



July 6, 2017

Mr. Michael Magnant, Town Administrator
Town of Rye
Town Office
10 Central Road
Rye, NH 03870

**RE: Breakfast Hill Landfill
PFC Groundwater Results – May 2017
CMA #527**

Dear Michael Magnant:

Please find enclosed the groundwater monitoring results from the May 2017 water quality sampling event for perflourinated compounds (PFCs) at the Breakfast Hill Landfill in Rye. The wells were sampled on May 24, 2017 by Eastern Analytical of Concord, NH and analyzed by ALS Environmental of Kelso, WA on June 9, 2017.

The ambient groundwater quality standard (AGQS) is 70 ng/L for either perfluorooctanoic acid (PFOA) or perfluorooctane sulfonate (PFOS), and for both PFOA and PFOS combined where these chemicals are present together.

A summary of PFOA and PFOSs concentrations detected in the Breakfast Hill Landfill water samples is provided below:

Well Location	Perfluorooctanoic acid (PFOA) (ng/L)	Perfluorooctane sulfonic acid (PFOS) (ng/L)	PFOA + PFOS combined (ng/L)
MW-1A	3.3	5.8	9.1
MW-4A	46	36	82
MW-6A	67	7	74
MW-7B	22	Not detected	22
MW-10	45	23	68

We note that CMA Engineers will provide a presentation of these results to the Board of Selectman at the meeting on Monday July 10, 2017. We note that MW-4A and MW-6A are within the Groundwater Management Zone established for the site, and that the Town of Rye in recent years has adopted a zoning overlay of certain downgradient areas precluding the use of groundwater for drinking water purposes.

Submission of the regular groundwater sampling results, in accordance with the groundwater management permit, will occur under separate cover.

If you have any questions regarding these results, please don't hesitate to contact us.

Very truly yours,

CMA ENGINEERS, INC.



Jodie Bray Strickland, P.E.

Project Engineer

Enclosures: Eastern Analytical Inc. Laboratory Report, May 24, 2017

Breakfast Hill Landfill Site Plan

cc: Ken Aspen, Rye Water District
Paul Rydel, P.G., NH DES

Paul Schmidt
CMA Engineers, Inc. (Manchester)
Langler Place, 55 South Commercial St.
Manchester, NH 03101



Subject: Laboratory Report

Eastern Analytical, Inc. ID: 169123
Client Identification: Rye - Breakfast Hill LF
Date Received: 5/24/2017

Dear Mr. Schmidt :

Enclosed please find the laboratory report for the above identified project. All analyses were performed in accordance with our QA/QC Program. Unless otherwise stated, holding times, preservation techniques, container types, and sample conditions adhered to EPA Protocol. Samples which were collected by Eastern Analytical, Inc. (EAI) were collected in accordance with approved EPA procedures. Eastern Analytical, Inc. certifies that the enclosed test results meet all requirements of NELAP and other applicable state certifications. Please refer to our website at www.eailabs.com for a copy of our NELAP certificate and accredited parameters.

The following standard abbreviations and conventions apply to all EAI reports:

- Solid samples are reported on a dry weight basis, unless otherwise noted
- < : "less than" followed by the reporting limit
- > : "greater than" followed by the reporting limit
- %R : % Recovery

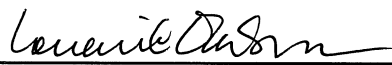
Eastern Analytical Inc. maintains certification in the following states: Connecticut (PH-0492), Maine (NH005), Massachusetts (M-NH005), New Hampshire/NELAP (1012), Rhode Island (269) and Vermont (VT1012).

The following information is contained within this report: Sample Conditions summary, Analytical Results/Data, Quality Control data (if requested) and copies of the Chain of Custody. This report may not be reproduced except in full, without the the written approval of the laboratory.

If you have any questions regarding the results contained within, please feel free to directly contact me or the chemist(s) who performed the testing in question. Unless otherwise requested, we will dispose of the sample(s) 30 days from the sample receipt date.

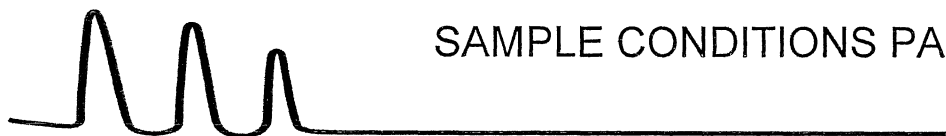
We appreciate this opportunity to be of service and look forward to your continued patronage.

Sincerely,


Lorraine Olashaw, Lab Director

6-28-17
Date

35
of pages (excluding cover letter)



SAMPLE CONDITIONS PAGE

EAI ID#: 169123

Client: **CMA Engineers, Inc. (Portsmouth)**

Client Designation: **Rye - Breakfast Hill LF**

Temperature upon receipt (°C): 3.1

Received on ice or cold packs (Yes/No): Y

Acceptable temperature range (°C): 0-6

Lab ID	Sample ID	Date Received	Date Sampled	Sample Matrix	% Dry Weight	Exceptions/Comments (other than thermal preservation)
169123.01	MW-1 A	5/24/17	5/24/17	aqueous		Adheres to Sample Acceptance Policy
169123.02	MW-4 A	5/24/17	5/24/17	aqueous		Adheres to Sample Acceptance Policy
169123.03	MW-6 A	5/24/17	5/24/17	aqueous		Adheres to Sample Acceptance Policy
169123.04	MW-7 B	5/24/17	5/24/17	aqueous		Adheres to Sample Acceptance Policy
169123.05	MW-10	5/24/17	5/24/17	aqueous		Adheres to Sample Acceptance Policy

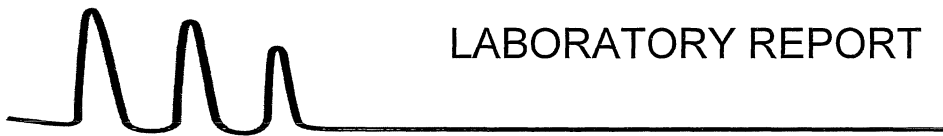
Samples were properly preserved and the pH measured when applicable unless otherwise noted. Analysis of solids for pH, Flashpoint, Ignitability, Paint Filter, Corrosivity, Conductivity and Specific Gravity are reported on an "as received" basis.

Immediate analyses, pH, Total Residual Chlorine, Dissolved Oxygen and Sulfite, performed at the laboratory were run outside of the recommended 15 minute hold time.

All results contained in this report relate only to the above listed samples.

References include:

- 1) EPA 600/4-79-020, 1983
- 2) Standard Methods for Examination of Water and Wastewater, 20th Edition, 1998 and 22nd Edition, 2012
- 3) Test Methods for Evaluating Solid Waste SW 846 3rd Edition including updates IVA and IVB
- 4) Hach Water Analysis Handbook, 2nd edition, 1992



LABORATORY REPORT

EAI ID#: 169123

Client: **CMA Engineers, Inc. (Manchester)**

Client Designation: **Rye - Breakfast Hill LF**

Sample ID:	MW-1 A	MW-4 A	MW-6 A	MW-7 B		Analysis			
Lab Sample ID:	169123.01	169123.02	169123.03	169123.04	Units	Date	Time	Method	Analyst
Matrix:	aqueous	aqueous	aqueous	aqueous					
Date Sampled:	5/24/17	5/24/17	5/24/17	5/24/17					
Date Received:	5/24/17	5/24/17	5/24/17	5/24/17					
Chloride	270	59	8	13	mg/L	05/25/17	10:30	4500CIE-97	KD
Nitrate-N	< 0.5	< 0.5	9.7	< 0.5	mg/L	05/25/17	9:57	353.2	KD
TKN	< 0.5	1.1	< 0.5	< 0.5	mg/L	06/07/17	13:18	4500N _{org} C/N	SEL

Sample ID:	MW-10		Analysis			
Lab Sample ID:	169123.05	Units	Date	Time	Method	Analyst
Matrix:	aqueous					
Date Sampled:	5/24/17					
Date Received:	5/24/17					
Chloride	200	mg/L	05/25/17	10:33	4500CIE-97	KD
Nitrate-N	0.8	mg/L	05/25/17	10:17	353.2	KD
TKN	1.6	mg/L	06/07/17	13:42	4500N _{org} C/N	SEL



LABORATORY REPORT

EAI ID#: 169123

Client: **CMA Engineers, Inc. (Manchester)**

Client Designation: **Rye - Breakfast Hill LF**

Sample ID:	MW-1 A	MW-4 A	MW-6 A	MW-7 B					
Lab Sample ID:	169123.01	169123.02	169123.03	169123.04					
Matrix:	aqueous	aqueous	aqueous	aqueous					
Date Sampled:	5/24/17	5/24/17	5/24/17	5/24/17	Analytical		Date of		
Date Received:	5/24/17	5/24/17	5/24/17	5/24/17	Matrix	Units	Analysis	Method	Analyst
Iron	< 0.05	2.1	< 0.05	6.7	AqDis	mg/L	5/26/17	200.7	JCS
Manganese	0.11	13	0.027	3.9	AqDis	mg/L	5/26/17	200.7	JCS

Sample ID: MW-10

Lab Sample ID: 169123.05

Matrix: aqueous

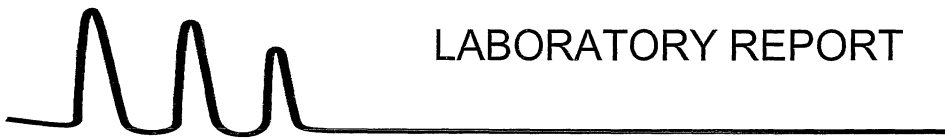
Date Sampled: 5/24/17

Date Received: 5/24/17

Iron 0.89

Manganese 1.7

Analytical Matrix	Units	Date of Analysis	Method	Analyst
AqDis	mg/L	5/26/17	200.7	JCS
AqDis	mg/L	5/26/17	200.7	JCS



LABORATORY REPORT

EAI ID#: 169123

Client: **CMA Engineers, Inc. (Manchester)**

Client Designation: **Rye - Breakfast Hill LF**

Sample ID:	MW-1 A	MW-4 A	MW-6 A	MW-7 B					
Lab Sample ID:	169123.01	169123.02	169123.03	169123.04					
Matrix:	aqueous	aqueous	aqueous	aqueous					
Date Sampled:	5/24/17	5/24/17	5/24/17	5/24/17					
Date Received:	5/24/17	5/24/17	5/24/17	5/24/17					
					Units	Date of	Analysis	Method	Analyst
Static Water Level	14.59	17.42	31.33	40.85	ft	5/24/17	Field	JG	
Field pH	6.2	6.1	6.4	6.3	SU	5/24/17	SM4500H	JL	
Field Conductivity	920	420	620	590	uS/cm	5/24/17	SM2510B	JL	

Sample ID:	MW-10								
Lab Sample ID:	169123.05								
Matrix:	aqueous								
Date Sampled:	5/24/17								
Date Received:	5/24/17								
					Units	Date of	Analysis	Method	Analyst
Static Water Level	25.36				ft	5/24/17	Field	JG	
Field pH	6.4				SU	5/24/17	SM4500H	JL	
Field Conductivity	1100				uS/cm	5/24/17	SM2510B	JL	



ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
T : +1 360 577 7222
F : +1 360 636 1068
www.alsglobal.com

June 23, 2017

Analytical Report for Service Request No: K1705369

Jennifer Laramie
Eastern Analytical, Inc.
25 Chenell Dr
Concord, NH 03301

RE: 169123

Dear Jennifer,

Enclosed are the results of the sample(s) submitted to our laboratory May 26, 2017
For your reference, these analyses have been assigned our service request number **K1705369**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3275. You may also contact me via email at Chris.Leaf@ALSGlobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental


Chris Leaf
Project Manager



ALS Environmental
ALS Group USA, Corp
1317 South 13th Avenue
Kelso, WA 98626
T : +1 360 577 7222
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Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLCMS

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

**ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses**

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjllabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.



Environmental

Case Narrative

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

ALS ENVIRONMENTAL

Client: Eastern Analytical, Inc.
Project: 169123
Sample Matrix: Water

Service Request No.: K1705369
Date Received: 05/26/17

Case Narrative

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Five water samples were received for analysis at ALS Environmental on 05/26/17. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

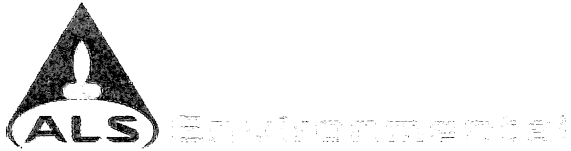
Sample Notes and Discussion:

Insufficient sample volume was received to perform a Matrix Spike/Matrix Spike Duplicate (MS/MSD). A Laboratory Control Sample/Duplicate Laboratory Control Sample (LCS/DLCS) was analyzed and reported in lieu of the MS/MSD for these samples.

No other anomalies associated with the analysis of these samples were observed.

Approved by _____





Chain of Custody

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

CHAIN-OF-CUSTODY RECORD

eastern analytical
professional laboratory services

EAI ID# 169123

Page 1

161705369

Sample ID Date Sampled Matrix aParameters Sample Notes

MWV-1 A 5/24/2017 14:58 aqueous Subcontract - PFCs EPA Method 537 9 Compound List (ALS)

MWV-4 A 5/24/2017 14:46 aqueous Subcontract - PFCs EPA Method 537 9 Compound List (ALS)

MWV-6 A 5/24/2017 14:26 aqueous Subcontract - PFCs EPA Method 537 9 Compound List (ALS)

MWV-7 B 5/24/2017 14:09 aqueous Subcontract - PFCs EPA Method 537 9 Compound List (ALS)

EAI ID# 169123 Project State: NH Project ID: 104

Company ALS Environmental (WA)
Address 1317 South 13th Ave
Address Kelso, WA 98626
Account #
Phone # (360) 430-7733
Fax Number

Results Needed by: Preferred date

QC Deliverables
 A A+ B B+ C P

Notes about project:

Email pdf of results and invoice to
customerservice@ealilabs.com.

PO #: 46245 EAI ID# 169123

Please call prior to analyzing, if RUSH surcharges will be applied.

Samples Collected by: [Signature]
Relinquished by: [Signature] Date/Time: 5/24/12 0920
Received by: [Signature]

Eastern Analytical, Inc. 25 Chenell Dr. Concord, NH 03301 Phone: (603)228-0525 1-800-287-0525 Fax: (603)228-4591
As a subcontract lab to EAI, you will defend, indemnify and hold Eastern Analytical, Inc., its officers, employees, and agents harmless from and against any and all liability, loss, expense or claims for injury or damages arising out of the performance against this chain of custody but only in proportion to and to the extent Page 9 of 29
acts or omissions of you as a subcontract lab, your officers, agents or employees

CHAIN-OF-CUSTODY RECORD

eastern analytical
professional laboratory services

EAI ID# 169123

Page 2

K1705369

Sample ID _____ Date Sampled Matrix _____ aParameters _____

MWV-10 | 5/24/2017 | aqueous | Subcontract - PFCs EPA Method 537.9 Compound List (ALS)
13:52

Sample Notes

EAI ID# 169123 Project State: NH
Project ID: 104

Company ALS Environmental (WA)
Address 1317 South 13th Ave
Address Kelso, WA 98626
Account # _____
Phone # (360) 430-7733

Fax Number

Eastern Analytical, Inc. 25 Chenell Dr. Concord, NH 03301

Phone: (603)228-0525

1-800-287-0525

Fax: (603)228-4591

As a subcontract lab to EAI, you will defend, indemnify and hold Eastern Analytical, Inc., its officers, employees, and agents harmless from and against any and all liability, loss, expense or claims for injury or damages arising out of the performance against this chain of custody but only in proportion to and to the extent such liability, loss, expense, or claims for injury or damages are caused by or result from the negligent or intentional acts or omissions of you as a subcontract lab, your officers, agents or employees

PO # 46245

EAI ID# 169123

Please call prior to analyzing, if RUSH surcharges will be applied.

Results Needed by: Preferred date
QC Deliverables
 A A+ B B+ C P.
Notes about project:
Email pdf of results and invoice to customerservice@eailabs.com.

Samples Collected by: [Signature]
Relinquished by: [Signature] Date/Time 5/24/17 0920
Received by: [Signature]

Relinquished by: _____ Date/Time _____ Received by: _____



PC CC

Cooler Receipt and Preservation Form

Client Eastern Analytical Service Request K17 05369

Received: 5/26/17 Opened: 5/26/17 By: UL Unloaded: 5/26/17 By: UL

- 1. Samples were received via? USPS Fed Ex UPS DHL PDX Courier Hand Delivered
- 2. Samples were received in: (circle) Cooler Box Envelope Other _____ NA
- 3. Were custody seals on coolers? NA Y N If yes, how many and where? _____
If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID	Tracking Number	NA	Filed
2.7	2.7	—	—	0.0	325	169123	12x46599019703 3340		

- 4. Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves _____
- 5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- 6. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA Y N
If applicable, tissue samples were received: Frozen Partially Thawed Thawed
- 7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
- 8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
- 9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
- 10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
- 11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
- 12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count	Out of	Head-	Broke	pH	Reagent	Volume	Reagent Lot	Initials	Time
	Bottle Type	Temp	space				added	Number		

Notes, Discrepancies, & Resolutions: _____



ENVIRONMENTAL

Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360)577-7222 Fax (360)636-1068
www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Eastern Analytical, Inc.

Service Request: K1705369

Project:

Date Collected: NA

Sample Matrix: Water

Date Received: NA

Sample Name: Batch QC

Units: ng/L

Lab Code: K1705261-002

Basis: NA

Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

Analysis Method: PFC/537M

Prep Method: EPA 3535A

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoropentanoic acid (PFPeA)	ND U	10	1	06/09/17 18:25	5/30/17	
Perfluorohexanoic acid (PFHxA)	2.1 J	10	1	06/09/17 18:25	5/30/17	
Perfluoroheptanoic acid (PFHpA)	ND U	10	1	06/09/17 18:25	5/30/17	
Perfluorooctanoic acid (PFOA)	0.74 J	10	1	06/09/17 18:25	5/30/17	
Perfluorononanoic acid (PFNA)	ND U	10	1	06/09/17 18:25	5/30/17	
Perfluorobutane sulfonic acid (PFBS)	ND U	10	1	06/09/17 18:25	5/30/17	
Perfluorobutanoic acid (PFBA)	1.1 J	10	1	06/09/17 18:25	5/30/17	
Perfluorohexane sulfonic acid (PFHxS)	1.2 J	10	1	06/09/17 18:25	5/30/17	
Perfluorooctane sulfonic acid (PFOS)	5.5 J	10	1	06/09/17 18:25	5/30/17	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C5-PFPeA	94	50 - 150	06/09/17 18:25	
13C3-PFBS	79	50 - 150	06/09/17 18:25	
13C4-PFHpA	99	50 - 150	06/09/17 18:25	
13C2-PFHxA	80	10 - 151	06/09/17 18:25	
18O2-PFHxS	88	20 - 128	06/09/17 18:25	
13C4-PFOA	82	13 - 142	06/09/17 18:25	
13C5-PFNA	84	15 - 143	06/09/17 18:25	
13C4-PFOS	70	11 - 131	06/09/17 18:25	
13C4-PFBA	83	19 - 126	06/09/17 18:25	

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Analytical Report

Client: Eastern Analytical, Inc.
Project:
Sample Matrix: Water
Sample Name: MW-1A
Lab Code: K1705369-001

Service Request: K1705369
Date Collected: 05/24/17 14:58
Date Received: 05/26/17 09:20

Units: ng/L
Basis: NA

Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

Analysis Method: PFC/537M
Prep Method: EPA 3535A

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoropentanoic acid (PFPeA)	ND U	3.6	1	06/19/17 19:06	6/6/17	
Perfluorohexanoic acid (PFHxA)	ND U	3.6	1	06/19/17 19:06	6/6/17	
Perfluoroheptanoic acid (PFHpA)	ND U	3.6	1	06/19/17 19:06	6/6/17	
Perfluorooctanoic acid (PFOA)	3.3	1.4	1	06/19/17 19:06	6/6/17	
Perfluorononanoic acid (PFNA)	ND U	3.6	1	06/19/17 19:06	6/6/17	
Perfluorobutane sulfonic acid (PFBS)	ND U	3.6	1	06/19/17 19:06	6/6/17	
Perfluorobutanoic acid (PFBA)	ND U	7.1	1	06/19/17 19:06	6/6/17	
Perfluorohexane sulfonic acid (PFHxS)	ND U	3.6	1	06/19/17 19:06	6/6/17	
Perfluorooctane sulfonic acid (PFOS)	5.8	3.6	1	06/19/17 19:06	6/6/17	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C5-PFPeA	96	50 - 150	06/19/17 19:06	
13C3-PFBS	59	50 - 150	06/19/17 19:06	
13C4-PFHpA	85	50 - 150	06/19/17 19:06	
13C2-PFHxA	97	10 - 151	06/19/17 19:06	
18O2-PFHxS	78	20 - 128	06/19/17 19:06	
13C4-PFOA	98	13 - 142	06/19/17 19:06	
13C5-PFNA	89	15 - 143	06/19/17 19:06	
13C4-PFOS	65	11 - 131	06/19/17 19:06	
13C4-PFBA	89	19 - 126	06/19/17 19:06	

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Analytical Report

Client: Eastern Analytical, Inc.

Service Request: K1705369

Project:

Date Collected: 05/24/17 14:46

Sample Matrix: Water

Date Received: 05/26/17 09:20

Sample Name: MW-4A

Units: ng/L

Lab Code: K1705369-002

Basis: NA

Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

Analysis Method: PFC/537M

Prep Method: EPA 3535A

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoropentanoic acid (PFPeA)	6.2	3.4	1	06/09/17 20:20	5/30/17	
Perfluorohexanoic acid (PFHxA)	12	3.4	1	06/09/17 20:20	5/30/17	
Perfluoroheptanoic acid (PFHpA)	6.4	3.4	1	06/09/17 20:20	5/30/17	
Perfluorooctanoic acid (PFOA)	46	1.4	1	06/09/17 20:20	5/30/17	
Perfluorononanoic acid (PFNA)	ND U	3.4	1	06/09/17 20:20	5/30/17	
Perfluorobutane sulfonic acid (PFBS)	ND U	3.4	1	06/09/17 20:20	5/30/17	
Perfluorobutanoic acid (PFBA)	ND U	6.9	1	06/09/17 20:20	5/30/17	
Perfluorohexane sulfonic acid (PFHxS)	4.9	3.4	1	06/09/17 20:20	5/30/17	
Perfluorooctane sulfonic acid (PFOS)	36	3.4	1	06/09/17 20:20	5/30/17	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C5-PFPeA	106	50 - 150	06/09/17 20:20	
13C3-PFBS	90	50 - 150	06/09/17 20:20	
13C4-PFHpA	111	50 - 150	06/09/17 20:20	
13C2-PFHxA	94	10 - 151	06/09/17 20:20	
18O2-PFHxS	86	20 - 128	06/09/17 20:20	
13C4-PFOA	90	13 - 142	06/09/17 20:20	
13C5-PFNA	94	15 - 143	06/09/17 20:20	
13C4-PFOS	69	11 - 131	06/09/17 20:20	
13C4-PFBA	85	19 - 126	06/09/17 20:20	

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Analytical Report

Client: Eastern Analytical, Inc.
Project:
Sample Matrix: Water
Sample Name: MW-6A
Lab Code: K1705369-003

Service Request: K1705369
Date Collected: 05/24/17 14:26
Date Received: 05/26/17 09:20

Units: ng/L
Basis: NA

Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

Analysis Method: PFC/537M
Prep Method: EPA 3535A

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoropentanoic acid (PFPeA)	ND U	3.6	1	06/19/17 20:06	6/6/17	
Perfluorohexanoic acid (PFHxA)	8.5	3.6	1	06/19/17 20:06	6/6/17	
Perfluoroheptanoic acid (PFHpA)	13	3.6	1	06/19/17 20:06	6/6/17	
Perfluorooctanoic acid (PFOA)	67	1.4	1	06/19/17 20:06	6/6/17	
Perfluorononanoic acid (PFNA)	ND U	3.6	1	06/19/17 20:06	6/6/17	
Perfluorobutanoic acid (PFBA)	ND U	7.1	1	06/19/17 20:06	6/6/17	
Perfluorobutane sulfonic acid (PFBS)	ND U	3.6	1	06/19/17 20:06	6/6/17	
Perfluorohexane sulfonic acid (PFHxS)	5.2	3.6	1	06/19/17 20:06	6/6/17	
Perfluorooctane sulfonic acid (PFOS)	7.0	3.6	1	06/19/17 20:06	6/6/17	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C5-PFPeA	93	50 - 150	06/19/17 20:06	
13C3-PFBS	63	50 - 150	06/19/17 20:06	
13C4-PFHpA	84	50 - 150	06/19/17 20:06	
13C2-PFHxA	88	10 - 151	06/19/17 20:06	
18O2-PFHxS	71	20 - 128	06/19/17 20:06	
13C4-PFOA	82	13 - 142	06/19/17 20:06	
13C5-PFNA	76	15 - 143	06/19/17 20:06	
13C4-PFOS	56	11 - 131	06/19/17 20:06	
13C4-PFBA	78	19 - 126	06/19/17 20:06	

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Analytical Report

Client: Eastern Analytical, Inc.

Service Request: K1705369

Project:

Date Collected: 05/24/17 14:09

Sample Matrix: Water

Date Received: 05/26/17 09:20

Sample Name: MW-7B

Units: ng/L

Lab Code: K1705369-004

Basis: NA

Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

Analysis Method: PFC/537M

Prep Method: EPA 3535A

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoropentanoic acid (PFPeA)	9.0	3.6	1	06/09/17 20:31	5/30/17	
Perfluorohexanoic acid (PFHxA)	14	3.6	1	06/09/17 20:31	5/30/17	
Perfluoroheptanoic acid (PFHpA)	7.3	3.6	1	06/09/17 20:31	5/30/17	
Perfluorooctanoic acid (PFOA)	22	1.4	1	06/09/17 20:31	5/30/17	
Perfluorononanoic acid (PFNA)	ND U	3.6	1	06/09/17 20:31	5/30/17	
Perfluorobutanoic acid (PFBA)	8.4	7.1	1	06/09/17 20:31	5/30/17	
Perfluorobutane sulfonic acid (PFBS)	ND U	3.6	1	06/09/17 20:31	5/30/17	
Perfluorohexane sulfonic acid (PFHxS)	14	3.6	1	06/09/17 20:31	5/30/17	
Perfluorooctane sulfonic acid (PFOS)	ND U	3.6	1	06/09/17 20:31	5/30/17	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C5-PFPeA	105	50 - 150	06/09/17 20:31	
13C3-PFBS	95	50 - 150	06/09/17 20:31	
13C4-PFHxA	110	50 - 150	06/09/17 20:31	
13C2-PFHxA	92	10 - 151	06/09/17 20:31	
18O2-PFHxS	94	20 - 128	06/09/17 20:31	
13C4-PFOA	90	13 - 142	06/09/17 20:31	
13C5-PFNA	87	15 - 143	06/09/17 20:31	
13C4-PFOS	66	11 - 131	06/09/17 20:31	
13C4-PFBA	85	19 - 126	06/09/17 20:31	

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Analytical Report

Client: Eastern Analytical, Inc.

Service Request: K1705369

Project:

Date Collected: 05/24/17 13:52

Sample Matrix: Water

Date Received: 05/26/17 09:20

Sample Name: MW-10

Units: ng/L

Lab Code: K1705369-005

Basis: NA

Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

Analysis Method: PFC/537M

Prep Method: EPA 3535A

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoropentanoic acid (PFPeA)	8.8	3.6	1	06/09/17 20:41	5/30/17	
Perfluorohexanoic acid (PFHxA)	14	3.6	1	06/09/17 20:41	5/30/17	
Perfluoroheptanoic acid (PFHpA)	9.3	3.6	1	06/09/17 20:41	5/30/17	
Perfluorooctanoic acid (PFOA)	45	1.4	1	06/09/17 20:41	5/30/17	
Perfluorononanoic acid (PFNA)	ND U	3.6	1	06/09/17 20:41	5/30/17	
Perfluorobutanoic acid (PFBA)	9.9	7.1	1	06/09/17 20:41	5/30/17	
Perfluorobutane sulfonic acid (PFBS)	ND U	3.6	1	06/09/17 20:41	5/30/17	
Perfluorohexane sulfonic acid (PFHxS)	7.7	3.6	1	06/09/17 20:41	5/30/17	
Perfluorooctane sulfonic acid (PFOS)	23	3.6	1	06/09/17 20:41	5/30/17	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C5-PFPeA	106	50 - 150	06/09/17 20:41	
13C3-PFBS	87	50 - 150	06/09/17 20:41	
13C4-PFHpA	113	50 - 150	06/09/17 20:41	
13C2-PFHxA	93	10 - 151	06/09/17 20:41	
18O2-PFHxS	82	20 - 128	06/09/17 20:41	
13C4-PFOA	93	13 - 142	06/09/17 20:41	
13C5-PFNA	91	15 - 143	06/09/17 20:41	
13C4-PFOS	73	11 - 131	06/09/17 20:41	
13C4-PFBA	84	19 - 126	06/09/17 20:41	

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Analytical Report

Client: Eastern Analytical, Inc.

Service Request: K1705369

Project:

Date Collected: NA

Sample Matrix: Water

Date Received: NA

Sample Name: Method Blank

Units: ng/L

Lab Code: KQ1706747-04

Basis: NA

Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

Analysis Method: PFC/537M

Prep Method: EPA 3535A

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoropentanoic acid (PFPeA)	ND U	4.0	1	06/09/17 17:54	5/30/17	
Perfluorohexanoic acid (PFHxA)	ND U	4.0	1	06/09/17 17:54	5/30/17	
Perfluoroheptanoic acid (PFHpA)	ND U	4.0	1	06/09/17 17:54	5/30/17	
Perfluorooctanoic acid (PFOA)	ND U	1.6	1	06/09/17 17:54	5/30/17	
Perfluorononanoic acid (PFNA)	ND U	4.0	1	06/09/17 17:54	5/30/17	
Perfluorobutane sulfonic acid (PFBS)	ND U	4.0	1	06/09/17 17:54	5/30/17	
Perfluorobutanoic acid (PFBA)	ND U	8.0	1	06/09/17 17:54	5/30/17	
Perfluorohexane sulfonic acid (PFHxS)	ND U	4.0	1	06/09/17 17:54	5/30/17	
Perfluorooctane sulfonic acid (PFOS)	ND U	4.0	1	06/09/17 17:54	5/30/17	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C5-PFPeA	114	50 - 150	06/09/17 17:54	
13C3-PFBS	98	50 - 150	06/09/17 17:54	
13C4-PFHpA	116	50 - 150	06/09/17 17:54	
13C2-PFHxA	99	10 - 151	06/09/17 17:54	
18O2-PFHxS	113	20 - 128	06/09/17 17:54	
13C4-PFOA	102	13 - 142	06/09/17 17:54	
13C5-PFNA	100	15 - 143	06/09/17 17:54	
13C4-PFOS	91	11 - 131	06/09/17 17:54	
13C4-PFBA	102	19 - 126	06/09/17 17:54	

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Analytical Report

Client: Eastern Analytical, Inc.

Service Request: K1705369

Project:

Date Collected: NA

Sample Matrix: Water

Date Received: NA

Sample Name: Method Blank

Units: ng/L

Lab Code: KQ1707239-03

Basis: NA

Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

Analysis Method: PFC/537M

Prep Method: EPA 3535A

Analyte Name	Result	MRL	Dil.	Date Analyzed	Date Extracted	Q
Perfluoropentanoic acid (PFPeA)	ND U	5.0	1	06/19/17 19:06	6/6/17	
Perfluorohexanoic acid (PFHxA)	ND U	5.0	1	06/19/17 19:06	6/6/17	
Perfluoroheptanoic acid (PFHpA)	ND U	5.0	1	06/19/17 19:06	6/6/17	
Perfluorooctanoic acid (PFOA)	ND U	2.0	1	06/19/17 19:06	6/6/17	
Perfluorononanoic acid (PFNA)	ND U	5.0	1	06/19/17 19:06	6/6/17	
Perfluorobutane sulfonic acid (PFBS)	ND U	5.0	1	06/19/17 19:06	6/6/17	
Perfluorobutanoic acid (PFBA)	ND U	10	1	06/19/17 19:06	6/6/17	
Perfluorohexane sulfonic acid (PFHxS)	ND U	5.0	1	06/19/17 19:06	6/6/17	
Perfluorooctane sulfonic acid (PFOS)	ND U	5.0	1	06/19/17 19:06	6/6/17	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
13C5-PFPeA	86	50 - 150	06/19/17 19:06	
13C3-PFBS	60	50 - 150	06/19/17 19:06	
13C4-PFHpA	102	50 - 150	06/19/17 19:06	
13C2-PFHxA	86	10 - 151	06/19/17 19:06	
18O2-PFHxS	86	20 - 128	06/19/17 19:06	
13C4-PFOA	88	13 - 142	06/19/17 19:06	
13C5-PFNA	77	15 - 143	06/19/17 19:06	
13C4-PFOS	70	11 - 131	06/19/17 19:06	
13C4-PFBA	82	19 - 126	06/19/17 19:06	

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QA/QC Report

Client: Eastern Analytical, Inc.
Project:
Sample Matrix: Water

Service Request: K1705369

SURROGATE RECOVERY SUMMARY
Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

Analysis Method: PFC/537M
Extraction Method: EPA 3535A

Sample Name	Lab Code	13C2-PFHxA	13C3-PFBS	13C4-PFBA
		10 - 151	50 - 150	19 - 126
Batch QC	K1705261-002	80	79	83
MW-1A	K1705369-001	97	59	89
MW-4A	K1705369-002	94	90	85
MW-6A	K1705369-003	88	63	78
MW-7B	K1705369-004	92	95	85
MW-10	K1705369-005	93	87	84
Batch QC	KQ1706747-01	96	100	98
Batch QC	KQ1706747-02	104	102	97
Lab Control Sample	KQ1706747-03	113	103	112
Method Blank	KQ1706747-04	99	98	102
Lab Control Sample	KQ1707239-01	101	63	87
Duplicate Lab Control Sample	KQ1707239-02	89	69	81
Method Blank	KQ1707239-03	86	60	82

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QA/QC Report

Client: Eastern Analytical, Inc.

Service Request: K1705369

Project:

Sample Matrix: Water

SURROGATE RECOVERY SUMMARY

Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

Analysis Method: PFC/537M

Extraction Method: EPA 3535A

Sample Name	Lab Code	13C4-PFHpA	13C4-PFOA	13C4-PFOS
		50 - 150	13 - 142	11 - 131
Batch QC	K1705261-002	99	82	70
MW-1A	K1705369-001	85	98	65
MW-4A	K1705369-002	111	90	69
MW-6A	K1705369-003	84	82	56
MW-7B	K1705369-004	110	90	66
MW-10	K1705369-005	113	93	73
Batch QC	KQ1706747-01	123	95	83
Batch QC	KQ1706747-02	124	94	91
Lab Control Sample	KQ1706747-03	126	107	102
Method Blank	KQ1706747-04	116	102	91
Lab Control Sample	KQ1707239-01	91	86	73
Duplicate Lab Control Sample	KQ1707239-02	104	83	70
Method Blank	KQ1707239-03	102	88	70

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QA/QC Report

Client: Eastern Analytical, Inc.
Project: 169123
Sample Matrix: Water

Service Request: K1705369
Date Collected: N/A
Date Received: N/A
Date Analyzed: 06/9/17
Date Extracted: 05/30/17

Duplicate Matrix Spike Summary

Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

Sample Name: Batch QC **Units:** ng/L
Lab Code: K1705261-002 **Basis:** NA
Analysis Method: PFC/537M
Prep Method: EPA 3535A

Analyte Name	Sample Result	Matrix Spike KQ1706747-01			Duplicate Matrix Spike KQ1706747-02			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Perfluoropentanoic acid (PFPeA)	ND U	117	143	82	110	143	77	50-150	6	30
Perfluorohexanoic acid (PFHxA)	2.1 J	131	143	90	129	143	89	68-141	1	30
Perfluoroheptanoic acid (PFHpA)	ND U	105	143	73	99.8	143	70	50-150	5	30
Perfluorooctanoic acid (PFOA)	0.74 J	132	143	92	134	143	93	72-130	2	30
Perfluorononanoic acid (PFNA)	ND U	121	143	84	124	143	87	77-127	2	30
Perfluorobutanoic acid (PFBA)	1.1 J	151	143	105	152	143	106	76-136	<1	30
Perfluorobutane sulfonic acid (PFBS)	ND U	98.6	127	78	100	127	79	70-127	2	30
Perfluorohexane sulfonic acid (PFHxS)	1.2 J	114	130	86	111	130	84	71-130	2	30
Perfluorooctane sulfonic acid (PFOS)	5.5 J	121	133	87	110	133	79	74-135	9	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client: Eastern Analytical, Inc.
Project: 169123
Sample Matrix: Water

Service Request: K1705369
Date Analyzed: 06/09/17
Date Extracted: 05/30/17

Lab Control Sample Summary
Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

Analysis Method: PFC/537M
Prep Method: EPA 3535A

Units: ng/L
Basis: NA
Analysis Lot: 549216

Lab Control Sample
KQ1706747-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Perfluorobutane sulfonic acid (PFBS)	111	142	78	50-150
Perfluorobutanoic acid (PFBA)	161	160	101	76-136
Perfluoroheptanoic acid (PFHpA)	120	160	75	50-150
Perfluorohexane sulfonic acid (PFHxS)	112	146	77	71-130
Perfluorohexanoic acid (PFHxA)	145	160	90	68-141
Perfluorononanoic acid (PFNA)	129	160	81	77-127
Perfluorooctane sulfonic acid (PFOS)	119	149	80	74-135
Perfluorooctanoic acid (PFOA)	148	160	92	72-130
Perfluoropentanoic acid (PFPeA)	136	160	85	50-150

Client: Eastern Analytical, Inc.
Project: 169123
Sample Matrix: Water

Service Request: K1705369
Date Analyzed: 06/19/17
Date Extracted: 06/06/17

Duplicate Lab Control Sample Summary
Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

Analysis Method: PFC/537M
Prep Method: EPA 3535A

Units: ng/L
Basis: NA
Analysis Lot: 550284

Lab Control Sample
KQ1707239-01

Duplicate Lab Control Sample
KQ1707239-02

Analyte Name	Lab Control Sample KQ1707239-01			Duplicate Lab Control Sample KQ1707239-02			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Perfluorobutane sulfonic acid (PFBS)	161	177	91	171	177	96	50-150	6	30
Perfluorobutanoic acid (PFBA)	195	200	97	210	200	105	76-136	8	30
Perfluoroheptanoic acid (PFHpA)	170	200	85	161	200	80	50-150	6	30
Perfluorohexane sulfonic acid (PFHxS)	155	183	85	191	183	105	71-130	21	30
Perfluorohexanoic acid (PFHxA)	155	200	78	165	200	83	68-141	6	30
Perfluorononanoic acid (PFNA)	176	200	88	191	200	96	77-127	8	30
Perfluorooctane sulfonic acid (PFOS)	141	186	76	167	186	90	74-135	17	30
Perfluorooctanoic acid (PFOA)	165	200	83	182	200	91	72-130	10	30
Perfluoropentanoic acid (PFPeA)	160	200	80	147	200	73	50-150	9	30

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Eastern Analytical, Inc.
Project:
Sample Matrix: Water

Service Request: K1705369
Date Analyzed: 06/19/17 19:06
Date Extracted: 06/06/17

Method Blank Summary

Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

Sample Name: Method Blank
Lab Code: KQ1707239-03

Instrument ID: K-LCMS-06
File ID: J:\LCMS06\Data\061917_b1\061917_108

Analysis Method: PFC/537M
Prep Method: EPA 3535A

Analysis Lot: 550284
Extraction Lot: 289719

This Method Blank applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Duplicate Lab Control Sample	KQ1707239-02	J:\LCMS06\Data\061917_b1\061917_110	06/19/17 19:06
MW-1A	K1705369-001	J:\LCMS06\Data\061917_b1\061917_111	06/19/17 19:06
Lab Control Sample	KQ1707239-01	J:\LCMS06\Data\061917_b1\061917_109	06/19/17 19:06
MW-6A	K1705369-003	J:\LCMS06\Data\061917_b1\061917_112	06/19/17 20:06

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Eastern Analytical, Inc.
Project:
Sample Matrix: Water

Service Request: K1705369
Date Analyzed: 06/09/17 18:04
Date Extracted: 05/30/17

Lab Control Sample Summary
Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

Sample Name: Lab Control Sample **Instrument ID:** K-LCMS-06
Lab Code: KQ1706747-03 **File ID:** J:\LCMS06\Data\060917_2_b1\060917_321.D\
Analysis Method: PFC/537M **Analysis Lot:** 549216
Prep Method: EPA 3535A **Extraction Lot:** 289099

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Method Blank	KQ1706747-04	J:\LCMS06\Data\060917_2_b1\060917_320.D\	06/09/17 17:54
Batch QC	K1705261-002	J:\LCMS06\Data\060917_2_b1\060917_323.D\	06/09/17 18:25
Batch QC	KQ1706747-01	J:\LCMS06\Data\060917_2_b1\060917_324.D\	06/09/17 18:36
Batch QC	KQ1706747-02	J:\LCMS06\Data\060917_2_b1\060917_325.D\	06/09/17 18:46
MW-4A	K1705369-002	J:\LCMS06\Data\060917_2_b1\060917_334.D\	06/09/17 20:20
MW-7B	K1705369-004	J:\LCMS06\Data\060917_2_b1\060917_335.D\	06/09/17 20:31
MW-10	K1705369-005	J:\LCMS06\Data\060917_2_b1\060917_336.D\	06/09/17 20:41

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Eastern Analytical, Inc.
Project:
Sample Matrix: Water

Service Request: K1705369
Date Analyzed: 06/19/17 19:06
Date Extracted: 06/06/17

Lab Control Sample Summary
Perfluorinated Sulfonic Acids and Perfluorinated Carboxylic Acids by HPLC/MS

Sample Name: Lab Control Sample **Instrument ID:** K-LCMS-06
Lab Code: KQ1707239-01 **File ID:** J:\LCMS06\Data\061917_b1\061917_109
Analysis Method: PFC/537M **Analysis Lot:** 550284
Prep Method: EPA 3535A **Extraction Lot:** 289719

This Lab Control Sample applies to the following analyses.

Sample Name	Lab Code	File ID	Date Analyzed
Duplicate Lab Control Sample	KQ1707239-02	J:\LCMS06\Data\061917_b1\061917_110	06/19/17 19:06
Method Blank	KQ1707239-03	J:\LCMS06\Data\061917_b1\061917_108	06/19/17 19:06
MW-1A	K1705369-001	J:\LCMS06\Data\061917_b1\061917_111	06/19/17 19:06
MW-6A	K1705369-003	J:\LCMS06\Data\061917_b1\061917_112	06/19/17 20:06

CHAIN-OF-CUSTODY RECORD

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SampleID	Date/Time	aMatrix	Parameters	Sample Notes	# of containers
MMV-1 A	05/24/2017 14:58	GW	Field Specific Conductance, Field pH, Chloride, Nitrate, TKN, Dissolved Iron, Manganese, SWL, PFC's		5
preservative: HCL HNO ₃ H ₂ SO ₄ NaOH MEOH Na ₂ S ₂ O ₃ ICE					
MMV-4 A	05/24/2017 14:46	GW	Field Specific Conductance, Field pH, Chloride, Nitrate, TKN, Dissolved Iron, Manganese, SWL, PFC's		5
preservative: HCL HNO ₃ H ₂ SO ₄ NaOH MEOH Na ₂ S ₂ O ₃ ICE					
MMV-6 A	05/24/2017 14:26	GW	Field Specific Conductance, Field pH, Chloride, Nitrate, TKN, Dissolved Iron, Manganese, SWL, PFC's		5
preservative: HCL HNO ₃ H ₂ SO ₄ NaOH MEOH Na ₂ S ₂ O ₃ ICE					
MMV-7 B	05/24/2017 14:09	GW	Field Specific Conductance, Field pH, Chloride, Nitrate, TKN, Dissolved Iron, Manganese, SWL, PFC's		5
preservative: HCL HNO ₃ H ₂ SO ₄ NaOH MEOH Na ₂ S ₂ O ₃ ICE					
MMV-10	05/24/2017 13:52	GW	Field Specific Conductance, Field pH, Chloride, Nitrate, TKN, Dissolved Iron, Manganese, SWL, PFC's		5
preservative: HCL HNO ₃ H ₂ SO ₄ NaOH MEOH Na ₂ S ₂ O ₃ ICE					
MMV-2 A	—	GW	PFC's 537	could not locate	0
preservative: HCL HNO ₃ H ₂ SO ₄ NaOH MEOH Na ₂ S ₂ O ₃ ICE					

Results Needed by: Preferred date _____
 Notes about project _____
 Dissolved metals field filtered, preserved with Nitric Acid.
 Invoice town directly
 PFC's by EPA 537 (9 compound list)

Reporting Options
 HC NO FAX EDD Disk
 Fax No partial FAX EDD email
 Samples Collected by: ST (EPA) PO# _____
 Relinquished by: [Signature] Date/Time: 05/24/2017 16:15 Temperature: 31 °C
 Relinquished by: _____ Date/Time: _____ Received by: [Signature]

CHAIN-OF-CUSTODY RECORD

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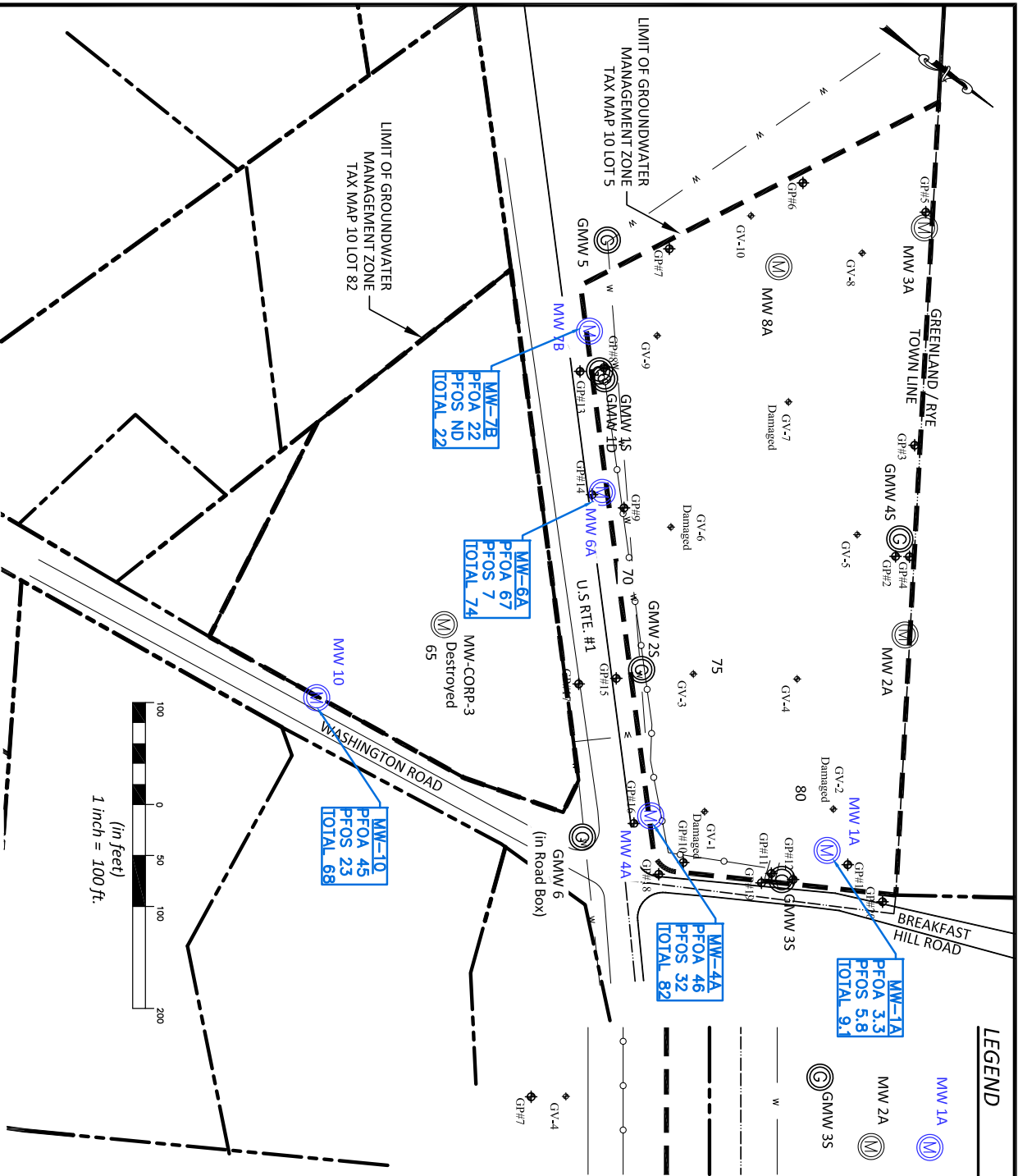
5

aSampleID	Date/Time	aMatrix	Parameters	Sample Notes	# of containers
MW-3 A	—	GW	PFC's 537	could not locate	0
preservative: HCL, HNO ₃ , H ₂ SO ₄ , NaOH, MEOH, Na ₂ S ₂ O ₃ , ICE					
MW-4S	—	GW	PFC's 537	could not locate	0
preservative: HCL, HNO ₃ , H ₂ SO ₄ , NaOH, MEOH, Na ₂ S ₂ O ₃ , ICE					

aClientID Rye - Breakfast Hill LF
 nProjectID 104 nYearMonth 2017.05
 Client (Pro Mgr) Paul Schmidt
 Customer CMA Engineers, Inc. (Manchester)
 Address Langer Place, 55 South Commercial
 City Manchester NH 03101
 Phone 603-627-0708
 Fax

Results Needed by: Preferred date _____
 Notes about project
 Dissolved metals field filtered, preserved with Nitric Acid.
 Invoice town directly
 PFC's by EPA 537 (9 compound list)

Reporting Options
 HC NO FAX EDD Disk
 Fax No partial FAX EDD email
 Samples Collected by: JL (EAD) PO# _____
 Relinquished by: [Signature] Date/Time 05/24/2017 16:15 Temperature 21 °C
 Relinquished by: [Signature] Date/Time Received by: [Signature]



E:\CADD\PROJECTS\327\dwg\Break-hill\dwg\Groundwater_BH_Site Plan.dwg Date Plotted: Jul 06, 2017 - 11:20am Plotted By: JSTRICKLAND

LEGEND

- MW 1A
- MW 2A
- GMW 35
- Approximate Location of Existing Groundwater Monitoring Well
- Approximate Location of Groundwater Monitoring Well (NOT in Monitoring Program)
- Approximate Location of Existing Gas Monitoring Well
- Approximate Location of Existing Water Main
- Approximate Town of Rye Border
- Approximate Property Line
- Approximate Breakfast Hill Landfill Groundwater Management Zone
- Fence Line
- Edge of Pavement
- Existing Gas Vent
- Soil Probe Location

MAY 2017 PFC Data

*Site Plan Based on Jacques Whitford Company, Inc. Groundwater Contour Map dated 10/31/00.

<p>CMA ENGINEERS CIVIL/ENVIRONMENTAL ENGINEERS 35 Bow Street Portsmouth, New Hampshire 03801-3819 Phone: 603/431-6196 Fax: 603/431-5376 E-mail: info@cmaengineers.com</p>	<p>Lafayette Center Storer Street Building, Suite 208 Kennebunk, Maine 04043 Phone: 207/985-8717 Fax: 207/985-5920</p>
<p>Town of Rye, NH Breakfast Hill Landfill Site Plan Scale: 1" = 100'</p>	