-11 Date Received: 09/13/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method:EPA 537

Matrix: Dw Extraction Date: 09/19/17 15:30 Analytical Method: 122,537

Analyst: AJ

09/26/17 23:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537	- Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	20.2		ng/l	1.78		1	
Perfluorooctanesulfonic Acid (PFOS)	72.8		ng/l	1.78		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	92		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	108		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	146	Q	70-130	



Project Name: MAHER WELL PILOT Lab Number: L1732361

Project Number: 20107 Report Date: 10/03/17

SAMPLE RESULTS

Lab ID: Date Collected: 09/13/17 10:00

Client ID: TROJAN-11 Date Received: 09/13/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Matrix: Dw Extraction Method:EPA 522
Extraction Date: 09/20/17 11:00

Analytical Method: 120,522
Analytical Date: 09/20/17 22:18

Analyst: TJ

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.147		1
Surrogate			% Recovery	Qualifier		eptance riteria
1,4-Dioxane-d8			83			70-130



Project Name: MAHER WELL PILOT Lab Number: L1732361

Project Number: 20107 Report Date: 10/03/17

SAMPLE RESULTS

09/20/17 22:41

Lab ID: L1732361-03 Date Collected: 09/13/17 10:00

Client ID: FILTER E-11 Date Received: 09/13/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified
Extraction Method: EPA 522

Matrix: Dw Extraction Method: Extraction Date: 09/20/17 11:00
Analytical Method: 120,522

Analyst: TJ

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.147		1
Surrogate			% Recovery	Qualifier		eptance riteria
1,4-Dioxane-d8			96			70-130



Project Name: MAHER WELL PILOT Lab Number: L1732361

Project Number: 20107 Report Date: 10/03/17

SAMPLE RESULTS

09/26/17 23:38

Lab ID: L1732361-03 Date Collected: 09/13/17 10:00

Client ID: FILTER E-11 Date Received: 09/13/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Matrix: Dw Extraction Method:EPA 537
Extraction Date: 09/19/17 15:30

Analytical Method: 122,537

Analyst: AJ

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537 - Man	sfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.72		1	
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.72		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	100		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	121		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	144	Q	70-130



Project Name: MAHER WELL PILOT Lab Number: L1732361

Project Number: 20107 Report Date: 10/03/17

**SAMPLE RESULTS** 

 Lab ID:
 L1732361-04
 Date Collected:
 09/13/17 10:00

 Client ID:
 FILTER F-11
 Date Received:
 09/13/17

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Matrix: Dw Extraction Method:EPA 522

Extraction Date: 09/20/17 11:00

Analytical Method: 120,522

Analyst: TJ

09/20/17 23:28

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.144		1
Surrogate			% Recovery	Qualifier		eptance riteria
1,4-Dioxane-d8			75			70-130



Project Name: MAHER WELL PILOT Lab Number: L1732361

Project Number: 20107 Report Date: 10/03/17

**SAMPLE RESULTS** 

 Lab ID:
 L1732361-04
 Date Collected:
 09/13/17 10:00

 Client ID:
 FILTER F-11
 Date Received:
 09/13/17

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Matrix: Dw Extraction Method:EPA 537
Extraction Date: 09/19/17 15:30

Analytical Method: 122,537
Analytical Date: 09/27/17 00:08

Analyst: AJ

Parameter	Result Qualifier		Units	RL	MDL	Dilution Factor		
Perfluorinated Alkyl Acids by EPA 537 - Mar	nsfield Lab							
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.72		1		
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.72		1		

Surrogate	% Recovery	Qualifier	Acceptance Criteria
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	101		70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	114		70-130
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	147	Q	70-130



L1732361

Lab Number:

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 10/03/17

Method Blank Analysis Batch Quality Control

Analytical Method: 122,537 Extraction Method: EPA 537

Analytical Date: 09/26/17 22:53 Extraction Date: 09/19/17 15:30

Analyst: AJ

Parameter	Result	Qualifier	Units	RL	MDL	
Perfluorinated Alkyl Acids by EPA 53	37 - Mansfi	eld Lab for	sample(s):	01,03-04	Batch:	WG1043307-1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00		
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00		

			Acceptance	
Surrogate	%Recovery	Qualifier	Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	106		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	122		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	132	Q	70-130	



L1732361

Lab Number:

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 10/03/17

Method Blank Analysis Batch Quality Control

Analytical Method: 120,522 Extraction Method: EPA 522

Analytical Date: 09/20/17 12:09 Extraction Date: 09/20/17 11:00

Analyst: TJ

Parameter	Result	Qualifier Units	RL	MDL	
1,4 Dioxane by EPA 522 -	Mansfield Lab for sar	mple(s): 01-04 B	Batch: WG1043	3746-1	
1,4-Dioxane	ND	ug/l	0.150		

	Acceptance
Surrogate	%Recovery Qualifier Criteria
1.4-Dioxane-d8	81 70-130



# Lab Control Sample Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

**Project Number:** 20107

Lab Number: L1732361

**Report Date:** 10/03/17

		LCS		LCSD		%Recove	ry		RPD	
Pa	ameter	%Recovery	Qual	%Recovery	Qual	Limits	RPD	Qual	Limits	
Pe	fluorinated Alkyl Acids by EPA 537 - N	Mansfield Lab Asso	ciated sample(s	6): 01,03-04	Batch: V	VG1043307-2	WG1043307-3			
	Perfluorooctanoic Acid (PFOA)	113		119		70-130	5		30	
	Perfluorooctanesulfonic Acid (PFOS)	104		111		70-130	7		30	

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	102		98		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	114		109		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	126		128		70-130	



# Lab Control Sample Analysis Batch Quality Control

**Project Name:** MAHER WELL PILOT

Lab Number:

L1732361

**Project Number:** 20107

Report Date:

10/03/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
1,4 Dioxane by EPA 522 - Mansfield Lab	Associated sample(s)	): 01-04	Batch: WG10437	46-2 WG	G1043746-3			
1,4-Dioxane	76		81		70-130	6		30

Surrogate	LCS	LCSD	Acceptance
	%Recovery Qu	ual %Recovery	Qual Criteria
1,4-Dioxane-d8	74	82	70-130

# Matrix Spike Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number:

L1732361

Report Date:

10/03/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		SD und	MSD %Recovery	Qual	Recovery Limits	, RPD	Qual	RPD Limits	
Perfluorinated Alkyl Acids by E E-11					-,		WG1043307-5		Sample: L1			ent ID: FILTER	R
Perfluorooctanoic Acid (PFOA)	ND	34.5	40.4	117		-	-		70-130	-		30	
Perfluorooctanesulfonic Acid (PFOS)	ND	31.9	33.8	106		-	-		70-130	-		30	

	MS		MSD	Acceptance	
Surrogate	% Recovery	Qualifier	% Recovery Qualifier	Criteria	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	165	Q		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	123			70-130	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	100			70-130	

# Lab Duplicate Analysis Batch Quality Control

MAHER WELL PILOT

**Project Number:** 20107

**Project Name:** 

Lab Number:

L1732361

Report Date:

10/03/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Qual Limits
Perfluorinated Alkyl Acids by EPA 537 - Mansfie RAW-11	eld Lab Associated sample(s):	: 01,03-04 QC Batch II	D: WG1043307-4	4 QC San	nple: L1732361-01 Client ID
Perfluorooctanoic Acid (PFOA)	20.2	19.9	ng/l	1	30
Perfluorooctanesulfonic Acid (PFOS)	72.8	84.2	ng/l	15	30

	Acceptance					
Surrogate	%Recovery	Qualifier	%Recovery	Qualifier	Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	92		99		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	108		115		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	146	Q	178	Q	70-130	

# **METALS**



Project Name: MAHER WELL PILOT Lab Number: L1732361

Project Number: 20107 Report Date: 10/03/17

**SAMPLE RESULTS** 

 Lab ID:
 L1732361-01
 Date Collected:
 09/13/17 10:00

 Client ID:
 RAW-11
 Date Received:
 09/13/17

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab										
Iron, Total	0.096		mg/l	0.050		1	09/18/17 17:5	5 09/21/17 11:43	EPA 3005A	19,200.7	PS
Manganese, Total	0.048		mg/l	0.010		1	09/18/17 17:5	5 09/21/17 11:43	EPA 3005A	19,200.7	PS



Project Name: MAHER WELL PILOT Lab Number: L1732361

Project Number: 20107 Report Date: 10/03/17

**SAMPLE RESULTS** 

Lab ID: Date Collected: 09/13/17 10:00

Client ID: TROJAN-11 Date Received: 09/13/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	sfield Lab										
Iron, Total	0.120		mg/l	0.050		1	09/18/17 17:5	5 09/21/17 16:35	EPA 3005A	19,200.7	PS
Manganese, Total	0.048		mg/l	0.010		1	09/18/17 17:5	5 09/21/17 16:35	EPA 3005A	19,200.7	PS



Project Name: MAHER WELL PILOT Lab Number: L1732361

Project Number: 20107 Report Date: 10/03/17

**SAMPLE RESULTS** 

 Lab ID:
 L1732361-03
 Date Collected:
 09/13/17 10:00

 Client ID:
 FILTER E-11
 Date Received:
 09/13/17

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab										
Iron, Total	ND		mg/l	0.050		1	09/18/17 17:5	5 09/21/17 16:40	EPA 3005A	19,200.7	PS
Manganese, Total	0.042		mg/l	0.010		1	09/18/17 17:5	5 09/21/17 16:40	EPA 3005A	19,200.7	PS



Project Name: MAHER WELL PILOT Lab Number: L1732361

Project Number: 20107 Report Date: 10/03/17

**SAMPLE RESULTS** 

 Lab ID:
 L1732361-04
 Date Collected:
 09/13/17 10:00

 Client ID:
 FILTER F-11
 Date Received:
 09/13/17

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab										
Iron, Total	ND		mg/l	0.050		1	09/18/17 17:5	5 09/21/17 16:44	EPA 3005A	19,200.7	PS
Manganese, Total	0.041		mg/l	0.010		1	09/18/17 17:5	5 09/21/17 16:44	EPA 3005A	19,200.7	PS



L1732361

Project Name: MAHER WELL PILOT Lab Number:

Project Number: 20107 Report Date: 10/03/17

# Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfi	eld Lab for sample(s):	01-04 B	atch: W	G10428	51-1				
Iron, Total	ND	mg/l	0.050		1	09/18/17 17:55	09/21/17 11:35	19,200.7	PS
Manganese, Total	ND	mg/l	0.010		1	09/18/17 17:55	09/21/17 11:35	19,200.7	PS

**Prep Information** 

Digestion Method: EPA 3005A



## Lab Control Sample Analysis Batch Quality Control

**Project Name:** MAHER WELL PILOT

Lab Number: L1732361

**Project Number:** 20107 Report Date:

10/03/17

Parameter	LCS %Recovery Qua	LCSD al %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sar	mple(s): 01-04 Batch: Wo	G1042851-2					
Iron, Total	106	-		85-115	-		
Manganese, Total	100	-		85-115	-		

### Matrix Spike Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1732361

**Report Date:** 10/03/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery Q	Recovery ual Limits	RPD Qua	RPD <u>I</u> Limits
Total Metals - Mansfield Lab As	sociated sam	nple(s): 01-04	QC Bat	tch ID: WG1042	2851-3	QC Sam	ple: L1732361-01	Client ID: RA	AW-11	
Iron, Total	0.096	2	2.24	107		-	-	75-125	-	20
Manganese, Total	0.048	1	1.04	99		-	-	75-125	-	20
Total Metals - Mansfield Lab As	sociated sam	nple(s): 01-04	QC Bat	tch ID: WG1042	2851-7	QC Sam	ple: L1732582-01	Client ID: M	S Sample	
Iron, Total	1.53	2	3.82	114		-	-	75-125	-	20
Manganese, Total	0.042	1	1.08	104		-	-	75-125	-	20

## Lab Duplicate Analysis Batch Quality Control

Project Name: MAHER WELL PILOT Batch Quality C

Lab Number: L1

L1732361

Report Date:

10/03/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-0	4 QC Batch ID:	WG1042851-4 QC Sample:	L1732361-01	Client ID:	RAW-11	
Iron, Total	0.096	0.091	mg/l	5		20
Manganese, Total	0.048	0.047	mg/l	3		20



**Project Number:** 20107

## INORGANICS & MISCELLANEOUS



L1732361

Project Name: MAHER WELL PILOT Lab Number:

Project Number: 20107 Report Date: 10/03/17

**SAMPLE RESULTS** 

Lab ID: L1732361-01

Client ID: RAW-11

Sample Location: BARNSTABLE, MA

Matrix: Dw

Date Collected: 09/13/17 10:00

Date Received: 09/13/17

Field Prep: Not Specified

Parameter	Result 0	Qualifier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	· Westborough Lab								
Turbidity	0.52	NTU	0.20		1	-	09/14/17 20:35	44,180.1	AS
Alkalinity, Total	13.2	mg CaCO3/L	2.00	NA	1	-	09/13/17 23:11	121,2320B	MR
pH (H)	6.4	SU	-	NA	1	_	09/14/17 12:25	121,4500H+-B	JT



L1732361

Project Name: MAHER WELL PILOT Lab Number:

Project Number: 20107 Report Date: 10/03/17

Method Blank Analysis Batch Quality Control

Parameter	Result Qualifie	er Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry	- Westborough Lab for s	ample(s): 01	Batch:	WG10	)41435-1				
Alkalinity, Total	ND	mg CaCO3/L	2.00	NA	1	-	09/13/17 23:11	121,2320B	MR
General Chemistry	- Westborough Lab for s	ample(s): 01	Batch:	WG10	)41871-1				
Turbidity	ND	NTU	0.20		1	-	09/14/17 20:35	44,180.1	AS



## Lab Control Sample Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

**Project Number:** 20107

Lab Number:

L1732361

Report Date:

10/03/17

Parameter	LCS %Recovery Qua	LCSD al %Recovery <u>Qual</u>	%Recovery Limits	RPD	Qual RPD Limits
General Chemistry - Westborough Lab	Associated sample(s): 01	Batch: WG1041435-2			
Alkalinity, Total	105	-	90-110	-	10
General Chemistry - Westborough Lab	Associated sample(s): 01	Batch: WG1041762-1			
рН	100	-	99-101	-	5
General Chemistry - Westborough Lab	Associated sample(s): 01	Batch: WG1041871-2			
Turbidity	110	-	90-110	-	

### Matrix Spike Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number:

L1732361

Report Date:

10/03/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual Found	MSD %Recovery Qua	Recovery al Limits	RPD Qı	RPD <sub>ual</sub> Limits
General Chemistry - Westborou	igh Lab Asso	ciated samp	ole(s): 01	QC Batch ID: V	VG1041435-4	QC Sample: L17323	33-01 Client	ID: MS Sa	ample
Alkalinity, Total	40.4	100	139	99	-	-	86-116	-	10



## Lab Duplicate Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

**Project Number:** 20107

**Lab Number:** L1732361 **Report Date:** 10/03/17

Parameter	Native S	ample	Duplicate Sam	ple Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab A	Associated sample(s): 01	QC Batch ID:	WG1041435-3	QC Sample: L173	2333-01 C	lient ID: D	UP Sample
Alkalinity, Total	40.	4	39.8	mg CaCO3/L	1		10
General Chemistry - Westborough Lab A	Associated sample(s): 01	QC Batch ID:	WG1041762-2	QC Sample: L173	2444-01 C	lient ID: D	UP Sample
рН	7.4		7.4	SU	0		5
General Chemistry - Westborough Lab A	Associated sample(s): 01	QC Batch ID:	WG1041871-3	QC Sample: L173	2361-01 C	lient ID: R	AW-11
Turbidity	0.5	2	0.48	NTU	8		13



Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1732361
Report Date: 10/03/17

### Sample Receipt and Container Information

Were project specific reporting limits specified?

YES

**Cooler Information** 

Cooler Custody Seal

A Absent

Container Info	ormation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	рН	рН	deg C	Pres	Seal	Date/Time	Analysis(*)
L1732361-01A	Plastic 120ml HNO3 preserved	Α	<2	<2	4.9	Υ	Absent		FE-UI(180),MN-UI(180)
L1732361-01B	Plastic 120ml Other preserved (sub-lab)	Α	7	7	4.9	Υ	Absent		SUB-BROMATE()
L1732361-01C	Plastic 250ml unpreserved/No Headspace	Α	NA		4.9	Υ	Absent		ALK-T-2320(14),TURB-180(2),PH-4500(.01)
L1732361-01D	Plastic 250ml Trizma preserved	Α	NA		4.9	Υ	Absent		A2-537-PFOA/PFOS(14)
L1732361-01E	Plastic 250ml Trizma preserved	Α	NA		4.9	Υ	Absent		A2-537-PFOA/PFOS(14)
L1732361-01F	Plastic 250ml Trizma preserved	Α	NA		4.9	Υ	Absent		A2-537-PFOA/PFOS(14)
L1732361-01G	Amber 500ml NaSulfite/NaHSO4 preserved	Α	6	6	4.9	N	Absent		A2-14DIOXANE-522(28)
L1732361-01H	Amber 500ml NaSulfite/NaHSO4 preserved	Α	3	3	4.9	Υ	Absent		A2-14DIOXANE-522(28)
L1732361-02A	Plastic 120ml HNO3 preserved	Α	<2	<2	4.9	Υ	Absent		FE-UI(180),MN-UI(180)
L1732361-02B	Plastic 120ml Other preserved (sub-lab)	Α	7	7	4.9	Υ	Absent		SUB-BROMATE()
L1732361-02G	Amber 500ml NaSulfite/NaHSO4 preserved	Α	6	6	4.9	N	Absent		A2-14DIOXANE-522(28)
L1732361-02H	Amber 500ml NaSulfite/NaHSO4 preserved	Α	3	3	4.9	Υ	Absent		A2-14DIOXANE-522(28)
L1732361-03A	Plastic 120ml HNO3 preserved	Α	<2	<2	4.9	Υ	Absent		FE-UI(180),MN-UI(180)
L1732361-03B	Plastic 120ml Other preserved (sub-lab)	Α	7	7	4.9	Υ	Absent		SUB-BROMATE()
L1732361-03D	Plastic 250ml Trizma preserved	Α	NA		4.9	Υ	Absent		A2-537-PFOA/PFOS(14)
L1732361-03E	Plastic 250ml Trizma preserved	Α	NA		4.9	Υ	Absent		A2-537-PFOA/PFOS(14)
L1732361-03F	Plastic 250ml Trizma preserved	Α	NA		4.9	Υ	Absent		A2-537-PFOA/PFOS(14)
L1732361-03G	Amber 500ml NaSulfite/NaHSO4 preserved	Α	3	3	4.9	Υ	Absent		A2-14DIOXANE-522(28)
L1732361-03H	Amber 500ml NaSulfite/NaHSO4 preserved	Α	3	3	4.9	Υ	Absent		A2-14DIOXANE-522(28)
L1732361-04A	Plastic 120ml HNO3 preserved	Α	<2	<2	4.9	Υ	Absent		FE-UI(180),MN-UI(180)
L1732361-04B	Plastic 120ml Other preserved (sub-lab)	Α	7	7	4.9	Υ	Absent		SUB-BROMATE()
L1732361-04D	Plastic 250ml Trizma preserved	Α	NA		4.9	Υ	Absent		A2-537-PFOA/PFOS(14)
L1732361-04E	Plastic 250ml Trizma preserved	Α	NA		4.9	Υ	Absent		A2-537-PFOA/PFOS(14)



Lab Number: L1732361

**Report Date:** 10/03/17

Project Name: MAHER WELL PILOT

Project Number: 20107

Container Info	rmation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	pН	pН	deg C	Pres	Seal	Date/Time	Analysis(*)
L1732361-04F	Plastic 250ml Trizma preserved	Α	NA		4.9	Υ	Absent		A2-537-PFOA/PFOS(14)
L1732361-04G	Amber 500ml NaSulfite/NaHSO4 preserved	Α	3	3	4.9	Υ	Absent		A2-14DIOXANE-522(28)
L1732361-04H	Amber 500ml NaSulfite/NaHSO4 preserved	Α	3	3	4.9	Υ	Absent		A2-14DIOXANE-522(28)



Project Name: MAHER WELL PILOT Lab Number: L1732361

Project Number: 20107 Report Date: 10/03/17

#### **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

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**

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

#### Terms

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.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

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.

#### Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

- 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

Report Format: Data Usability Report



В

Project Name:MAHER WELL PILOTLab Number:L1732361Project Number:20107Report Date:10/03/17

#### Data Qualifiers

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

- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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: MAHER WELL PILOT Lab Number: L1732361

Project Number: 20107 Report Date: 10/03/17

#### REFERENCES

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

- Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.
- Determination of 1,4-Dioxane in Drinking Water by Solid Phase Extraction (SPE) and Gas Chromatography/Mass Spectrometry (GC/MS) with Selected Ion Monitoring (SIM). EPA Method 522, EPA/600/R-08/101. Version 1.0, September 2008.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.
- Determination of Selected Perfluorintated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537, EPA/600/R-08/092. Version 1.1, September 2009.

#### 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

ID No.:17873 Revision 10

Page 1 of 1

Published Date: 1/16/2017 11:00:05 AM

#### 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-Colilert-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 II, 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-Colilert-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.

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.

Pre-Qualtrax Document ID: 08-113 Document Type: Form

ALPHA	CHAIN O	F CUSTODY	PAGE/_OF/	Date Rec'd in Lab: 91317 ALPHA Job #: L1732361
World of the Chompton	e 320 Forbes Blvd	Project Information		Report Information - Data Deliverables Billing Information
Westboro, MA Tel: 508-898-	01581 Mansfield, MA 02048	Project Name: Make	Llell Pilot	
Client Informati	on	Project Location:	Tall 1.1	Regulatory Requirements & Project Information Requirements
A 1 1	Dresser Hill Rd.	Project Location: Backs Project #: ZOIO 7 Project Manager: Erika ALPHA Quote #:	>reTTob	☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods ☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics) ☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets) ☐ Yes ☐ No NPDES RGP ☐ Other State /Fed Program Criteria
Phone: 508 7		Turn-Around Time  A Standard □ RUSH  Date Due:	only confirmed if pre-approved!)	AMALYSIS  CLABW CL
ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date Time	Sample Sampler Matrix Initials	Sample Comments
32361 -01 93 04	Raw-11 Trojam-11 Filter F-11 Filter F-11	9/13/17-10:0	O DW ARD	
Container Type P= Plastic A= Amber glass V= Vial G= Glass B= Bacteria cup C= Cube O= Other E= Encore D= BOD Bottle  Page 41 of 48	Preservative  A= None B= HCI C= HNO <sub>3</sub> D= H <sub>2</sub> SO <sub>4</sub> E= NaOH F= MeOH G= NaHSO <sub>4</sub> H = Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> I= Ascorbic Acid J = NH <sub>3</sub> CI K= Zn Acetate O= Other	Relinquished By:	Container Type Preservative  Date/Time	

SUB UPS: Eurofins, IN

	CHAIN OF	CUSTO	DY	PAGE 1 OF	1	Date	e Rec'd	in Lab:			5.00		AL	PHA	Job#	: L173	2361	
<b>ALPH</b>	i A	Project Infor	mation			Re	port Ir	ıform	ation	Data D	elivera	bles	Bil	ling l	nform	ation		
Westborough, MA	Mansfield, MA						FAX			☐ EMA	.IL				as Clie		PO #:	
TEL: 508-898-9220 FAX: 508-898-9193	TEL: 508-822-9300	Project Name:					ADEx			☐ Add	Deliver	ables				•		
Client Informat	FAX: 508-822-3288	Project Locatio	n· MA				0.00			ements/F	Report	Limit						
Client: Alpha Anal	s s s s s s s s s s s s s s s s s s s		II. IVIA			State	e/Fed Pi	rogram					Crite	eria				
Address: 8 Walku		Project #: Project Manage	or: Ethan I oi	ahtan		МС	P PRE	SUM	IPTIV	E CERT	AINTY	-CT R	EASC	DNAE	LE C	ONFID	ENCE PROTOC	OI S
Westborough, Ma		ALPHA Quote		gnton		<u> </u>	Yes		□ No		re MCP							0.50
Phone: 508-898-9		Turn-Around	THE RESERVE			`		- 100	□ No	А	re CT R	CP (Rea	sonab	le Conf	idence	Protocol	s) Required?	
Fax:		Standard		Number of the second		_AN	ALYSI	S		ГТ			T	1	T	_	SAMPLE HANDLING	0 T
Email: subreports	Malnhalah com	🗀 Standard	Цг	KUSN (ONLY IF P	PRE-APPROVED)						1						Filtration	A
_	e been Previously analyzed by Alpha	— Due Date:	Time	·-													☐ Done ☐ Not Needed	#
	pecific Requirements/Commer					-											☐ Lab to do  Preservation	В
	Alpha Job #L1732361 on this repo		15.		TP												Lab to do	BOTTLES
	20 000		94/160														(Please specify below)	L
																		S
ALPHA Lab ID	Sample ID	Coll	ection	Sample	Sampler's	ي ا												
(Lab Use Only)	,	Date	Time	Matrix	Initials	Bromate											0	
	· · · · · · · · · · · · · · · · · · ·	- '	1	1	1	ā											Sample Specific Comments	
	RAW-11	9/13/17	10:00	DW		X												1
	TROJAN-11	9/13/17	10:00	DW		X												1
	FILTER E-11	9/13/17	10:00	DW		X												1
	FILTER F-11	9/13/17	10:00	DW		X												1
															3			
																	5	
PLEASE ANSWER	QUESTIONS ABOVE!			Co	ntainer Type	P			-		-	-	-	-	-	-		
¥	¥				Preservative	0		-	-		-	Н	-		-	-	Please print clearly, legi and completely. Sample	
IS YOUR PROJECT			Relin	quished By:		Da	ate/Time			Red	eived By	<i>'</i> :			Date/Tif	ne	not be logged in and turnaround time clock w start until any ambiguitie	ill not
	or CT RCP?	CA/	May		9	14/1	7										resolved All samples submitted are subject to	
FORM NO: 01-01(I) (rev. 30-JUL-07)	ä.	(6)			./	17	•										Alpha's Payment Terms	
Page 42 of 48					× ************************************													41



### LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at  $(800)\ 332-4345$  or  $(574)\ 233-4777$ .

This report may not be reproduced, except in full, without written approval from EEA.

Page 43 of 48 Page 1 of 6



### **STATE CERTIFICATION LIST**

State	Certification	State	Certification
Alabama	40700	Missouri	880
Alaska	IN00035	Montana	CERT0026
Arizona	AZ0432	Nebraska	NE-OS-05-04
Arkansas	IN00035	Nevada	IN00035
California	2920	New Hampshire*	2124
Colorado	IN035	New Jersey*	IN598
Colorado Radiochemistry	IN035	New Mexico	IN00035
Connecticut	PH-0132	New York*	11398
Delaware	IN035	North Carolina	18700
Florida*	E87775	North Dakota	R-035
Georgia	929	Ohio	87775
Hawaii	IN035	Oklahoma	D9508
Idaho	IN00035	Oregon (Primary AB)*	4074-001
Illinois*	200001	Pennsylvania*	68-00466
Illinois Microbiology	17767	Puerto Rico	IN00035
Illinois Radiochemistry	IN00035	Rhode Island	LAO00343
Indiana Chemistry	C-71-01	South Carolina	95005
Indiana Microbiology	M-76-07	South Dakota	IN00035
Iowa	098	Tennessee	TN02973
Kansas*	E-10233	Texas*	T104704187-15-8
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA170006	Utah*	IN00035
Maine	IN00035	Vermont	VT-8775
Maryland	209	Virginia*	460275
Massachusetts	M-IN035	Washington	C837
Michigan	9926	West Virginia	9927 C
Minnesota*	018-999-338	Wisconsin	999766900
Mississippi	IN035	Wyoming	IN035
EPA	IN00035		

\*NELAP/TNI Recognized Accreditation Bodies

Revision date: 08/28/2017

Page 44 of 48 Page 2 of 6



110 South Hill Street South Bend, IN 46617 Tel: (574) 233-4777 Fax: (574) 233-8207 1 800 332 4345

### Laboratory Report

398081 Client: Alpha Analytical Report:

Priority: Standard Written Ethan Leighton Attn:

Status: Final 35 Whitney Road

PWS ID: Not Supplied Suite 5

Mahwah, NJ 07430

	Sample Information								
EEA ID#	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time				
3778988	L1732361-1/Raw-11	317.0	09/13/17 10:00	Client	09/15/17 09:30				
3778989	L1732361-2/Trojan-11	317.0	09/13/17 10:00	Client	09/15/17 09:30				
3778990	L1732361-3/Filter E-11	317.0	09/13/17 10:00	Client	09/15/17 09:30				
3778991	L1732361-4/Filter F-11	317.0	09/13/17 10:00	Client	09/15/17 09:30				

#### **Report Summary**

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call James Van Fleit at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from EEA.

Van Huit ASM

Date

Authorized Signature Title Client Name: Alpha Analytical

Report #: 398081

Page 1 of 3

Page 3 of 6 Page 45 of 48

Client Name: Alpha Analytical Report #: 398081

Sampling Point: L1732361-1/Raw-11 PWS ID: Not Supplied

	General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID#	
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L		09/21/17 23:40	3778988	

Sampling Point: L1732361-2/Trojan-11 PWS ID: Not Supplied

	General Chemistry								
Analyte ID #									
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L		09/22/17 00:05	3778989

Sampling Point: L1732361-3/Filter E-11 PWS ID: Not Supplied

	General Chemistry									
Analyte ID #										
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L		09/22/17 00:30	3778990	

Sampling Point: L1732361-4/Filter F-11 PWS ID: Not Supplied

	General Chemistry									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID#	
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L		09/22/17 00:55	3778991	

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	٨	

Client Name: Alpha Analytical Report #: 398081

#### **Lab Definitions**

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

**Internal Standards (IS)** - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

**Laboratory Duplicate (LD)** - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

**Laboratory Fortified Blank (LFB)** / **Laboratory Control Sample (LCS)** - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

**Laboratory Method Blank (LMB)** / **Laboratory Reagent Blank (LRB)** - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

**Laboratory Trip Blank (LTB)** / **Field Reagent Blank (FRB)** - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

**Quality Control Standard (QCS)** / **Second Source Calibration Verification (SSCV)** - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

**Surrogate Standard (SS)** / **Surrogate Analyte (SUR)** - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.

51272E 1808b E

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not MCP PRESUMPTIVE CERTAINTY-CT REASONABLE CONFIDENCE PROTOCOLS # BOFFJB0 start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms. SAMPLE HANDLING □ Done □ Not Needed (Please specify below) ☐ Lab to do Sample Specific Comments ☐ Lab to do Preservation Are CT RCP (Reasonable Confidence Protocols) Required? Filtration ALPHA Job #: L1732361 Billing Information □ Same as Client info 860 Date/Time Are MCP Analytical Methods Required? Criteria Serial\_No:10031711:5 Regulatory Requirements/Report Limits Report Information Data Deliverables ☐ Add'l Deliverables Received By: **№** 2 State/Fed Program Date Rec'd in Lab ANALYSIS Date/Time ☐ ADEx ☐ FAX □ Yes □ Yes Bromate × × × × 0 Preservative Container Type Sampler's Rush (ONLY IF PRE-APPROVED) Initials PAGE 1 OF 1 Sample Matrix Relinquished By: DW DW DW DW Project Manager: Ethan Leighton Time: Time 10:00 10:00 10:00 10:00 Project Information **Turn-Around Time** CHAIN OF CUSTODY Project Location: MA Collection Other Project Specific Requirements/Comments/Detection Limits: ALPHA Quote #: Project Name: 9/13/17 9/13/17 9/13/17 ☐ Standard 9/13/17 Date Due Date: Project #: 7 1733361-Please reference Alpha Job #L1732361 on this report. IS YOUR PROJECT These samples have been Previously analyzed by Alpha Sample ID PLEASE ANSWER QUESTIONS ABOVE! FILTER F-11 FILTER E-11 a UPS: Eurofins, IN TROJAN-11 TEL: 508-822-9300 FAX: 508-822-3288 Email: subreports@alphalab.com RAW-11 Mansfield, MA Client: Alpha Analytical Lab Address: 8 Walkup Drive Westborough, Ma 01581 48 of 48 Client Information Phone: 508-898-9220 060 080 886848 (Lab Use Only) ALPHA Lab ID Westborough, MA TEL: 508-898-9220



#### ANALYTICAL REPORT

Lab Number: L1733478

Client: Blueleaf Incorporated

57 Dresser Hill Road Charlton, MA 01507

ATTN: Erik Grotton
Phone: (508) 248-7094

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 10/09/17

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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



Project Name: MAHER WELL PILOT

Project Number: 20107

**Lab Number:** L1733478 **Report Date:** 10/09/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1733478-01	RAW-12	DW	BARNSTABLE, MA	09/20/17 09:00	09/20/17
L1733478-02	TROJAN-12	DW	BARNSTABLE, MA	09/20/17 09:00	09/20/17
L1733478-03	FILTER E-12	DW	BARNSTABLE, MA	09/20/17 09:00	09/20/17
L1733478-04	FILTER F-12	DW	BARNSTABLE, MA	09/20/17 09:00	09/20/17
L1733478-05	FIELD BLANK	DW	BARNSTABLE, MA	09/20/17 09:00	09/20/17



Serial\_No:10091715:37

L1733478

Project Name: MAHER WELL PILOT Lab Number:

Project Number: 20107 Report Date: 10/09/17

#### **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.



Serial\_No:10091715:37

L1733478

Lab Number:

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 10/09/17

#### **Case Narrative (continued)**

#### Report Submission

The analysis of Bromate was subcontracted. A copy of the laboratory report is included as an addendum.

Please note: This data is only available in PDF format and is not available on Data Merger.

#### Sample Receipt

The samples were received via Client in coolers with ice; however, the ice was melted in one cooler and that sample was above the required temperature range. Per client authorization of the exceedance, all requested analyses were performed.

L1733478-01 through -04: The samples were received above the appropriate pH for the 1,4-Dioxane analysis.

#### Perfluorinated Alkyl Acids

L1733478-03 and -05: The surrogate recovery was outside the acceptance criteria for n-deuterioethylperfluoro-1-octanesulfonamidoacetic acid (d5-netfosaa) (138% and 157%, respectively); however, re-analysis achieved similar results. The results of the original analysis are reported. The surrogate recovery for the WG1044670-3 LCSD, associated with L1733478-01, -03, -04, and -05, is below the acceptance criteria for n-deuterioethylperfluoro-1-octanesulfonamidoacetic acid (d5-netfosaa) (63%). The associated LCS spike compounds are within overall acceptance criteria, therefore, no further action was taken.

#### **Turbidity**

The WG1043901-3 Laboratory Duplicate RPD (14%), performed on L1733478-01, is above the acceptance criteria; however, the sample and duplicate results are less than five times the reporting limit. Therefore, the RPD is valid.

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.

Manfilgut Kara Lindquist

Authorized Signature:

Title: Technical Director/Representative

Date: 10/09/17



## **ORGANICS**



### **SEMIVOLATILES**



Serial\_No:10091715:37

Project Name: MAHER WELL PILOT Lab Number: L1733478

Project Number: 20107 Report Date: 10/09/17

SAMPLE RESULTS

09/22/17 18:07

Lab ID: Date Collected: 09/20/17 09:00

Client ID: RAW-12 Date Received: 09/20/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method: EPA 522

Matrix: Dw Extraction Date: 09/22/17 05:00 Analytical Method: 120,522

Analyst: TJ

Analytical Date:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.412		ug/l	0.147		1
Surrogate			% Recovery	Qualifier		eptance riteria
1,4-Dioxane-d8			87			70-130



Serial\_No:10091715:37

Project Name: MAHER WELL PILOT Lab Number: L1733478

Project Number: 20107 Report Date: 10/09/17

SAMPLE RESULTS

Lab ID: L1733478-01 Date Collected: 09/20/17 09:00

Client ID: RAW-12 Date Received: 09/20/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method:EPA 537

Matrix: Dw Extraction Date: 09/22/17 14:00 Analytical Method: 122,537

Analytical Date: 09/26/17 20:53
Analyst: AJ

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537 -	Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	18.3		ng/l	1.67		1	
Perfluorooctanesulfonic Acid (PFOS)	67.6		ng/l	1.67		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	94		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	102		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	79		70-130	



Project Name: MAHER WELL PILOT Lab Number: L1733478

Project Number: 20107 Report Date: 10/09/17

SAMPLE RESULTS

Lab ID: L1733478-02 Date Collected: 09/20/17 09:00

Client ID: TROJAN-12 Date Received: 09/20/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method: EPA 522

Matrix: Dw Extraction Date: 09/22/17 05:00
Analytical Method: 120,522

Analytical Nethod: 120,522

Analytical Date: 09/22/17 18:32

Analyst: TJ

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield	Lab					
1,4-Dioxane	ND		ug/l	0.147		1
Surrogate			% Recovery	Qualifier		eptance riteria
1,4-Dioxane-d8			89			70-130



Project Name: MAHER WELL PILOT Lab Number: L1733478

Project Number: 20107 Report Date: 10/09/17

SAMPLE RESULTS

Lab ID: L1733478-03 Date Collected: 09/20/17 09:00

Client ID: FILTER E-12 Date Received: 09/20/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified
Extraction Method: EPA 522

Matrix: Dw Extraction Method: EPA 522

Analytical Method: 120,522

Analyst: TJ

09/22/17 18:57

Analytical Date:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.144		1
Surrogate			% Recovery	Qualifier		eptance riteria
1,4-Dioxane-d8			86			70-130



Project Name: MAHER WELL PILOT Lab Number: L1733478

Project Number: 20107 Report Date: 10/09/17

SAMPLE RESULTS

Lab ID: L1733478-03 Date Collected: 09/20/17 09:00

Client ID: FILTER E-12 Date Received: 09/20/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Matrix: Dw Extraction Method:EPA 537
Extraction Date: 09/22/17 14:00

Analytical Method: 122,537
Analytical Date: 09/26/17 21:08

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Perfluorinated Alkyl Acids by EPA 537 - Mans	field Lab					
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.72		1
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.72		1

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	99		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	109		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	138	Q	70-130	



Analyst:

ΑJ

Project Name: MAHER WELL PILOT Lab Number: L1733478

Project Number: 20107 Report Date: 10/09/17

SAMPLE RESULTS

TJ

IPLE RESULTS

Lab ID: L1733478-04 Date Collected: 09/20/17 09:00
Client ID: FILTER F-12 Date Received: 09/20/17
Sample Location: BARNSTARI F MA Field Prep: Not Specified

Sample Location: BARNSTABLE, MA Field Prep: Not Specified Extraction Method:EPA 522

Matrix: Dw Extraction Method: EFA 322

Extraction Method: EFA 322

Extraction Date: 09/22/17 05:00

Analytical Method: 120,522
Analytical Date: 09/22/17 19:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.144		1
Surrogate			% Recovery	Qualifier		eptance riteria
1,4-Dioxane-d8			87			70-130



Analyst:

Project Name: MAHER WELL PILOT Lab Number: L1733478

Project Number: 20107 Report Date: 10/09/17

SAMPLE RESULTS

Lab ID: L1733478-04 Date Collected: 09/20/17 09:00

Client ID: FILTER F-12 Date Received: 09/20/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Extraction Method:EPA 537

Matrix: Dw Extraction Date: 09/22/17 14:00

Analytical Method: 122,537

Analyst: AJ

09/26/17 21:23

Analytical Date:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537 -	Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.72		1	
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.72		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	101		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	114		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	125		70-130	



Project Name: MAHER WELL PILOT Lab Number: L1733478

Project Number: 20107 Report Date: 10/09/17

SAMPLE RESULTS

Lab ID: L1733478-05 Date Collected: 09/20/17 09:00

Client ID: FIELD BLANK Date Received: 09/20/17
Sample Location: BARNSTABLE, MA Field Prep: Not Specified
Extraction Method: EPA 537

Matrix: Dw Extraction Date: 09/22/17 14:00

Analytical Method: 122,537
Analytical Date: 09/26/17 21:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537 - Man	sfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.92		1	
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.92		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	105		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	120		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	157	Q	70-130	



Analyst:

ΑJ

L1733478

Lab Number:

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 10/09/17

Method Blank Analysis Batch Quality Control

Analytical Method: 120,522 Extraction Method: EPA 522

Analytical Date: 09/22/17 06:26 Extraction Date: 09/22/17 05:00

Analyst: TJ

Parameter	Result	Qualifier Units	RL	MDL	
1,4 Dioxane by EPA 522 -	Mansfield Lab for sar	mple(s): 01-04	Batch: WG1044	549-1	
1,4-Dioxane	ND	ug/l	0.150		

		Acceptance
Surrogate	%Recovery Qualifi	er Criteria
1.4-Dioxane-d8	87	70-130



L1733478

Lab Number:

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 10/09/17

Method Blank Analysis Batch Quality Control

Analytical Method: 122,537 Extraction Method: EPA 537

Analytical Date: 09/26/17 17:52 Extraction Date: 09/22/17 14:00

Analyst: AJ

Parameter	Result	Qualifier	Units	RL	MDL	
Perfluorinated Alkyl Acids by EPA 5	37 - Mansfi	eld Lab for	sample(s):	01,03-05	Batch:	WG1044670-1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00		
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00		

			Acceptance	
Surrogate	%Recovery	Qualifier	Criteria	
				_
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	102		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	108		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	83		70-130	



# Lab Control Sample Analysis Batch Quality Control

**Project Name:** MAHER WELL PILOT

**Project Number:** 20107 Lab Number:

L1733478

Report Date:

10/09/17

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	
1,4 Dioxane by EPA 522 - Mansfield Lab	Associated sample(s):	01-04	Batch: WG10	44549-2	WG1044549-3				
1,4-Dioxane	88		91		70-130	3		30	

Surrogate	LCS	LCSD	Acceptance
	%Recovery Q	Jual %Recovery	Qual Criteria
1,4-Dioxane-d8	89	86	70-130



# Lab Control Sample Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

**Project Number:** 20107

Lab Number:

L1733478

Report Date:

10/09/17

		LCS		LCSD		%Recovery	/		RPD	
<u>Pa</u>	rameter	%Recovery	Qual	%Recovery	Qual	Limits	RPD	Qual	Limits	
Pe	rfluorinated Alkyl Acids by EPA 537 - Mans	field Lab Asso	ciated sample(s	s): 01,03-05	Batch: WO	G1044670-2 \	NG1044670-3			
	Perfluorooctanoic Acid (PFOA)	110		111		70-130	1		30	
	Perfluorooctanesulfonic Acid (PFOS)	108		112		70-130	4		30	

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	98		95		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	97		106		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	95		63	Q	70-130	



## **METALS**



Project Name:MAHER WELL PILOTLab Number:L1733478

Project Number: 20107 Report Date: 10/09/17

**SAMPLE RESULTS** 

 Lab ID:
 L1733478-01
 Date Collected:
 09/20/17 09:00

 Client ID:
 RAW-12
 Date Received:
 09/20/17

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab										
Iron, Total	0.069		mg/l	0.050		1	09/27/17 10:30	0 09/28/17 12:47	EPA 3005A	19,200.7	PS
Manganese, Total	0.053		mg/l	0.010		1	09/27/17 10:30	0 09/28/17 12:47	' EPA 3005A	19,200.7	PS



Project Name:MAHER WELL PILOTLab Number:L1733478

Project Number: 20107 Report Date: 10/09/17

**SAMPLE RESULTS** 

 Lab ID:
 L1733478-02
 Date Collected:
 09/20/17 09:00

 Client ID:
 TROJAN-12
 Date Received:
 09/20/17

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mar	nsfield Lab										
Iron, Total	0.090		mg/l	0.050		1	09/27/17 10:30	0 09/28/17 18:14	EPA 3005A	19,200.7	AB
Manganese, Total	0.050		mg/l	0.010		1	09/27/17 10:30	0 09/28/17 18:14	EPA 3005A	19,200.7	AB



Project Name:MAHER WELL PILOTLab Number:L1733478

Project Number: 20107 Report Date: 10/09/17

**SAMPLE RESULTS** 

 Lab ID:
 L1733478-03
 Date Collected:
 09/20/17 09:00

 Client ID:
 FILTER E-12
 Date Received:
 09/20/17

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Man	sfield Lab										
Iron, Total	ND		mg/l	0.050		1	09/27/17 10:3	0 09/28/17 18:19	EPA 3005A	19,200.7	AB
Manganese, Total	0.045		mg/l	0.010		1	09/27/17 10:3	0 09/28/17 18:19	EPA 3005A	19,200.7	AB



**Project Name:** MAHER WELL PILOT **Lab Number:** L1733478

Project Number: 20107 Report Date: 10/09/17

**SAMPLE RESULTS** 

 Lab ID:
 L1733478-04
 Date Collected:
 09/20/17 09:00

 Client ID:
 FILTER F-12
 Date Received:
 09/20/17

Sample Location: BARNSTABLE, MA Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	sfield Lab										
Iron, Total	ND		mg/l	0.050		1	09/27/17 10:30	09/28/17 18:24	EPA 3005A	19,200.7	AB
Manganese, Total	0.046		mg/l	0.010		1	09/27/17 10:30	09/28/17 18:24	EPA 3005A	19,200.7	AB



**Project Name:** MAHER WELL PILOT **Lab Number:** L1733478

Project Number: 20107 Report Date: 10/09/17

# Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfie	eld Lab for sample(s):	01-04 B	atch: W	G10458	62-1				
Iron, Total	ND	mg/l	0.050		1	09/27/17 10:30	09/28/17 12:37	19,200.7	PS
Manganese, Total	ND	mg/l	0.010		1	09/27/17 10:30	09/28/17 12:37	19,200.7	PS

**Prep Information** 

Digestion Method: EPA 3005A



# Lab Control Sample Analysis Batch Quality Control

**Project Name:** MAHER WELL PILOT

Lab Number: L1733478

**Project Number:** 20107 Report Date:

10/09/17

Parameter	LCS %Recovery Qua	LCSD %Recovery	%Recovery Qual Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sam	nple(s): 01-04 Batch: WG	1045862-2				
Iron, Total	106	-	85-115	-		
Manganese, Total	101	-	85-115	-		

### Matrix Spike Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number: L1733478

**Report Date:** 10/09/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery Qu	Recovery al Limits	RPD Qual	RPD Limits
Total Metals - Mansfield Lab	Associated sam	ple(s): 01-04	QC Bat	ch ID: WG104	5862-3	QC Sam	ple: L1733478-01	Client ID: RA	W-12	
Iron, Total	0.069	1	1.09	102		-	-	75-125	-	20
Manganese, Total	0.053	0.5	0.540	97		-	-	75-125	-	20
Total Metals - Mansfield Lab	Associated sam	ple(s): 01-04	QC Bat	ch ID: WG104	5862-7	QC Sam	ple: L1733492-01	Client ID: MS	S Sample	
Iron, Total	ND	1	1.09	109		-	-	75-125	-	20
Manganese, Total	ND	0.5	0.505	101		-	-	75-125	-	20

# Lab Duplicate Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

**Project Number:** 20107

Lab Number:

L1733478

Report Date:

10/09/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04	4 QC Batch ID:	WG1045862-4 QC Sample:	L1733478-01	Client ID:	RAW-12	
Iron, Total	0.069	0.066	mg/l	4		20
Manganese, Total	0.053	0.054	mg/l	1		20



# INORGANICS & MISCELLANEOUS



L1733478

Project Name: MAHER WELL PILOT Lab Number:

Project Number: 20107 Report Date: 10/09/17

**SAMPLE RESULTS** 

Lab ID: L1733478-01

Client ID: RAW-12

Sample Location: BARNSTABLE, MA

Matrix: Dw

Date Collected: 09/20/17 09:00

Date Received: 09/20/17

Field Prep: Not Specified

Parameter	Result Qu	ualifier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	Westborough Lab								
Turbidity	0.20	NTU	0.20		1	-	09/20/17 22:30	44,180.1	CW
Alkalinity, Total	13.5	mg CaCO3/L	2.00	NA	1	-	09/21/17 09:12	121,2320B	BR
pH (H)	6.2	SU	-	NA	1	-	09/20/17 21:20	121,4500H+-B	CW



L1733478

Lab Number:

Project Name: MAHER WELL PILOT

Project Number: 20107 Report Date: 10/09/17

Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	Westborough Lab for sar	mple(s): 01	Batch:	WG10	)43901-1				
Turbidity	ND	NTU	0.20		1	-	09/20/17 22:30	44,180.1	CW
General Chemistry -	Westborough Lab for sar	mple(s): 01	Batch:	WG10	)44033-1				
Alkalinity, Total	ND	mg CaCO3/L	2.00	NA	1	-	09/21/17 09:12	121,2320B	BR



# Lab Control Sample Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

**Project Number:** 20107

Lab Number:

L1733478

10/09/17

Report Date:

Parameter	LCS %Recovery Q	LCSD ual %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab	Associated sample(s): 0	1 Batch: WG1043899	-1				
рН	100	-		99-101	-		5
General Chemistry - Westborough Lab	Associated sample(s): 0	1 Batch: WG1043901	-2				
Turbidity	97	-		90-110	-		
General Chemistry - Westborough Lab	Associated sample(s): 0	1 Batch: WG1044033	-2				
Alkalinity, Total	104	-		90-110	-		10

### Matrix Spike Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

Project Number: 20107

Lab Number:

L1733478

Report Date:

10/09/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual Found	MSD %Recovery Qua	Recovery I Limits	RPD Qua	RPD Limits
General Chemistry - Westbord	ough Lab Asso	ciated samp	ole(s): 01	QC Batch ID: V	VG1044033-4	QC Sample: L173347	'8-01 Client	ID: RAW-12	<u>}</u>
Alkalinity, Total	13.5	100	113	100	-	-	86-116	-	10



# Lab Duplicate Analysis Batch Quality Control

Project Name: MAHER WELL PILOT

**Project Number:** 20107

Lab Number:

L1733478

Report Date:

10/09/17

Parameter	Native	Sample	Duplicate Sam	ple Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab A	Associated sample(s): 01	I QC Batch ID:	WG1043899-2	QC Sample: L1	733428-01	Client ID:	DUP Sample
рН	7	7.5	7.5	SU	0		5
General Chemistry - Westborough Lab A	Associated sample(s): 01	I QC Batch ID:	WG1043901-3	QC Sample: L1	733478-01	Client ID:	RAW-12
Turbidity	0	0.20	0.23	NTU	14	Q	13
General Chemistry - Westborough Lab	Associated sample(s): 01	I QC Batch ID:	WG1044033-3	QC Sample: L1	733478-01	Client ID:	RAW-12
Alkalinity, Total	1	3.5	13.3	mg CaCO3/l	L 1		10



Serial\_No:10091715:37 *Lab Number:* L1733478

Project Name: MAHER WELL PILOT

Report Date: 10/09/17

Project Number: 20107

### Sample Receipt and Container Information

Were project specific reporting limits specified?

**Cooler Information** 

Cooler Custody Seal

A Absent
B Absent

Container Info	ormation		Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	рН	рН	deg C	Pres	Seal	Date/Time	Analysis(*)
L1733478-01A	Plastic 250ml HNO3 preserved	В	<2	<2	4.6	Υ	Absent		FE-UI(180),MN-UI(180)
L1733478-01B	Plastic 250ml unpreserved	В	7	7	4.6	Υ	Absent		TURB-180(2),PH-4500(.01)
L1733478-01C	Plastic 250ml unpreserved/No Headspace	В	NA		4.6	Υ	Absent		ALK-T-2320(14)
L1733478-01D	Plastic 250ml Trizma preserved	В	NA		4.6	Υ	Absent		A2-537-PFOA/PFOS(14)
L1733478-01E	Plastic 250ml Trizma preserved	В	NA		4.6	Υ	Absent		A2-537-PFOA/PFOS(14)
L1733478-01F	Plastic 250ml Trizma preserved	В	NA		4.6	Υ	Absent		A2-537-PFOA/PFOS(14)
L1733478-01G	Amber 500ml NaSulfite/NaHSO4 preserved	В	6	6	4.6	N	Absent		A2-14DIOXANE-522(28)
L1733478-01H	Amber 500ml NaSulfite/NaHSO4 preserved	В	6	6	4.6	N	Absent		A2-14DIOXANE-522(28)
L1733478-02A	Plastic 250ml HNO3 preserved	В	<2	<2	4.6	Υ	Absent		FE-UI(180),MN-UI(180)
L1733478-02B	Plastic 120ml Other preserved (sub-lab)	В	7	7	4.6	Υ	Absent		SUB-BROMATE()
L1733478-02G	Amber 500ml NaSulfite/NaHSO4 preserved	В	6	6	4.6	N	Absent		A2-14DIOXANE-522(28)
L1733478-02H	Amber 500ml NaSulfite/NaHSO4 preserved	В	6	6	4.6	N	Absent		A2-14DIOXANE-522(28)
L1733478-03A	Plastic 250ml HNO3 preserved	В	<2	<2	4.6	Υ	Absent		FE-UI(180),MN-UI(180)
L1733478-03D	Plastic 250ml Trizma preserved	В	NA		4.6	Υ	Absent		A2-537-PFOA/PFOS(14)
L1733478-03E	Plastic 250ml Trizma preserved	В	NA		4.6	Υ	Absent		A2-537-PFOA/PFOS(14)
L1733478-03F	Plastic 250ml Trizma preserved	В	NA		4.6	Υ	Absent		A2-537-PFOA/PFOS(14)
L1733478-03G	Amber 500ml NaSulfite/NaHSO4 preserved	В	6	6	4.6	Ν	Absent		A2-14DIOXANE-522(28)
L1733478-03H	Amber 500ml NaSulfite/NaHSO4 preserved	В	6	6	4.6	N	Absent		A2-14DIOXANE-522(28)
L1733478-04A	Plastic 250ml HNO3 preserved	В	<2	<2	4.6	Υ	Absent		FE-UI(180),MN-UI(180)
L1733478-04D	Plastic 250ml Trizma preserved	В	NA		4.6	Υ	Absent		A2-537-PFOA/PFOS(14)
L1733478-04E	Plastic 250ml Trizma preserved	В	NA		4.6	Υ	Absent		A2-537-PFOA/PFOS(14)
L1733478-04F	Plastic 250ml Trizma preserved	В	NA		4.6	Υ	Absent		A2-537-PFOA/PFOS(14)



Lab Number: L1733478

Report Date: 10/09/17

Container Information			Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	рН	pН	deg C	Pres	Seal	Date/Time	Analysis(*)
L1733478-04G	Amber 500ml NaSulfite/NaHSO4 preserved	В	6	6	4.6	N	Absent		A2-14DIOXANE-522(28)
L1733478-04H	Amber 500ml NaSulfite/NaHSO4 preserved	В	6	6	4.6	Ν	Absent		A2-14DIOXANE-522(28)
L1733478-05D	Plastic 250ml Trizma preserved	Α	NA		8.3	Υ	Absent		A2-537-PFOA/PFOS(14)



Project Name:

Project Number: 20107

MAHER WELL PILOT

Project Name: MAHER WELL PILOT Lab Number: L1733478

Project Number: 20107 Report Date: 10/09/17

#### **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**

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

#### Terms

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.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

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.

#### 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

Report Format: Data Usability Report



Project Name:MAHER WELL PILOTLab Number:L1733478Project Number:20107Report Date:10/09/17

#### Data Qualifiers

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

- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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: MAHER WELL PILOT Lab Number: L1733478

Project Number: 20107 Report Date: 10/09/17

#### REFERENCES

19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.

- Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.
- Determination of 1,4-Dioxane in Drinking Water by Solid Phase Extraction (SPE) and Gas Chromatography/Mass Spectrometry (GC/MS) with Selected Ion Monitoring (SIM). EPA Method 522, EPA/600/R-08/101. Version 1.0, September 2008.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.
- Determination of Selected Perfluorintated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537, EPA/600/R-08/092. Version 1.1, September 2009.

#### **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

ID No.:17873 Revision 10

Page 1 of 1

Published Date: 1/16/2017 11:00:05 AM

#### 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-Colilert-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 II, 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-Colilert-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.

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.

Pre-Qualtrax Document ID: 08-113 Document Type: Form

	CHAIN O	F CUSTODY	PAGEOF	_	
WOOLD SE CONTROL			PAGEOF	Date Rec'd in Lab: 9/20/17 ALPHA Job #: L173	3478
8 Walkup Dri Westboro, M	A 01581 Mansfield MA 02048	Project Information		Report Information - Data Deliverables Billing Information	
Client Informat	3-9220 Tel: 508-822-9300	Project Name: Maher	Vell Pilot	□ ADEx □ EMAIL □ Same as Client info PO #:	
		Froject Location: Backs	5061c, MA	Regulatory Requirements & Project Information Requirements	
Address:	lect, Inc.	2010 t		☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analyt ☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)	ical Methods
Address. 57	Diesser Hill Rd	Project Manager: Erile (	protton	☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)	
Cha-Ita	M/+ 01507	ALPHA Quote #:		☐ Yes ☐ No NPDES RGP ☐ Other State /Fed Program Criteria _	
Phone: 774 Z	00 80 79	Turn-Around Time			
Email: egrotter	abluelestwater.	© Standard ☐ RUSH (a	nly confirmed if pre-approved!)	S CIPP13  Ses Omly  'es Omly	
	Project Information:	Date Due:	iny sommed it pre-ap rover ;	ANALYSIS  24 D 524.2  D PAH  D RCRAB  D PAH  C RCRAB  D Fingerprint  T A A A  C A  C A  C A  C A  C A  C A	T
radicionar	roject information.			ANALYSIL ANALYSIL BOOK OF 14 DE 14	PLE INFO
				Filtrat	ion
				Beso Die See Tall	to do
ALBUAL LIB				Description of the second of t	rvation 0 T T L
ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date Time	Sample Sampler Matrix Initials	SVOC: D 8260 SVOC: D 8260 SVOC: D 826 ME7ALS: D MCP 13 ME7ALS: D MCP 14 ME	to do
33478-01	Rew-17	9/20 900	, initiality		omments E
ගු	T. 17	723 7	DW ARD	XXXX	8
03	Trojeh-12 Filter E-12		++++	XXXXX	4
	7.1 Ter E-17			XXX	6
04	Filter F-12	- Y Y	4 4	XXX	1
02	Field Blank	VV	1 1	X	0
Container Type P= Plastic	Preservative		Container Type		
A= Amber glass V= Vial G= Glass	A= None B= HCI C= HNO <sub>3</sub>		Preservative		
B= Bacteria cup C= Cube D= Other	D= H <sub>2</sub> SO <sub>4</sub> E= NaOH F= MeOH	Relinquished By:	Date/Time		
E= Encore D= BOD Bottle	G= NaHSO <sub>4</sub> H = Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> I= Ascorbic Acid	() - 9/20/17	13:27	Received By: Date/Time  An Q/2017 131 Samples submitted are	subject to
D 46 7 7	J = NH <sub>3</sub> Cl K= Zn Acetate O= Other			Apha's Terms and Condition See reverse side.	ions.
Page 40 of 47				FORM NO: 01-01 (ray 13 Mar 201	10)

SUB UPS: Eurofins, IN Wm													•	seria	1_INO:	:10091715:37			
	CHAIN OF	CUSTO	DY	PAGE 1 OF	1	Da	te Rec'o	d in Lat	o:					AL	.PHA	Job	#: L1	733478	
ALPH	YTICAL	Project Info	rmation			Re	eport	Infor	natio	n Dat	a De	livera	bles	Bil	lling l	nfor	matio	n	
Westborough, MA	Mansfield, MA						FAX				EMAIL	-			Same	as Clie	ent info	PO #:	
TEL: 508-898-9220 FAX: 508-898-9193	TEL: 508-822-9300 FAX: 508-822-3288	Project Name:					ADEx				Add'l [	Deliver	ables						
Client Informa		Project Location	n: MA			100	egulat ete/Fed			remen	ts/Re	eport	Limi	$\top$	eria				
Client: Alpha Ana	lytical Lab	Project #:					1077 001	rogran						Cin	ена				
Address: 8 Walku	p Drive	Project Manage	er: Ethan Le	eighton				ESU	MPTI	VE CE	RTA	INTY	-CT R	REAS	ONAE	BLE C	ONF	IDENCE PROTOC	OLS
Westborough, Ma	01581	ALPHA Quote		M. Market			Yes Yes		□ No					cal Met					
Phone: 508-898-9	9220	Turn-Around	l Time				IALYS			)	Are	CIRC	SP (Re	asonab	le Con	idence	Protoc	cols) Required?	T
Fax:				Rush (ONLY IF PI	RE-APPROVED							T	T			T	$\top$	SAMPLE HANDLING	O
Email: subreports	@alphalab.com		_		12 / 11 / 11 (0 / 25)													Filtration  ☐ Done	A L
☐ These samples hav	ve been Previously analyzed by Alpha	Due Date:	Time	e:														☐ Not Needed	#
	pecific Requirements/Commer	nts/Detection Limi	ts:			-												☐ Lab to do  Preservation	B
	Alpha Job #L1733478 on this repo														17			☐ Lab to do	T
																		(Please specify below)	BOTTLES
ALPHA Lab ID (Lab Use Only)	Sample ID	Coll Date	ection Time	Sample Matrix	Sampler's Initials	Bromate												Sample Specific	
	TROJAN-12	9/20/17	09:00	DW		X											+		1
												-		-	-		+		$\vdash$
												_		-		+	+		+
								in in											
-																			
													0.15						
LEASE ANSWER	QUESTIONS ABOVE!			Con	tainer Type	P		-	-	-	S=0	-	-	- 1	-	-	H	Please print clearly, legible	du.
				F	reservative	0		-	-	-	-	•	-	-	-	-	-	and completely. Samples not be logged in and	
	PROJECT		Relin	nquished By:		D	ate/Time	е			Receiv	ved By:			[	Date/Ti	me	turnaround time clock will start until any ambiguities	
ORM NO: 01-01(I)	or CT RCP?																	resolved. All samples submitted are subject to Alpha's Payment Terms.	
ev. 30-JUL-07)								-						-	-				
Page 41 of	4/					-			-								_		



### LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at  $(800)\ 332-4345$  or  $(574)\ 233-4777$ .

This report may not be reproduced, except in full, without written approval from EEA.

Page 42 of 47 Page 1 of 6



### **STATE CERTIFICATION LIST**

State	Certification	State	Certification
Alabama	40700	Missouri	880
Alaska	IN00035	Montana	CERT0026
Arizona	AZ0432	Nebraska	NE-OS-05-04
Arkansas	IN00035	Nevada	IN00035
California	2920	New Hampshire*	2124
Colorado	IN035	New Jersey*	IN598
Colorado Radiochemistry	IN035	New Mexico	IN00035
Connecticut	PH-0132	New York*	11398
Delaware	IN035	North Carolina	18700
Florida*	E87775	North Dakota	R-035
Georgia	929	Ohio	87775
Hawaii	IN035	Oklahoma	D9508
Idaho	IN00035	Oregon (Primary AB)*	4074-001
Illinois*	200001	Pennsylvania*	68-00466
Illinois Microbiology	17767	Puerto Rico	IN00035
Illinois Radiochemistry	IN00035	Rhode Island	LAO00343
Indiana Chemistry	C-71-01	South Carolina	95005
Indiana Microbiology	M-76-07	South Dakota	IN00035
Iowa	098	Tennessee	TN02973
Kansas*	E-10233	Texas*	T104704187-15-8
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA170006	Utah*	IN00035
Maine	IN00035	Vermont	VT-8775
Maryland	209	Virginia*	460275
Massachusetts	M-IN035	Washington	C837
Michigan	9926	West Virginia	9927 C
Minnesota*	018-999-338	Wisconsin	999766900
Mississippi	IN035	Wyoming	IN035
EPA	IN00035		

\*NELAP/TNI Recognized Accreditation Bodies

Revision date: 08/28/2017

Page 43 of 47 Page 2 of 6



110 South Hill Street South Bend, IN 46617 Tel: (574) 233-4777 Fax: (574) 233-8207 1 800 332 4345

### Laboratory Report

Client: Alpha Analytical Report: 398717

Attn: Ethan Leighton Priority: Standard Written

35 Whitney Road Status: Final

Suite 5 PWS ID: Not Supplied

Mahwah, NJ 07430

	Sample Information												
EEA ID#	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time								
3784545	L1733478/Trojan-12	317.0	09/20/17 09:00	Client	09/22/17 10:00								

### **Report Summary**

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call James Van Fleit at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from EEA.

Jun Van Huit ASM

10/06/2017

Date

Authorized Signature
Client Name: Alpha

Alpha Analytical

Report #: 398717

Page 1 of 3

Page 44 of 47 Page 3 of 6

Title

Serial\_No:10091715:37

Client Name: Alpha Analytical Report #: 398717

Sampling Point: L1733478/Trojan-12 PWS ID: Not Supplied

	General Chemistry								
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID#
15541-45-4	Bromate	317.0	10 *	1.0	< 1.0	ug/L		10/03/17 13:38	3784545

<sup>†</sup> EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	٨	!

Serial\_No:10091715:37

Client Name: Alpha Analytical Report #: 398717

#### **Lab Definitions**

Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC) - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

**Internal Standards (IS)** - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

**Laboratory Duplicate (LD)** - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS) - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

**Laboratory Method Blank (LMB)** / **Laboratory Reagent Blank (LRB)** - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB) - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD) - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM) - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV) - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS) - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

Surrogate Standard (SS) / Surrogate Analyte (SUR) - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.



#### ANALYTICAL REPORT

Lab Number: L1734538

Client: Blueleaf Incorporated

57 Dresser Hill Road Charlton, MA 01507

ATTN: Erik Grotton
Phone: (508) 248-7094
Project Name: Not Specified

Project Number: 20107 Report Date: 10/11/17

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), NJ NELAP (MA935), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-14-00197).

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



Project Name: Not Specified

Project Number: 20107

**Lab Number:** L1734538 **Report Date:** 10/11/17

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1734538-01	RAW-13	DW	Not Specified	09/27/17 10:00	09/27/17
L1734538-02	TROJAN-13	DW	Not Specified	09/27/17 10:00	09/27/17
L1734538-03	FILTER E-13	DW	Not Specified	09/27/17 10:00	09/27/17
L1734538-04	FILTER F-13	DW	Not Specified	09/27/17 10:00	09/27/17
L1734538-05	FIELD BLANK	DW	Not Specified	09/27/17 10:00	09/27/17



Project Name: Not Specified Lab Number: L1734538

Project Number: 20107 Report Date: 10/11/17

#### **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	auestions.



Project Name: Not Specified Lab Number: L1734538

Project Number: 20107 Report Date: 10/11/17

#### **Case Narrative (continued)**

Sample Receipt

L1734538-01, -03 and -04: The sample was received above the appropriate pH for 1,4 Dioxane by EPA 522 analysis.

Perfluorinated Alkyl Acids

L1734538-01: The surrogate recovery was below the acceptance criteria for n-deuterioethylperfluoro-1-octanesulfonamidoacetic acid (d5-netfosaa) (69%); however, the sample was extracted as the WG1047952-4 batch duplicate with all criteria met. The results of both analyses are reported.

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.

Michelle M. Morris

Authorized Signature:

Title: Technical Director/Representative

Date: 10/11/17



### **ORGANICS**



### **SEMIVOLATILES**



Project Name: Not Specified Lab Number: L1734538

Project Number: 20107 Report Date: 10/11/17

SAMPLE RESULTS

Lab ID: L1734538-01 Date Collected: 09/27/17 10:00

Client ID: RAW-13 Date Received: 09/27/17
Sample Location: Not Specified Field Prep: Not Specified Extraction Method: EPA 522

Matrix: Dw Extraction Date: 10/02/17 09:00

Analytical Method: 120,522

Analytical Date: 10/02/17 19:31
Analyst: TJ

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	0.403		ug/l	0.147		1
Surrogate			% Recovery	Qualifier		eptance riteria
1,4-Dioxane-d8			84			70-130



Project Name: Not Specified Lab Number: L1734538

Project Number: 20107 Report Date: 10/11/17

SAMPLE RESULTS

ΑJ

Lab ID: L1734538-01 Date Collected: 09/27/17 10:00

Client ID: RAW-13 Date Received: 09/27/17
Sample Location: Not Specified Field Prep: Not Specified Extraction Method: EPA 537

Matrix: Dw Extraction Method: Extraction Date: 10/02/17 15:30
Analytical Method: 122,537

Analytical Date: 10/10/17 18:38

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537	- Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	17.0		ng/l	1.72		1	
Perfluorooctanesulfonic Acid (PFOS)	65.4		na/l	1.72		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	74		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	79		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	69	Q	70-130	



Analyst:

70-130

Project Name: Not Specified Lab Number: L1734538

Project Number: 20107 Report Date: 10/11/17

SAMPLE RESULTS

 Lab ID:
 L1734538-02
 Date Collected:
 09/27/17 10:00

 Client ID:
 TROJAN-13
 Date Received:
 09/27/17

Client ID: TROJAN-13 Date Received: 09/27/17
Sample Location: Not Specified Field Prep: Not Specified Extraction Method: EPA 522

Matrix: Dw Extraction Date: 10/02/17 09:00

Analytical Method: 120,522
Analytical Date: 10/02/17 19:53

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
1,4 Dioxane by EPA 522 - Mansfield Lab							
1,4-Dioxane	ND		ug/l	0.144		1	
Surrogate			% Recovery	Qualifier		eptance riteria	

83



Analyst:

1,4-Dioxane-d8

TJ

Project Name: Not Specified Lab Number: L1734538

Project Number: 20107 Report Date: 10/11/17

SAMPLE RESULTS

 Lab ID:
 L1734538-03
 Date Collected:
 09/27/17 10:00

 Client ID:
 FILTER E-13
 Date Received:
 09/27/17

Sample Location: Not Specified Field Prep: Not Specified Extraction Method: EPA 522

Matrix: Dw Extraction Method: Er A 322

Extraction Date: 10/02/17 09:00

Analytical Method: 120,522
Analytical Date: 10/02/17 20:15

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.147		1
Surrogate			% Recovery	Qualifier		eptance riteria
1,4-Dioxane-d8			83			70-130



Analyst:

TJ

Project Name: Not Specified Lab Number: L1734538

Project Number: 20107 Report Date: 10/11/17

SAMPLE RESULTS

10/10/17 19:08

Lab ID: L1734538-03 Date Collected: 09/27/17 10:00

Client ID: FILTER E-13 Date Received: 09/27/17
Sample Location: Not Specified Field Prep: Not Specified Extraction Method: EPA 537

Matrix: Dw Extraction Date: 10/02/17 15:30
Analytical Method: 122,537

Analyst: AJ

Analytical Date:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537 -	Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.78		1	
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.78		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	81		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	82		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	83		70-130	



Project Name: Not Specified Lab Number: L1734538

Project Number: 20107 Report Date: 10/11/17

SAMPLE RESULTS

 Lab ID:
 L1734538-04
 Date Collected:
 09/27/17 10:00

 Client ID:
 FILTER F-13
 Date Received:
 09/27/17

Sample Location: Not Specified Field Prep: Not Specified Extraction Method: EPA 522

Matrix: Dw Extraction Method.EFA 522

Extraction Date: 10/02/17 09:00

Analytical Method: 120,522

Analyst: TJ

10/02/17 20:38

Analytical Date:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
1,4 Dioxane by EPA 522 - Mansfield Lab						
1,4-Dioxane	ND		ug/l	0.144		1
Surrogate			% Recovery	Qualifier		eptance riteria
1,4-Dioxane-d8			86			70-130



Project Name: Not Specified Lab Number: L1734538

Project Number: 20107 Report Date: 10/11/17

SAMPLE RESULTS

 Lab ID:
 L1734538-04
 Date Collected:
 09/27/17 10:00

 Client ID:
 FILTER F-13
 Date Received:
 09/27/17

Sample Location: Not Specified Field Prep: Not Specified Extraction Method: EPA 537

Matrix: Dw Extraction Date: 10/02/17 15:30

Analytical Method: 122,537
Analytical Date: 10/10/17 19:38

Analyst: AJ

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537	- Mansfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.72		1	
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.72		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	81		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	84		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	86		70-130	



Project Name: Not Specified Lab Number: L1734538

Project Number: 20107 Report Date: 10/11/17

**SAMPLE RESULTS** 

Lab ID: L1734538-05 Date Collected: 09/27/17 10:00

Client ID: FIELD BLANK Date Received: 09/27/17
Sample Location: Not Specified Field Prep: Not Specified Extraction Method: EPA 537

Matrix: Dw Extraction Date: 10/02/17 15:30
Analytical Method: 122,537

Analyst: AJ

10/10/17 19:53

Analytical Date:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	
Perfluorinated Alkyl Acids by EPA 537 - Man	sfield Lab						
Perfluorooctanoic Acid (PFOA)	ND		ng/l	1.85		1	
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	1.85		1	

Surrogate	% Recovery	Qualifier	Acceptance Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	85		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	89		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	99		70-130	



**Project Name:** Not Specified **Lab Number:** L1734538

Project Number: 20107 Report Date: 10/11/17

Method Blank Analysis Batch Quality Control

Analytical Method: 120,522 Extraction Method: EPA 522

Analytical Date: 10/02/17 10:22 Extraction Date: 10/02/17 09:00

Analyst: TJ

Parameter	Result	Qualifier Unit	s RL	MDL	
1,4 Dioxane by EPA 522 - Mai	nsfield Lab for sa	mple(s): 01-04	Batch: WG	1047881-1	
1,4-Dioxane	ND	ug,	I 0.150		

		Acceptance
Surrogate	%Recovery Qualifi	er Criteria
1.4-Dioxane-d8	71	70-130



L1734538

Project Name: Not Specified Lab Number:

Project Number: 20107 Report Date: 10/11/17

Method Blank Analysis
Batch Quality Control

Analytical Method: 122,537 Extraction Method: EPA 537

Analytical Date: 10/10/17 17:23 Extraction Date: 10/02/17 15:30

Analyst: AJ

Parameter	Result	Qualifier	Units	RL	MDL	
Perfluorinated Alkyl Acids by EPA 5	37 - Mansfi	eld Lab for	sample(s):	01,03-05	Batch:	WG1047952-1
Perfluorooctanoic Acid (PFOA)	ND		ng/l	2.00		
Perfluorooctanesulfonic Acid (PFOS)	ND		ng/l	2.00		

			Acceptance	
Surrogate	%Recovery	Qualifier	Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	84		70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	91		70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	96		70-130	



### Lab Control Sample Analysis Batch Quality Control

**Project Name:** Not Specified

Lab Number:

L1734538

**Project Number:** 20107 Report Date:

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	RPD Qual Limit	
1,4 Dioxane by EPA 522 - Mansfield Lab	Associated sample(s)	: 01-04	Batch: WG104788	1-2 WG	1047881-3			
1,4-Dioxane	85		87		70-130	2	30	

Surrogate	LCS	LCSD	Acceptance
	%Recovery Q	ual %Recovery	Qual Criteria
1,4-Dioxane-d8	72	76	70-130

## Lab Control Sample Analysis Batch Quality Control

**Project Name:** Not Specified

**Project Number:** 

20107

Lab Number: L1734538

Report Date:

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recove Limits	•	Qual	RPD Limits	
Perfluorinated Alkyl Acids by EPA 537 -	Mansfield Lab Assoc	iated sample(s	): 01,03-05	Batch:	WG1047952-2	WG1047952-3			
Perfluorooctanoic Acid (PFOA)	91		98		70-130	7		30	
Perfluorooctanesulfonic Acid (PFOS)	96		112		70-130	15		30	

Surrogate	LCS %Recovery	LCSD Qual %Recovery	Acceptance Qual Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	78	80	70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	88	87	70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	90	88	70-130	



## Matrix Spike Analysis Batch Quality Control

Project Name: Not Specified

Project Number: 20107

Lab Number:

L1734538

Report Date:

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits	
Perfluorinated Alkyl Acids by E E-13	EPA 537 - Ma	ansfield Lab	Associated sa	ample(s): 01,03-0	05 QC	Batch ID:	WG1047952-5	QC S	Sample: L17	734538-0	)3 Clie	ent ID: FI	LTER
Perfluorooctanoic Acid (PFOA)	ND	1.72	1.59J	92		-	-		70-130	-		30	
Perfluorooctanesulfonic Acid (PFOS)	ND	1.6	1.15J	72		-	-		70-130	-		30	

	MS		MSD	Acceptance
Surrogate	% Recovery Qu	ualifier % Recove	ery Qualifier	Criteria
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	91			70-130
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	83			70-130
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	83			70-130

## Lab Duplicate Analysis Batch Quality Control

Not Specified Batch Quality Conf

Lab Number:

L1734538

Report Date:

10/11/17

Parameter	Native Sample	Duplicate Sample	Units I	RPD	RPD Qual Limits
Perfluorinated Alkyl Acids by EPA 537 - Mansfield RAW-13	Lab Associated sample(s):	01,03-05 QC Batch ID	: WG1047952-4	QC Sa	mple: L1734538-01 Client ID:
Perfluorooctanoic Acid (PFOA)	17.0	17.4	ng/l	2	30
Perfluorooctanesulfonic Acid (PFOS)	65.4	68.1	ng/l	4	30

				Acceptance	
Surrogate	%Recovery	Qualifier	%Recovery	Qualifier Criteria	
Perfluoro-n-[1,2-13C2]hexanoic Acid (13C-PFHxA)	74		82	70-130	
Perfluoro-n-[1,2-13C2]decanoic Acid (13C-PFDA)	79		84	70-130	
N-Deuterioethylperfluoro-1-octanesulfonamidoacetic Acid (d5-NEtFOSAA)	69	Q	83	70-130	

**Project Name:** 

Project Number:

20107

### **METALS**



09/27/17 10:00

09/27/17

Project Name:Not SpecifiedLab Number:L1734538Project Number:20107Report Date:10/11/17

**SAMPLE RESULTS** 

Lab ID:L1734538-01Date Collected:Client ID:RAW-13Date Received:Sample Location:Not SpecifiedField Prep:

ield Prep: Not Specified

Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	field Lab										
Iron, Total	0.065		mg/l	0.050		1	10/11/17 10:30	10/11/17 14:21	EPA 3005A	19,200.7	AB
Manganese, Total	0.051		mg/l	0.010		1	10/11/17 10:30	10/11/17 14:21	EPA 3005A	19,200.7	AB



Project Name:Not SpecifiedLab Number:L1734538Project Number:20107Report Date:10/11/17

**SAMPLE RESULTS** 

Lab ID: L1734538-02
Client ID: TROJAN-13
Sample Location: Not Specified

Matrix: Dw

Date Collected: 09/27/17 10:00
Date Received: 09/27/17

Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mans	sfield Lab										
Iron, Total	0.092		mg/l	0.050		1	10/11/17 10:30	) 10/11/17 14:45	EPA 3005A	19,200.7	AB
Manganese, Total	0.049		mg/l	0.010		1	10/11/17 10:30	) 10/11/17 14:45	EPA 3005A	19,200.7	AB



Project Name:Not SpecifiedLab Number:L1734538Project Number:20107Report Date:10/11/17

**SAMPLE RESULTS** 

Lab ID:L1734538-03Date Collected:09/27/17 10:00Client ID:FILTER E-13Date Received:09/27/17Sample Location:Not SpecifiedField Prep:Not Specified

Matrix: Dw

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Man	sfield Lab										
Iron, Total	ND		mg/l	0.050		1	10/11/17 10:3	0 10/11/17 14:50	EPA 3005A	19,200.7	AB
Manganese, Total	0.044		mg/l	0.010		1	10/11/17 10:3	0 10/11/17 14:50	EPA 3005A	19,200.7	AB



09/27/17 10:00

09/27/17

**Project Name:** Not Specified Lab Number: L1734538 **Project Number:** 20107 **Report Date:** 10/11/17

**SAMPLE RESULTS** 

Date Collected: Lab ID: L1734538-04 Client ID: FILTER F-13 Date Received: Sample Location: Field Prep: Not Specified Matrix: Dw

Not Specified

Analytical Dilution Date Date Prep

Parameter	Result	Qualifier	Units	RL	MDL	Factor	Prepared	Analyzed	Method	Method	Analyst
Total Metals - Mans	sfield Lab										
Iron, Total	ND		mg/l	0.050		1	10/11/17 10:30	) 10/11/17 14:54	EPA 3005A	19,200.7	AB
Manganese, Total	0.045		mg/l	0.010		1	10/11/17 10:30	) 10/11/17 14:54	EPA 3005A	19,200.7	AB



L1734538

Project Name:Not SpecifiedLab Number:Project Number:20107Report Date:

**Report Date:** 10/11/17

Method Blank Analysis Batch Quality Control

Parameter	Result Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfiel	d Lab for sample(s):	01-04 B	atch: W	G10492	00-1				
Iron, Total	ND	mg/l	0.050		1	10/11/17 10:30	10/11/17 14:12	19,200.7	AB
Manganese, Total	ND	mg/l	0.010		1	10/11/17 10:30	10/11/17 14:12	19,200.7	AB

**Prep Information** 

Digestion Method: EPA 3005A



### Lab Control Sample Analysis Batch Quality Control

**Project Name:** Not Specified

Lab Number:

L1734538

**Project Number:** 20107 Report Date:

Parameter	LCS %Recovery	LCSD Qual %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated samp	le(s): 01-04 Batch	n: WG1049200-2					
Iron, Total	102	-		85-115	-		
Manganese, Total	98	-		85-115	-		



### Matrix Spike Analysis Batch Quality Control

**Project Name:** Not Specified

**Project Number:** 

20107

Lab Number:

L1734538

Report Date: 10/11/17

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Recovery Qual Limits		Qual	RPD Limits
Total Metals - Mansfield Lab	Associated sam	nple(s): 01-04	QC Bat	tch ID: WG1049	9200-3	QC Sam	nple: L1734538-0	01 Client ID: R	AW-13		
Iron, Total	0.065	1	1.10	104		-	-	75-125	-		20
Manganese, Total	0.051	0.5	0.546	99		-	-	75-125	-		20

## Lab Duplicate Analysis Batch Quality Control

Not Specified Batch Quality Conf

Lab Number:

L1734538

**Report Date:** 10/11/17

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01	-04 QC Batch ID:	WG1049200-4 QC Sample:	L1734538-01	Client ID:	RAW-13	
Iron, Total	0.065	0.063	mg/l	3		20
Manganese, Total	0.051	0.049	mg/l	4		20



**Project Name:** 

Project Number:

20107

# INORGANICS & MISCELLANEOUS



Project Name: Not Specified Lab Number: L1734538

Project Number: 20107 Report Date: 10/11/17

**SAMPLE RESULTS** 

Lab ID: L1734538-01 Date Collected: 09/27/17 10:00

Client ID: RAW-13 Date Received: 09/27/17 Sample Location: Not Specified Field Prep: Not Specified

Matrix: Dw

Parameter	Result	Qualifier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry -	Westborough Lab								
Turbidity	0.31	NTU	0.20		1	-	09/27/17 18:32	44,180.1	AS
Alkalinity, Total	13.0	mg CaCO3/L	2.00	NA	1	-	09/28/17 09:25	121,2320B	BR
(H) Ha	5.8	SU	_	NA	1	-	09/27/17 18:12	121.4500H+-B	AS



Project Name: Lab Number: L1734538

Project Number: 20107 Report Date: 10/11/17

Method Blank Analysis Batch Quality Control

Parameter	Result Qu	alifier Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry	- Westborough Lab	for sample(s): 01	Batch:	WG10	)46336-1				
Turbidity	ND	NTU	0.20		1	-	09/27/17 18:32	44,180.1	AS
General Chemistry	- Westborough Lab	for sample(s): 01	Batch:	WG10	)46547-1				
Alkalinity, Total	ND	mg CaCO3/L	2.00	NA	1	-	09/28/17 09:25	121.2320B	BR



## Lab Control Sample Analysis Batch Quality Control

Project Name: Not Specified

**Project Number:** 20107

Lab Number:

L1734538

Report Date:

Parameter	LCS %Recovery Qua	LCSD al %Recovery Qu	%Recovery lal Limits	RPD	Qual RPD Limits
General Chemistry - Westborough Lab	Associated sample(s): 01	Batch: WG1046332-1			
pH	100	-	99-101	-	5
General Chemistry - Westborough Lab	Associated sample(s): 01	Batch: WG1046336-2			
Turbidity	102	-	90-110	-	
General Chemistry - Westborough Lab	Associated sample(s): 01	Batch: WG1046547-2			
Alkalinity, Total	104	-	90-110	-	10

### Matrix Spike Analysis Batch Quality Control

Project Name: Not Specified

**Project Number:** 

20107

Lab Number:

L1734538

Report Date:

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Qual Found	MSD %Recovery Qua	Recovery al Limits	RPD Qual	RPD Limits
General Chemistry - Westbord	ough Lab Asso	ciated samp	ole(s): 01	QC Batch ID: V	VG1046547-4	QC Sample: L17345	38-01 Client	ID: RAW-13	
Alkalinity, Total	13.0	100	112	99	-	-	86-116	-	10



## Lab Duplicate Analysis Batch Quality Control

**Project Name:** Not Specified

Project Number: 20107 Lab Number: L1734538 10/11/17

Report Date:

Parameter	Native Sample	Duplicate Sample	e Units RF	D Qual	RPD Limits
General Chemistry - Westborough Lab A	ssociated sample(s): 01 QC Bato	ch ID: WG1046332-2 Q	C Sample: L1734538-0	1 Client ID: F	RAW-13
рН (Н)	5.8	5.8	SU	)	5
General Chemistry - Westborough Lab A	ssociated sample(s): 01 QC Batc	ch ID: WG1046336-3 Q	C Sample: L1734538-0	1 Client ID: F	RAW-13
Turbidity	0.31	0.33	NTU	3	13
General Chemistry - Westborough Lab As	ssociated sample(s): 01 QC Bato	ch ID: WG1046547-3 Q	C Sample: L1734538-0	1 Client ID: F	RAW-13
Alkalinity, Total	13.0	12.7	mg CaCO3/L	2	10



Lab Number: L1734538

Report Date: 10/11/17

### Sample Receipt and Container Information

Were project specific reporting limits specified?

Not Specified

YES

**Cooler Information** 

Project Name:

Project Number: 20107

Cooler Custody Seal

A Absent

Container Information			Initial	Final	Temp			Frozen	
Container ID	Container Type	Cooler	рН	pН		Pres	Seal	Date/Time	Analysis(*)
L1734538-01A	Plastic 250ml HNO3 preserved	Α	<2	<2	4.4	Υ	Absent		FE-UI(180),MN-UI(180)
L1734538-01B	Plastic 250ml unpreserved	Α	7	7	4.4	Υ	Absent		TURB-180(2),PH-4500(.01)
L1734538-01C	Plastic 250ml unpreserved/No Headspace	Α	NA		4.4	Υ	Absent		ALK-T-2320(14)
L1734538-01D	Plastic 250ml Trizma preserved	Α	NA		4.4	Υ	Absent		A2-537-PFOA/PFOS(14)
L1734538-01E	Plastic 250ml Trizma preserved	Α	NA		4.4	Υ	Absent		A2-537-PFOA/PFOS(14)
L1734538-01F	Plastic 250ml Trizma preserved	Α	NA		4.4	Υ	Absent		A2-537-PFOA/PFOS(14)
L1734538-01G	Amber 500ml NaSulfite/NaHSO4 preserved	Α	6	6	4.4	N	Absent		A2-14DIOXANE-522(28)
L1734538-01H	Amber 500ml NaSulfite/NaHSO4 preserved	Α	6	6	4.4	N	Absent		A2-14DIOXANE-522(28)
L1734538-02A	Plastic 250ml HNO3 preserved	Α	<2	<2	4.4	Υ	Absent		FE-UI(180),MN-UI(180)
L1734538-02G	Amber 500ml NaSulfite/NaHSO4 preserved	Α	<4	<4	4.4	Υ	Absent		A2-14DIOXANE-522(28)
L1734538-02H	Amber 500ml NaSulfite/NaHSO4 preserved	Α	<4	<4	4.4	Υ	Absent		A2-14DIOXANE-522(28)
L1734538-03A	Plastic 250ml HNO3 preserved	Α	<2	<2	4.4	Υ	Absent		FE-UI(180),MN-UI(180)
L1734538-03D	Plastic 250ml Trizma preserved	Α	NA		4.4	Υ	Absent		A2-537-PFOA/PFOS(14)
L1734538-03E	Plastic 250ml Trizma preserved	Α	NA		4.4	Υ	Absent		A2-537-PFOA/PFOS(14)
L1734538-03F	Plastic 250ml Trizma preserved	Α	NA		4.4	Υ	Absent		A2-537-PFOA/PFOS(14)
L1734538-03G	Amber 500ml NaSulfite/NaHSO4 preserved	Α	6	6	4.4	N	Absent		A2-14DIOXANE-522(28)
L1734538-03H	Amber 500ml NaSulfite/NaHSO4 preserved	Α	6	6	4.4	N	Absent		A2-14DIOXANE-522(28)
L1734538-04A	Plastic 250ml HNO3 preserved	Α	<2	<2	4.4	Υ	Absent		FE-UI(180),MN-UI(180)
L1734538-04D	Plastic 250ml Trizma preserved	Α	NA		4.4	Υ	Absent		A2-537-PFOA/PFOS(14)
L1734538-04E	Plastic 250ml Trizma preserved	Α	NA		4.4	Υ	Absent		A2-537-PFOA/PFOS(14)
L1734538-04F	Plastic 250ml Trizma preserved	Α	NA		4.4	Υ	Absent		A2-537-PFOA/PFOS(14)
L1734538-04G	Amber 500ml NaSulfite/NaHSO4 preserved	Α	<4	<4	4.4	Υ	Absent		A2-14DIOXANE-522(28)
L1734538-04H	Amber 500ml NaSulfite/NaHSO4 preserved	Α	6	6	4.4	N	Absent		A2-14DIOXANE-522(28)



**Lab Number:** L1734538

Report Date: 10/11/17

Project Number: 20107

Container Information			Initial		Temp			Frozen		
Container ID	Container Type	Cooler	pН	pН	deg C	Pres	Seal	Date/Time	Analysis(*)	
L1734538-05A	Plastic 250ml Trizma preserved	Α	NA		4.4	Υ	Absent		A2-537-PFOA/PFOS(14)	



Project Name:

Not Specified

Project Name: Not Specified Lab Number: L1734538

Project Number: 20107 Report Date: 10/11/17

#### **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**

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

#### Terms

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.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

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.

#### 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

Report Format: Data Usability Report



Project Name:Not SpecifiedLab Number:L1734538Project Number:20107Report Date:10/11/17

#### Data Qualifiers

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

- Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- 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 SpecifiedLab Number:L1734538Project Number:20107Report Date:10/11/17

#### **REFERENCES**

- 19 Inductively Coupled Plasma Atomic Emission Spectrometric Method for Trace Element Analysis of Water and Wastes. Appendix C, Part 136, 40 CFR (Code of Federal Regulations). July 1, 1999 edition.
- Methods for the Determination of Inorganic Substances in Environmental Samples, EPA/600/R-93/100, August 1993.
- Determination of 1,4-Dioxane in Drinking Water by Solid Phase Extraction (SPE) and Gas Chromatography/Mass Spectrometry (GC/MS) with Selected Ion Monitoring (SIM). EPA Method 522, EPA/600/R-08/101. Version 1.0, September 2008.
- 121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.
- Determination of Selected Perfluorintated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS). EPA Method 537, EPA/600/R-08/092. Version 1.1, September 2009.

#### 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

ID No.:17873 Revision 10

Page 1 of 1

Published Date: 1/16/2017 11:00:05 AM

#### 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-Colilert-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 II, 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-Colilert-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.

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.

Pre-Qualtrax Document ID: 08-113 Document Type: Form

	ANSFIELD CHAIN	OF CUSTODY	PAGE OF	Date Rec'd in Lab:	רודרו	ALPHA Job #: 1734538
WESTBORO, MA TEL: 508-898-9220	MANSFIELD, MA	<b>Project Information</b>		Report Information -		Billing Information
FAX: 508-898-9193	TEL: 508-822-9300 FAX: 508-822-3288	Project Name:		□ FAX □ EN	MAIL	☐ Same as Client info PO#:
Client Information		Project Location:	51 y 2 y 3 y 3	□ ADEx □ Add	d'I Deliverables	
Client: Blue	Vesser Hill Rd.	Project #:		Regulatory Requirement	ents/Report Limits	
Address: 571	Vesser Hill Rd	Project Manager:		State /Fed Program	Criteria	
Charlton	MA 01507	ALPHA Quote #:				
Phone: 774 Z	200 8079	Turn-Around Time				
Email:  Carolton  These samples har  Other Project S	Pecific Requirements/Comments	Date Due:	H (only confirmed if pre-approved!) Time:	ANALYSIS KANALYSIS KANALYSIS KANALYSIS		SAMPLE HANDLING Filtration Done
	t cost) will be omitted unless	s you check here:		7402		│ │ │ Not needed □ Lab to do Preservation □ Lab to do □ Lab to do □ T
ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date T	Sample Sampler' me Matrix Initials	s La I True	//////	Lab to do (Please specify below)  Sample Specific Comments
34558-01	Raw - 13	9/27 10:	UN DW ARD	XXXX		8
60	Filter F-13 Filter F-13	14		XX		3
93	Filter F-17			XXX		1
04	Fite F 13			T		6
os	Field Blank					6
	held Blank	- Y \		X		
			Container Type			Please print clearly, legibly and com-
		Polinguished Div	Preservative			pletely. Samples can not be logged in and turnaround time clock will not
	(1)	Relinquished By:	Date/Time	Received By:	Date/Ti	
ORM NO: 101-09 (rev. 27-SE	EP-10)	1141	111 17-11	June	AAZ 9/27/17	Alpha's Terms and Conditions. See reverse side.