RAMBOLL

ENVIRONMENT
& HEALTH

February 10, 2022

via Email

Susan L. Edwards, P.E.
Director, Bureau D
NYSDEC, Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, NY 12233-7013

RE: Summary of Emerging Contaminants Sampling
Saint-Gobain Performance Plastics Corporation
11 Sicho Road, Poestenkill, NY

Dear Ms. Edwards:

As requested by the New York State Department of Environmental Conservation (NYSDEC) in its August 10, 2021 letter, Ramboll US Consulting Inc. (Ramboll), on behalf of Saint-Gobain Performance Plastics Corporation (Saint-Gobain), submitted a Sampling and Analysis Plan (SAP) on December 16, 2021 to NYSDEC for the collection of groundwater samples for 1,4-dioxane and per- and polyfluoroalkyl substances (PFAS) analyses at the Saint-Gobain facility located at 11 Sicho Road in Poestenkill, New York (the Plant). The SAP was approved by NYSDEC on December 20, 2021. A summary of the groundwater sampling program is provided below.

Ramboll performed the sample collection on January 6, 2022. Groundwater samples were collected from Well #1, Well #3, Well #4, and Well #5 for 1,4-dioxane and PFAS analyses (see **Figure 1** for the locations of monitoring wells at the Plant). Sampling of Well #2 was attempted but the well had a hard obstruction and a damaged well casing and therefore was unable to be sampled. Field quality control (QC) samples were collected for 1,4-dioxane analysis and consisted of one blind duplicate sample and one equipment blank. Field QC samples were also collected for PFAS analysis and consisted of one blind duplicate sample, one equipment blank, and one field reagent blank (FRB).

In accordance with the SAP, the monitoring wells were purged using conventional methods (i.e., purging three well volumes prior to sampling). Groundwater field parameter data (temperature, pH, specific conductivity, oxidation-reduction potential, dissolved oxygen, and turbidity) were collected after each well volume and documented on field forms prior to sample collection. Well #4 was observed to be dry after one well volume was purged; a groundwater sample was collected from this well immediately after the well had adequately recharged. The completed field forms are included as **Appendix A**.

Eurofins Lancaster Labs Environment Testing, LLC (ELLE) in Lancaster, Pennsylvania performed the 1,4-dioxane and PFAS analyses. The 1,4-dioxane analysis was performed using United States Environmental Protection Agency (USEPA) Method 8270 Selective Ion Monitoring (SIM) with a reporting limit equal to or below 0.31 parts per billion (ppb). The PFAS analyses were performed using USEPA Method 537, modified, and achieved a reporting limit of 2 parts per trillion (ppt) or less for perfluorooctanesulfonic acid (PFOS), perfluorooctanoic acid (PFOA) and several (but not all) of the other PFAS analytes. The complete analytical package is included in **Appendix B** and the Data Usability Summary Report (DUSR) is included in **Appendix C**.

As shown on **Table 1**, no 1,4-dioxane was detected in the monitoring wells. Also shown on **Table 1**, PFAS were detected in each of the sampled monitoring wells. PFOS was detected at concentrations ranging from 4.2 ppt in Well 3 to 5.0 ppt in Well 5. PFOA was detected at concentrations ranging from 0.47 ppt (estimated) in Well 4 to 3.7 ppt in Well 5. Although not applicable to groundwater monitoring wells, these detections are considerably below the state's drinking water standard of 10 ppt for PFOS and 10 ppt for PFOA. They are also considerably below the groundwater screening levels included in

NYSDEC's June 2021 guidance document for emerging contaminants (which are also 10 ppt for PFOS and 10 ppt for PFOA).

The source(s) of the low concentrations of PFAS detected is not known, but the data do not indicate the presence of a source at the Plant. The four sampled monitoring wells are located in different directions from the building, Well #1 close to the building in the parking lot in the northwest corner, Well #3 and Well #4 close to the building on the east side, and Well #5 in the wooded area to the east of the building. Low concentrations of PFOS were reported in all four monitoring wells, with the highest concentration (5.0 ppt) reported in Well #5 located farthest from the building in a direction inconsistent with the expected groundwater flow. Low concentrations of PFOA were reported in three of the four monitoring wells, with the highest concentration (3.7 ppt) also in Well #5. Perfluorobutanesulfonic acid (PFBS) was also reported at low concentrations in the same three monitoring wells, with the highest concentration (an estimated 1.1 ppt) also in Well #5.

Observed PFAS concentrations may be due to anthropogenic background conditions and/or from sources not associated with the Plant. Because the PFAS concentrations are low (including PFOS and PFOA concentrations well below the 10 ppt drinking water standards and 10 ppt groundwater screening levels), perfluoroalkyl sulfonic acids (PFSAs, including PFOS and PFBS) are dominant over the perfluoroalkyl carboxylic acids (PFCAs, including PFOA), and there are other potential sources in the same area as the Plant (such as a small regional airport and a fire hall), we do not believe that further action is needed at the Plant .

We are aware of the on-going evaluation of the PFAS-impacted supply well(s) at the Algonquin Middle School. However, the school is located more than two miles from the Plant, and considerably higher PFAS concentrations have been documented at the school (including above the 10 ppt drinking water standard for PFOA). It is clear that the Plant is a not a source of the PFAS detected in the groundwater samples collected at the school based on the significant geographic separation and the higher PFAS concentrations in the supply well(s) for the school than at the Plant.

Should you have any questions, please contact Paul D'Annibale at 518-847-9838.

Sincerely,
Ramboll US Consulting, Inc.

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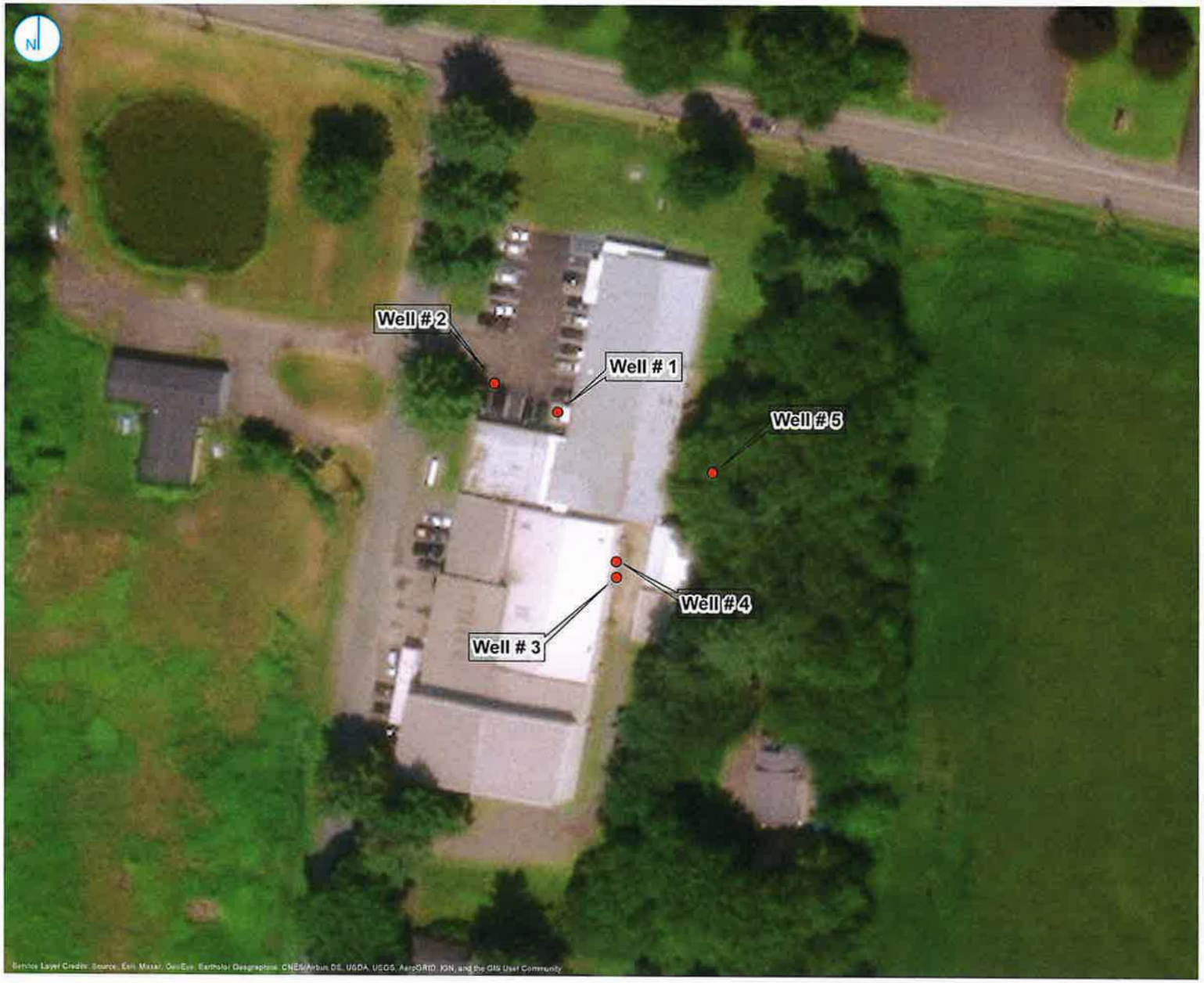
cc: Thomas Davis, Saint-Gobain
Scott Campbell, Saint-Gobain
Chris Angier, Saint-Gobain
Eric Wood, Ramboll
Jason Wilkinson, Ramboll



Wells

0

WELL LOCATIONS

Saint Gobain
Poestenkill, NY

FIGURE 01

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS INC.
A RAMBOLL COMPANY

RAMBOLL

PROJECT 1680002XX.Y | DATED 12/10/2021 | DESIGNER PURPLURCA
I:\Saint Gob Abr 11486\GIS\MXD\SAINT_GOBAIN3.mxd

Table 1

1,4-Dioxane and Per- and Polyfluoroalkyl Substances Results

Location ID / Sample ID / Analyte	Well #1 Well-1-010622	Well #3 Well-3-010622	Well #3 X-1-010622 (DUPLICATE)	Well #4 Well-4-010622	Well #5 Well-5-010622
1,4-dioxane	<0.31	<0.30	<0.29	<0.30	<0.31
Perfluorobutanoic Acid	<4.7	<4.7	<4.7	<4.7	<4.7
Perfluoropentanoic Acid	<1.9	<1.9	<1.9	<1.9	<1.9
Perfluorohexanoic Acid	<1.9	<1.9	<1.9	<1.9	0.49 J
Perfluoroheptanoic Acid	<1.9	<1.9	<1.9	<1.9	0.70 J
Perfluorooctanoic Acid (PFOA)	2.5	2.7	2.9	0.47 J	3.7
Perfluorononanoic Acid	<1.9	<1.9	<1.9	<1.9	<1.9
Perfluorodecanoic Acid	<1.9	<1.9	<1.9	<1.9	<1.9
Perfluoroundecanoic Acid	<1.9	<1.9	<1.9	<1.9	<1.9
Perfluorododecanoic Acid	<1.9	<1.9	<1.9	<1.9	<1.9
Perfluorotridecanoic Acid	<1.9	<1.9	<1.9	<1.9	<1.9
Perfluorotetradecanoic Acid	<1.9	<1.9	<1.9	<1.9	<1.9
Perfluorobutanesulfonic Acid	0.94 J	1.1 J	1.0 J	<1.9	1.1 J
Perfluorohexanesulfonic Acid	<1.9	<1.9	<1.9	<1.9	<1.9
Perfluoroheptanesulfonic Acid	<1.9	<1.9	<1.9	<1.9	<1.9
Perfluorooctanesulfonic Acid (PFOS)	4.5	4.2	4.4	<1.9	5.0
Perfluorodecanesulfonic Acid	<1.9	<1.9	<1.9	<1.9	<1.9
Perfluorooctanesulfonamide	<1.9	<1.9	<1.9	2.7	<1.9
NMeFOSAA	<1.9	<1.9	<1.9	<1.9	<1.9
NEtFOSAA	<2.8	<2.8	<2.8	<2.8	<2.8
6:2 Fts	<4.7	<4.7	<4.7	<4.7	<4.7
8:2 Fts	<2.8	<2.8	<2.8	<2.8	<2.8

Notes:

1."<" designates not detected at the laboratory reporting limit shown.

2. Per- and polyfluoroalkyl substances (PFAS) results in nanograms per liter (ng/L).

3. "J" indicates analyte was detected at an estimated concentration.

APPENDIX A
COMPLETED FIELD FORMS

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GROUNDWATER SAMPLING FIELD LOG

Date	1/6/22	Personnel	SETHNGP	Weather	±25F, SNOW
Site Name	Saint-Gobain	Evacuation Method	Peristaltic Pump	Well #	Well-1
Site Location	Poskinkill, NY	Sampling Method	Peristaltic Pump	Project #	1940108269

Well information:

Depth of Well *	12.43	ft.
Depth to Water *	3.42	ft.
Length of Water Column	9.01	ft.

* Measurements taken from

x	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

1" diameter wells = 0.041 x (LWC) =	—	gallons
2" diameter wells = 0.163 x (LWC) =	1.46	gallons
4" diameter wells = 0.653 x (LWC) =	--	gallons

Well evacuation data:

	Well Volumes						
	1	2	3				
Start Time	1245	1255	1315				
End Time	1255	1315	1328				
Gallons Purged	1.46	1.46	1.46				
Temp (C)	8.2	8.3	9.0				
pH	5.97	6.11	6.19				
Spec. Conduc. (mS/cm)	0.261	0.261	0.255				
ORP (mV)	205.7	194.9	191.9				
DO (mg/L)	6.97	5.17	5.44				
Turbidity (NTU)	3.27	2.56	1.55				
DTW (Ft BMP)	3.41	3.41	3.42				

PFAS-Free WLM (FA04364)

Probe type: YSI Pro Plus Quattro (FA01764) Lamotte turbidity (FA01464)

Appearance at start: light brown, no odor, no sheen

Appearance at end: Clear, no odor, no sheen

Other Observations:

Amount of water removed: 4.38 gallons

Depth to water before sampling: 3.42 ft. (below top of inner casing)

Parameters Sampled For: PFAS (21 Compounds) by Modified USEPA Method 537 and 1,4-Dioxane via USEPA Method 8270 SIM

Sample Time: 1330

NOTES:

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GROUNDWATER SAMPLING FIELD LOG

Date	1/6/22	Personnel	SET/WGP	Weather	~25°F, Snow
Site Name	Saint-Gobain	Evacuation Method	Peristaltic Pump	Well #	Well-2
Site Location	Postenkill, NY	Sampling Method	Peristaltic Pump	Project #	1640101829

Well information:

Depth of Well *	2.82	ft.
Depth to Water *	2.47	ft.
Length of Water Column	—	ft.

* Measurements taken from

x	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

1" diameter wells = 0.041 x (LWC) =	—	gallons
2" diameter wells = 0.163 x (LWC) =	--	gallons
4" diameter wells = 0.653 x (LWC) =	--	gallons

Well evacuation data:

	Well Volumes						
	1	2	3				
Start Time							
End Time							
Gallons Purged							
Temp (C)							
pH		31 1/6/22					
Spec. Conduc. (mS/cm)							
ORP (mV)							
DO (mg/L)							
Turbidity (NTU)							

Probe type: PFAS-free WQM (FA04363)

Appearance at start: —

Appearance at end: —

Other Observations: See notes

Amount of water removed: — gallons

Depth to water before sampling: — ft. (below top of inner casing)

Parameters Sampled For: PFAS (21 Compounds) by Modified USEPA Method 537 and 1,4-Dioxane via USEPA Method 8270 SIM

Sample Time: —

NOTES: well is obstructed at 2.82' bmp. will not be able to purge or collect sample.

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GROUNDWATER SAMPLING FIELD LOG

Date	1/6/22	Personnel	SET + WGP	Weather	12SF SNOW
Site Name	Saint-Gobain	Evacuation Method	Peristaltic Pump	Well #	Well-3
Site Location	Poskill, NY	Sampling Method	Peristaltic Pump	Project #	1990101525

Well information:

Depth of Well *	8.03	ft.	* Measurements taken from
Depth to Water *	3.84	ft.	x Top of Well Casing
Length of Water Column	4.19	ft.	Top of Protective Casing
			(Other, Specify)

1" diameter wells = 0.041 x (LWC) =	--	gallons
2" diameter wells = 0.163 x (LWC) =	0.68	gallons 2500mL
4" diameter wells = 0.653 x (LWC) =	--	gallons

Well evacuation data:

	Well Volumes						
	1	2	3				
Start Time	0945	0951	0956				
End Time	0950	0955	1000				
Gallons Purged	0.68	0.68	0.68				
Temp (C)	7.1	6.9	6.7				
pH	6.23	6.24	6.22				
Spec. Conduc. (mS/cm)	0.258	0.250	0.251				
ORP (mV)	236.5	219.0	212.0				
DO (mg/L)	6.39	6.04	6.19				
Turbidity (NTU)	3.45	2.21	1.03				
DTW (FTBMP)	3.88	3.88	3.89				

PFAS-free wash (FA043164)

Probe type: YSI ProPlus/Quattro (FA02114), Lamotte Turbidity (FA01573)

Appearance at start: Light brown/orange, no odor, no sheen

Appearance at end: Clear, no odor, no sheen

Other Observations:

Amount of water removed: 2.04 gallons

Depth to water before sampling: 3.89 ft. (below top of inner casing)

Parameters Sampled For: PFAS (21 Compounds) by Modified USEPA Method 537 and 1,4-Dioxane via USEPA Method 8270 SIM

Sample Time: 1010

NOTES: Sample ID = Well-3-010622

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GROUNDWATER SAMPLING FIELD LOG

Date	1/6/22	Personnel	SET+WGP	Weather	±25F SNOW
Site Name	Saint-Gobain	Evacuation Method	Peristaltic Pump	Well #	Well-4
Site Location	Poseakill, NY	Sampling Method	Peristaltic Pump	Project #	1940.01 529

Well information:

Depth of Well *	21.16	ft.
Depth to Water *	3.75	ft.
Length of Water Column	17.41	ft.

* Measurements taken from

x	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

1" diameter wells = 0.041 x (LWC) =	2.84	gallons
2" diameter wells = 0.163 x (LWC) =	--	gallons
4" diameter wells = 0.653 x (LWC) =	--	gallons

Well evacuation data:

	Well Volumes						
	1	2	3				
Start Time	1032						
End Time	1120						
Gallons Purged	2.84						
Temp (C)	6.6						
pH	7.28						
Spec. Conduc. (mS/cm)	0.338						
ORP (mV)	143.0						
DO (mg/L)	4.27						
Turbidity (NTU)	10.90						

DTW (Ft BMP) 16.79

PFAS-free WLM (FA01364)

Probe type: YSI Pro Plus Quatro (FA02114) LaMotte Turbidity (FA01578)

Appearance at start: very light brown, no odor, no sheen

Appearance at end: clear, no odor, no sheen

Other Observations:

Amount of water removed: 2.84 gallons

Depth to water before sampling: 14.55 ft. (below top of inner casing)

Parameters Sampled For: PFAS (21 Compounds) by Modified USEPA Method 537 and 1,4-Dioxane via USEPA Method 8270 SIM

Sample Time: 1400

NOTES: Well is effectively dry after removing 1 well volume. Allow to recharge prior to sampling

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GROUNDWATER SAMPLING FIELD LOG

Date	1/6/22	Personnel	WCF / SET	Weather	Overcast 32°F
Site Name	St. Gabriel's	Evacuation Method	Peristaltic Pump	Well #	Well-5
Site Location	Preston Hill, MN	Sampling Method	Peristaltic Pump	Project #	1940101529

Well information:

Depth of Well *	10.94	ft.
Depth to Water *	3.31	ft.
Length of Water Column	7.63	ft.

* Measurements taken from

x	Top of Well Casing
	Top of Protective Casing
	(Other, Specify)

1" diameter wells = 0.041 x (LWC) =		gallons
2" diameter wells = 0.163 x (LWC) =	1.24	gallons
4" diameter wells = 0.653 x (LWC) =	--	gallons

Well evacuation data:

	Well Volumes						
	1	2	3				
Start Time	1109	1132	1152				
End Time	1132	1152	1213				
Gallons Purged	1.25	1.25	1.25				
Temp (C)	8.0	8.5	5.1				
pH	5.98	6.03	6.10				
Spec. Conduc. (mS/cm)	0.275	0.268	0.267				
ORP (mV)	224.1	215.5	207.6				
DO (mg/L)	3.76	5.54	5.47				
Turbidity (NTU)	1.44	0.98	0.26				
DTW (Ft BTOP)	3.31	3.33	3.34				

Probe type: Heron PFAS Free 100 (FA043663), YSI Pro Plus, LaMotte Turbidity (FA0 1764) (FA0 1764) (FA0 1764)

Appearance at start: cloudy, light brown

Appearance at end: clear, colorless

Other Observations: no odor / sheen

Amount of water removed: 3.75 gallons

Depth to water before sampling: 3.31 ft. (below top of inner casing)

Parameters Sampled For: PFAS (21 Compounds) by Modified USEPA Method 537 and 1,4-Dioxane via USEPA Method 8270 SIM

Sample Time: 1220

NOTES:

APPENDIX B
COMPLETE ANALYTICAL DATA PACKAGE

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-69080-1
Client Project/Site: Emerging Contaminants Sampling

For:
Ramboll US Corporation
94 New Karner Rd
Suite 106
Albany, New York 12203

Attn: Paul D'Annibale

Authorized for release by:
1/21/2022 6:42:55 PM

Megan Moeller, Client Services Manager
(717)556-7261
Megan.Moeller@eurofinset.com

LINKS

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Have a Question? Ask The Expert

Visit us at:
www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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

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

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.
· QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
· Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
· Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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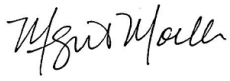
WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.



Megan Moeller
Client Services Manager
1/21/2022 6:42:55 PM

Table of Contents

Cover Page 1
Table of Contents 3
Definitions/Glossary 4
Case Narrative 5
Detection Summary 6
Client Sample Results 7
Surrogate Summary 14
Isotope Dilution Summary 15
QC Sample Results 17
QC Association Summary 21
Lab Chronicle 23
Certification Summary 25
Method Summary 26
Sample Summary 27
Chain of Custody 28
Receipt Checklists 29

Definitions/Glossary

Client: Ramboll US Corporation
Job ID: 410-69080-1
Project/Site: Emerging Contaminants Sampling

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
cn	Refer to Case Narrative for further detail

LCMS

Qualifier	Qualifier Description
*5+	Isotope dilution analyte is outside acceptance limits, high biased.
cn	Refer to Case Narrative for further detail
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 410-69080-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative
410-69080-1

Receipt
The samples were received on 1/7/2022 12:37 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.1°C and 3.0°C

GC/MS Semi VOA
Method 8270E_SIM: The continuing calibration verification (CCV) associated with batch 410-216205 recovered above the upper control limit for 1,4-Dioxane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8270E_SIM: The continuing calibration verification (CCV) associated with batch 410-216613 recovered above the upper control limit for 1,4-Dioxane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

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

PFAS
Method PFC_IDA: The recovery for the labeled isotope(s) in the following samples: Well-5-010622 (410-69080-4), X-1-010622 (410-69080-5), FRB-1-010622 (410-69080-6) and EB-1-010622 (410-69080-7) is outside the QC acceptance limits. Since the recovery is high and the native analyte is not detected in the sample, the data is reported.

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

Detection Summary

Client: Ramboll US Corporation
Job ID: 410-69080-1
Project/Site: Emerging Contaminants Sampling

Client Sample ID: Well-1-010622 — Lab Sample ID: 410-69080-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid	2.5		1.9	0.47	ng/L	1		537 IDA	Total/NA
Perfluorobutanesulfonic acid	0.94	J	1.9	0.47	ng/L	1		537 IDA	Total/NA
Perfluorooctanesulfonic acid	4.5		1.9	0.47	ng/L	1		537 IDA	Total/NA

Client Sample ID: Well-3-010622 — Lab Sample ID: 410-69080-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid	2.7		1.8	0.45	ng/L	1		537 IDA	Total/NA
Perfluorobutanesulfonic acid	1.1	J	1.8	0.45	ng/L	1		537 IDA	Total/NA
Perfluorooctanesulfonic acid	4.2		1.8	0.45	ng/L	1		537 IDA	Total/NA

Client Sample ID: Well-4-010622 — Lab Sample ID: 410-69080-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid	0.47	J	1.9	0.47	ng/L	1		537 IDA	Total/NA
Perfluorooctanesulfonamide	2.7		1.9	0.47	ng/L	1		537 IDA	Total/NA

Client Sample ID: Well-5-010622 — Lab Sample ID: 410-69080-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid	0.49	J cn	1.9	0.47	ng/L	1		537 IDA	Total/NA
Perfluoroheptanoic acid	0.70	J cn	1.9	0.47	ng/L	1		537 IDA	Total/NA
Perfluorooctanoic acid	3.7	cn	1.9	0.47	ng/L	1		537 IDA	Total/NA
Perfluorobutanesulfonic acid	1.1	J cn	1.9	0.47	ng/L	1		537 IDA	Total/NA
Perfluorooctanesulfonic acid	5.0	cn	1.9	0.47	ng/L	1		537 IDA	Total/NA

Client Sample ID: X-1-010622 — Lab Sample ID: 410-69080-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid	2.9	cn	1.8	0.45	ng/L	1		537 IDA	Total/NA
Perfluorobutanesulfonic acid	1.0	J cn	1.8	0.45	ng/L	1		537 IDA	Total/NA
Perfluorooctanesulfonic acid	4.4	cn	1.8	0.45	ng/L	1		537 IDA	Total/NA

Client Sample ID: FRB-1-010622 — Lab Sample ID: 410-69080-6

No Detections.

Client Sample ID: EB-1-010622 — Lab Sample ID: 410-69080-7

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Ramboll US Corporation
Job ID: 410-69080-1
Project/Site: Emerging Contaminants Sampling

Client Sample ID: Well-1-010622
Lab Sample ID: 410-69080-1
Date Collected: 01/06/22 13:30
Matrix: Groundwater
Date Received: 01/07/22 12:37

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND	cn	0.31	0.10	ug/L		01/11/22 19:00	01/20/22 13:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*82*	*cn*	*10 - 110*	*01/11/22 19:00*	*01/20/22 13:53*	*1*
Fluoranthene-d10 (Surr)	*102*	*cn*	*47 - 128*	*01/11/22 19:00*	*01/20/22 13:53*	*1*
1-Methylnaphthalene-d10 (Surr)	*87*	*cn*	*36 - 111*	*01/11/22 19:00*	*01/20/22 13:53*	*1*

Method: 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid	ND		1.9	0.47	ng/L		01/13/22 17:17	01/17/22 23:48	1
Perfluoroheptanoic acid	ND		1.9	0.47	ng/L		01/13/22 17:17	01/17/22 23:48	1
Perfluorooctanoic acid	**2.5**		1.9	0.47	ng/L		01/13/22 17:17	01/17/22 23:48	1
Perfluorononanoic acid	ND		1.9	0.47	ng/L		01/13/22 17:17	01/17/22 23:48	1
Perfluorodecanoic acid	ND		1.9	0.47	ng/L		01/13/22 17:17	01/17/22 23:48	1
Perfluorotridecanoic acid	ND		1.9	0.47	ng/L		01/13/22 17:17	01/17/22 23:48	1
Perfluorotetradecanoic acid	ND		1.9	0.47	ng/L		01/13/22 17:17	01/17/22 23:48	1
Perfluorobutanesulfonic acid	**0.94**	**J**	1.9	0.47	ng/L		01/13/22 17:17	01/17/22 23:48	1
Perfluorohexanesulfonic acid	ND		1.9	0.47	ng/L		01/13/22 17:17	01/17/22 23:48	1
Perfluorooctanesulfonic acid	**4.5**		1.9	0.47	ng/L		01/13/22 17:17	01/17/22 23:48	1
NEtFOSAA	ND		2.8	0.47	ng/L		01/13/22 17:17	01/17/22 23:48	1
NMeFOSAA	ND		1.9	0.56	ng/L		01/13/22 17:17	01/17/22 23:48	1
Perfluoroheptanesulfonic acid	ND		1.9	0.47	ng/L		01/13/22 17:17	01/17/22 23:48	1
Perfluorodecanesulfonic acid	ND		1.9	0.47	ng/L		01/13/22 17:17	01/17/22 23:48	1
Perfluorooctanesulfonamide	ND		1.9	0.47	ng/L		01/13/22 17:17	01/17/22 23:48	1
Perfluorobutanoic acid	ND		4.7	1.9	ng/L		01/13/22 17:17	01/17/22 23:48	1
Perfluoroundecanoic acid	ND		1.9	0.47	ng/L		01/13/22 17:17	01/17/22 23:48	1
Perfluorododecanoic acid	ND		1.9	0.47	ng/L		01/13/22 17:17	01/17/22 23:48	1
6:2 Fluorotelomer sulfonic acid	ND		4.7	1.9	ng/L		01/13/22 17:17	01/17/22 23:48	1
8:2 Fluorotelomer sulfonic acid	ND		2.8	0.94	ng/L		01/13/22 17:17	01/17/22 23:48	1
Perfluoropentanoic acid	ND		1.9	0.47	ng/L		01/13/22 17:17	01/17/22 23:48	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-8:2 FTS	*93*		*34 - 182*	*01/13/22 17:17*	*01/17/22 23:48*	*1*
M2-6:2 FTS	*93*		*29 - 189*	*01/13/22 17:17*	*01/17/22 23:48*	*1*
13C5 PFHxA	*96*		*31 - 142*	*01/13/22 17:17*	*01/17/22 23:48*	*1*
13C4 PFHpA	*107*		*30 - 144*	*01/13/22 17:17*	*01/17/22 23:48*	*1*
13C8 PFOA	*103*		*49 - 127*	*01/13/22 17:17*	*01/17/22 23:48*	*1*
13C9 PFNA	*130*		*47 - 136*	*01/13/22 17:17*	*01/17/22 23:48*	*1*
13C6 PFDA	*97*		*47 - 128*	*01/13/22 17:17*	*01/17/22 23:48*	*1*
13C7 PFUnA	*94*		*40 - 135*	*01/13/22 17:17*	*01/17/22 23:48*	*1*
13C2-PFDoDA	*91*		*28 - 136*	*01/13/22 17:17*	*01/17/22 23:48*	*1*
13C2 PFTeDA	*81*		*10 - 144*	*01/13/22 17:17*	*01/17/22 23:48*	*1*
13C3 PFBS	*139*		*19 - 178*	*01/13/22 17:17*	*01/17/22 23:48*	*1*
13C3 PFHxS	*125*		*32 - 145*	*01/13/22 17:17*	*01/17/22 23:48*	*1*
13C8 PFOS	*120*		*49 - 126*	*01/13/22 17:17*	*01/17/22 23:48*	*1*
d3-NMeFOSAA	*87*		*32 - 151*	*01/13/22 17:17*	*01/17/22 23:48*	*1*
d5-NEtFOSAA	*101*		*37 - 164*	*01/13/22 17:17*	*01/17/22 23:48*	*1*
13C8 FOSA	*78*		*10 - 143*	*01/13/22 17:17*	*01/17/22 23:48*	*1*
13C4 PFBA	*116*		*41 - 132*	*01/13/22 17:17*	*01/17/22 23:48*	*1*
13C5 PFPeA	*132*		*33 - 155*	*01/13/22 17:17*	*01/17/22 23:48*	*1*

Client: Ramboll US Corporation
Job ID: 410-69080-1
Project/Site: Emerging Contaminants Sampling

Client Sample ID: Well-3-010622
Lab Sample ID: 410-69080-2
Date Collected: 01/06/22 10:10
Matrix: Groundwater
Date Received: 01/07/22 12:37

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND	cn	0.30	0.10	ug/L		01/11/22 19:00	01/20/22 14:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*78*	*cn*	*10 - 110*	*01/11/22 19:00*	*01/20/22 14:22*	*1*
Fluoranthene-d10 (Surr)	*105*	*cn*	*47 - 128*	*01/11/22 19:00*	*01/20/22 14:22*	*1*
1-Methylnaphthalene-d10 (Surr)	*88*	*cn*	*36 - 111*	*01/11/22 19:00*	*01/20/22 14:22*	*1*

Method: 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid	ND		1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:06	1
Perfluoroheptanoic acid	ND		1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:06	1
Perfluorooctanoic acid	**2.7**		1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:06	1
Perfluorononanoic acid	ND		1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:06	1
Perfluorodecanoic acid	ND		1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:06	1
Perfluorotridecanoic acid	ND		1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:06	1
Perfluorotetradecanoic acid	ND		1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:06	1
Perfluorobutanesulfonic acid	**1.1**	**J**	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:06	1
Perfluorohexanesulfonic acid	ND		1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:06	1
Perfluorooctanesulfonic acid	**4.2**		1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:06	1
NEtFOSAA	ND		2.7	0.45	ng/L		01/13/22 17:17	01/15/22 02:06	1
NMeFOSAA	ND		1.8	0.54	ng/L		01/13/22 17:17	01/15/22 02:06	1
Perfluoroheptanesulfonic acid	ND		1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:06	1
Perfluorodecanesulfonic acid	ND		1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:06	1
Perfluorooctanesulfonamide	ND		1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:06	1
Perfluorobutanoic acid	ND		4.5	1.8	ng/L		01/13/22 17:17	01/15/22 02:06	1
Perfluoroundecanoic acid	ND		1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:06	1
Perfluorododecanoic acid	ND		1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:06	1
6:2 Fluorotelomer sulfonic acid	ND		4.5	1.8	ng/L		01/13/22 17:17	01/15/22 02:06	1
8:2 Fluorotelomer sulfonic acid	ND		2.7	0.90	ng/L		01/13/22 17:17	01/15/22 02:06	1
Perfluoropentanoic acid	ND		1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:06	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-8:2 FTS	*140*		*34 - 182*	*01/13/22 17:17*	*01/15/22 02:06*	*1*
M2-6:2 FTS	*127*		*29 - 189*	*01/13/22 17:17*	*01/15/22 02:06*	*1*
13C5 PFHxA	*108*		*31 - 142*	*01/13/22 17:17*	*01/15/22 02:06*	*1*
13C4 PFHpA	*120*		*30 - 144*	*01/13/22 17:17*	*01/15/22 02:06*	*1*
13C8 PFOA	*122*		*49 - 127*	*01/13/22 17:17*	*01/15/22 02:06*	*1*
13C9 PFNA	*124*		*47 - 136*	*01/13/22 17:17*	*01/15/22 02:06*	*1*
13C6 PFDA	*126*		*47 - 128*	*01/13/22 17:17*	*01/15/22 02:06*	*1*
13C7 PFUnA	*123*		*40 - 135*	*01/13/22 17:17*	*01/15/22 02:06*	*1*
13C2-PFDoDA	*121*		*28 - 136*	*01/13/22 17:17*	*01/15/22 02:06*	*1*
13C2 PFTeDA	*103*		*10 - 144*	*01/13/22 17:17*	*01/15/22 02:06*	*1*
13C3 PFBS	*160*		*19 - 178*	*01/13/22 17:17*	*01/15/22 02:06*	*1*
13C3 PFHxS	*132*		*32 - 145*	*01/13/22 17:17*	*01/15/22 02:06*	*1*
13C8 PFOS	*126*		*49 - 126*	*01/13/22 17:17*	*01/15/22 02:06*	*1*
d3-NMeFOSAA	*121*		*32 - 151*	*01/13/22 17:17*	*01/15/22 02:06*	*1*
d5-NEtFOSAA	*129*		*37 - 164*	*01/13/22 17:17*	*01/15/22 02:06*	*1*
13C8 FOSA	*103*		*10 - 143*	*01/13/22 17:17*	*01/15/22 02:06*	*1*
13C4 PFBA	*123*		*41 - 132*	*01/13/22 17:17*	*01/15/22 02:06*	*1*
13C5 PFPeA	*152*		*33 - 155*	*01/13/22 17:17*	*01/15/22 02:06*	*1*

Client Sample ID: Well-4-010622
Lab Sample ID: 410-69080-3

Date Collected: 01/06/22 14:00
Matrix: Groundwater
Date Received: 01/07/22 12:37

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND	cn	0.30	0.10	ug/L		01/11/22 19:00	01/20/22 14:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*38*	*cn*	*10 - 110*	*01/11/22 19:00*	*01/20/22 14:52*	*1*
Fluoranthene-d10 (Surr)	*101*	*cn*	*47 - 128*	*01/11/22 19:00*	*01/20/22 14:52*	*1*
1-Methylnaphthalene-d10 (Surr)	*87*	*cn*	*36 - 111*	*01/11/22 19:00*	*01/20/22 14:52*	*1*

Method: 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid	ND		1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:17	1
Perfluoroheptanoic acid	ND		1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:17	1
Perfluorooctanoic acid	**0.47**	**J**	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:17	1
Perfluorononanoic acid	ND		1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:17	1
Perfluorodecanoic acid	ND		1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:17	1
Perfluorotridecanoic acid	ND		1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:17	1
Perfluorotetradecanoic acid	ND		1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:17	1
Perfluorobutanesulfonic acid	ND		1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:17	1
Perfluorohexanesulfonic acid	ND		1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:17	1
Perfluorooctanesulfonic acid	ND		1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:17	1
NEtFOSAA	ND		2.8	0.47	ng/L		01/13/22 17:17	01/15/22 02:17	1
NMeFOSAA	ND		1.9	0.56	ng/L		01/13/22 17:17	01/15/22 02:17	1
Perfluoroheptanesulfonic acid	ND		1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:17	1
Perfluorodecanesulfonic acid	ND		1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:17	1
Perfluorooctanesulfonamide	**2.7**		1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:17	1
Perfluorobutanoic acid	ND		4.7	1.9	ng/L		01/13/22 17:17	01/15/22 02:17	1
Perfluoroundecanoic acid	ND		1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:17	1
Perfluorododecanoic acid	ND		1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:17	1
6:2 Fluorotelomer sulfonic acid	ND		4.7	1.9	ng/L		01/13/22 17:17	01/15/22 02:17	1
8:2 Fluorotelomer sulfonic acid	ND		2.8	0.93	ng/L		01/13/22 17:17	01/15/22 02:17	1
Perfluoropentanoic acid	ND		1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:17	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-8:2 FTS	*102*		*34 - 182*	*01/13/22 17:17*	*01/15/22 02:17*	*1*
M2-6:2 FTS	*121*		*29 - 189*	*01/13/22 17:17*	*01/15/22 02:17*	*1*
13C5 PFHxA	*94*		*31 - 142*	*01/13/22 17:17*	*01/15/22 02:17*	*1*
13C4 PFHpA	*102*		*30 - 144*	*01/13/22 17:17*	*01/15/22 02:17*	*1*
13C8 PFOA	*103*		*49 - 127*	*01/13/22 17:17*	*01/15/22 02:17*	*1*
13C9 PFNA	*115*		*47 - 136*	*01/13/22 17:17*	*01/15/22 02:17*	*1*
13C6 PFDA	*84*		*47 - 128*	*01/13/22 17:17*	*01/15/22 02:17*	*1*
13C7 PFUnA	*69*		*40 - 135*	*01/13/22 17:17*	*01/15/22 02:17*	*1*
13C2-PFDoDA	*73*		*28 - 136*	*01/13/22 17:17*	*01/15/22 02:17*	*1*
13C2 PFTeDA	*63*		*10 - 144*	*01/13/22 17:17*	*01/15/22 02:17*	*1*
13C3 PFBS	*146*		*19 - 178*	*01/13/22 17:17*	*01/15/22 02:17*	*1*
13C3 PFHxS	*114*		*32 - 145*	*01/13/22 17:17*	*01/15/22 02:17*	*1*
13C8 PFOS	*84*		*49 - 126*	*01/13/22 17:17*	*01/15/22 02:17*	*1*
d3-NMeFOSAA	*73*		*32 - 151*	*01/13/22 17:17*	*01/15/22 02:17*	*1*
d5-NEtFOSAA	*83*		*37 - 164*	*01/13/22 17:17*	*01/15/22 02:17*	*1*
13C8 FOSA	*58*		*10 - 143*	*01/13/22 17:17*	*01/15/22 02:17*	*1*
13C4 PFBA	*121*		*41 - 132*	*01/13/22 17:17*	*01/15/22 02:17*	*1*
13C5 PFPeA	*145*		*33 - 155*	*01/13/22 17:17*	*01/15/22 02:17*	*1*

Client: Ramboll US Corporation
Job ID: 410-69080-1
Project/Site: Emerging Contaminants Sampling

Client Sample ID: Well-5-010622
Lab Sample ID: 410-69080-4
Date Collected: 01/06/22 12:20
Matrix: Groundwater
Date Received: 01/07/22 12:37

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND	cn	0.31	0.10	ug/L		01/11/22 19:00	01/21/22 10:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*80*	*cn*	*10 - 110*	*01/11/22 19:00*	*01/21/22 10:05*	*1*
Fluoranthene-d10 (Surr)	*97*	*cn*	*47 - 128*	*01/11/22 19:00*	*01/21/22 10:05*	*1*
1-Methylnaphthalene-d10 (Surr)	*83*	*cn*	*36 - 111*	*01/11/22 19:00*	*01/21/22 10:05*	*1*

Method: 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid	**0.49**	**J cn**	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:28	1
Perfluoroheptanoic acid	**0.70**	**J cn**	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:28	1
Perfluorooctanoic acid	**3.7**	**cn**	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:28	1
Perfluorononanoic acid	ND	cn	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:28	1
Perfluorodecanoic acid	ND	cn	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:28	1
Perfluorotridecanoic acid	ND	cn	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:28	1
Perfluorotetradecanoic acid	ND	cn	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:28	1
Perfluorobutanesulfonic acid	**1.1**	**J cn**	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:28	1
Perfluorohexanesulfonic acid	ND	cn	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:28	1
Perfluorooctanesulfonic acid	**5.0**	**cn**	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:28	1
NEtFOSAA	ND	cn	2.8	0.47	ng/L		01/13/22 17:17	01/15/22 02:28	1
NMeFOSAA	ND	cn	1.9	0.56	ng/L		01/13/22 17:17	01/15/22 02:28	1
Perfluoroheptanesulfonic acid	ND	cn	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:28	1
Perfluorodecanesulfonic acid	ND	cn	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:28	1
Perfluorooctanesulfonamide	ND	cn	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:28	1
Perfluorobutanoic acid	ND	cn	4.7	1.9	ng/L		01/13/22 17:17	01/15/22 02:28	1
Perfluoroundecanoic acid	ND	cn	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:28	1
Perfluorododecanoic acid	ND	cn	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:28	1
6:2 Fluorotelomer sulfonic acid	ND	cn	4.7	1.9	ng/L		01/13/22 17:17	01/15/22 02:28	1
8:2 Fluorotelomer sulfonic acid	ND	cn	2.8	0.93	ng/L		01/13/22 17:17	01/15/22 02:28	1
Perfluoropentanoic acid	ND	cn	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:28	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-8:2 FTS	*125*	*cn*	*34 - 182*	*01/13/22 17:17*	*01/15/22 02:28*	*1*
M2-6:2 FTS	*115*	*cn*	*29 - 189*	*01/13/22 17:17*	*01/15/22 02:28*	*1*
13C5 PFHxA	*103*	*cn*	*31 - 142*	*01/13/22 17:17*	*01/15/22 02:28*	*1*
13C4 PFHpA	*112*	*cn*	*30 - 144*	*01/13/22 17:17*	*01/15/22 02:28*	*1*
13C8 PFOA	*110*	*cn*	*49 - 127*	*01/13/22 17:17*	*01/15/22 02:28*	*1*
13C9 PFNA	*140*	**5+ cn*	*47 - 136*	*01/13/22 17:17*	*01/15/22 02:28*	*1*
13C6 PFDA	*123*	*cn*	*47 - 128*	*01/13/22 17:17*	*01/15/22 02:28*	*1*
13C7 PFUnA	*117*	*cn*	*40 - 135*	*01/13/22 17:17*	*01/15/22 02:28*	*1*
13C2-PFDoDA	*111*	*cn*	*28 - 136*	*01/13/22 17:17*	*01/15/22 02:28*	*1*
13C2 PFTeDA	*99*	*cn*	*10 - 144*	*01/13/22 17:17*	*01/15/22 02:28*	*1*
13C3 PFBS	*163*	*cn*	*19 - 178*	*01/13/22 17:17*	*01/15/22 02:28*	*1*
13C3 PFHxS	*118*	*cn*	*32 - 145*	*01/13/22 17:17*	*01/15/22 02:28*	*1*
13C8 PFOS	*124*	*cn*	*49 - 126*	*01/13/22 17:17*	*01/15/22 02:28*	*1*
d3-NMeFOSAA	*103*	*cn*	*32 - 151*	*01/13/22 17:17*	*01/15/22 02:28*	*1*
d5-NEtFOSAA	*123*	*cn*	*37 - 164*	*01/13/22 17:17*	*01/15/22 02:28*	*1*
13C8 FOSA	*101*	*cn*	*10 - 143*	*01/13/22 17:17*	*01/15/22 02:28*	*1*
13C4 PFBA	*121*	*cn*	*41 - 132*	*01/13/22 17:17*	*01/15/22 02:28*	*1*
13C5 PFPeA	*148*	*cn*	*33 - 155*	*01/13/22 17:17*	*01/15/22 02:28*	*1*

Client: Ramboll US Corporation
Job ID: 410-69080-1
Project/Site: Emerging Contaminants Sampling

Client Sample ID: X-1-010622
Lab Sample ID: 410-69080-5
Date Collected: 01/06/22 00:00
Matrix: Groundwater
Date Received: 01/07/22 12:37

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND	cn	0.29	0.097	ug/L		01/11/22 19:00	01/20/22 15:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*81*	*cn*	*10 - 110*	*01/11/22 19:00*	*01/20/22 15:52*	*1*
Fluoranthene-d10 (Surr)	*98*	*cn*	*47 - 128*	*01/11/22 19:00*	*01/20/22 15:52*	*1*
1-Methylnaphthalene-d10 (Surr)	*83*	*cn*	*36 - 111*	*01/11/22 19:00*	*01/20/22 15:52*	*1*

Method: 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid	ND	cn	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:38	1
Perfluoroheptanoic acid	ND	cn	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:38	1
Perfluorooctanoic acid	**2.9**	**cn**	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:38	1
Perfluorononanoic acid	ND	cn	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:38	1
Perfluorodecanoic acid	ND	cn	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:38	1
Perfluorotridecanoic acid	ND	cn	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:38	1
Perfluorotetradecanoic acid	ND	cn	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:38	1
Perfluorobutanesulfonic acid	**1.0**	**J cn**	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:38	1
Perfluorohexanesulfonic acid	ND	cn	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:38	1
Perfluorooctanesulfonic acid	**4.4**	**cn**	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:38	1
NEtFOSAA	ND	cn	2.7	0.45	ng/L		01/13/22 17:17	01/15/22 02:38	1
NMeFOSAA	ND	cn	1.8	0.53	ng/L		01/13/22 17:17	01/15/22 02:38	1
Perfluoroheptanesulfonic acid	ND	cn	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:38	1
Perfluorodecanesulfonic acid	ND	cn	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:38	1
Perfluorooctanesulfonamide	ND	cn	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:38	1
Perfluorobutanoic acid	ND	cn	4.5	1.8	ng/L		01/13/22 17:17	01/15/22 02:38	1
Perfluoroundecanoic acid	ND	cn	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:38	1
Perfluorododecanoic acid	ND	cn	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:38	1
6:2 Fluorotelomer sulfonic acid	ND	cn	4.5	1.8	ng/L		01/13/22 17:17	01/15/22 02:38	1
8:2 Fluorotelomer sulfonic acid	ND	cn	2.7	0.89	ng/L		01/13/22 17:17	01/15/22 02:38	1
Perfluoropentanoic acid	ND	cn	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:38	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-8:2 FTS	*131*	*cn*	*34 - 182*	*01/13/22 17:17*	*01/15/22 02:38*	*1*
M2-6:2 FTS	*116*	*cn*	*29 - 189*	*01/13/22 17:17*	*01/15/22 02:38*	*1*
13C5 PFHxA	*95*	*cn*	*31 - 142*	*01/13/22 17:17*	*01/15/22 02:38*	*1*
13C4 PFHpA	*106*	*cn*	*30 - 144*	*01/13/22 17:17*	*01/15/22 02:38*	*1*
13C8 PFOA	*107*	*cn*	*49 - 127*	*01/13/22 17:17*	*01/15/22 02:38*	*1*
13C9 PFNA	*140*	**5+ cn*	*47 - 136*	*01/13/22 17:17*	*01/15/22 02:38*	*1*
13C6 PFDA	*133*	**5+ cn*	*47 - 128*	*01/13/22 17:17*	*01/15/22 02:38*	*1*
13C7 PFUnA	*116*	*cn*	*40 - 135*	*01/13/22 17:17*	*01/15/22 02:38*	*1*
13C2-PFDoDA	*109*	*cn*	*28 - 136*	*01/13/22 17:17*	*01/15/22 02:38*	*1*
13C2 PFTeDA	*95*	*cn*	*10 - 144*	*01/13/22 17:17*	*01/15/22 02:38*	*1*
13C3 PFBS	*161*	*cn*	*19 - 178*	*01/13/22 17:17*	*01/15/22 02:38*	*1*
13C3 PFHxS	*114*	*cn*	*32 - 145*	*01/13/22 17:17*	*01/15/22 02:38*	*1*
13C8 PFOS	*119*	*cn*	*49 - 126*	*01/13/22 17:17*	*01/15/22 02:38*	*1*
d3-NMeFOSAA	*108*	*cn*	*32 - 151*	*01/13/22 17:17*	*01/15/22 02:38*	*1*
d5-NEtFOSAA	*125*	*cn*	*37 - 164*	*01/13/22 17:17*	*01/15/22 02:38*	*1*
13C8 FOSA	*96*	*cn*	*10 - 143*	*01/13/22 17:17*	*01/15/22 02:38*	*1*
13C4 PFBA	*125*	*cn*	*41 - 132*	*01/13/22 17:17*	*01/15/22 02:38*	*1*
13C5 PFPeA	*155*	*cn*	*33 - 155*	*01/13/22 17:17*	*01/15/22 02:38*	*1*

Client Sample ID: FRB-1-010622

Lab Sample ID: 410-69080-6

Date Collected: 01/06/22 14:10

Matrix: Water

Date Received: 01/07/22 12:37

Method: 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid	ND	cn	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:49	1
Perfluoroheptanoic acid	ND	cn	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:49	1
Perfluorooctanoic acid	ND	cn	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:49	1
Perfluorononanoic acid	ND	cn	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:49	1
Perfluorodecanoic acid	ND	cn	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:49	1
Perfluorotridecanoic acid	ND	cn	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:49	1
Perfluorotetradecanoic acid	ND	cn	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:49	1
Perfluorobutanesulfonic acid	ND	cn	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:49	1
Perfluorohexanesulfonic acid	ND	cn	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:49	1
Perfluorooctanesulfonic acid	ND	cn	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:49	1
NEtFOSAA	ND	cn	2.8	0.47	ng/L		01/13/22 17:17	01/15/22 02:49	1
NMeFOSAA	ND	cn	1.9	0.56	ng/L		01/13/22 17:17	01/15/22 02:49	1
Perfluoroheptanesulfonic acid	ND	cn	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:49	1
Perfluorodecanesulfonic acid	ND	cn	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:49	1
Perfluorooctanesulfonamide	ND	cn	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:49	1
Perfluorobutanoic acid	ND	cn	4.7	1.9	ng/L		01/13/22 17:17	01/15/22 02:49	1
Perfluoroundecanoic acid	ND	cn	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:49	1
Perfluorododecanoic acid	ND	cn	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:49	1
6:2 Fluorotelomer sulfonic acid	ND	cn	4.7	1.9	ng/L		01/13/22 17:17	01/15/22 02:49	1
8:2 Fluorotelomer sulfonic acid	ND	cn	2.8	0.93	ng/L		01/13/22 17:17	01/15/22 02:49	1
Perfluoropentanoic acid	ND	cn	1.9	0.47	ng/L		01/13/22 17:17	01/15/22 02:49	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-8:2 FTS	*111*	*cn*	*34 - 182*	*01/13/22 17:17*	*01/15/22 02:49*	*1*
M2-6:2 FTS	*98*	*cn*	*29 - 189*	*01/13/22 17:17*	*01/15/22 02:49*	*1*
13C5 PFHxA	*94*	*cn*	*31 - 142*	*01/13/22 17:17*	*01/15/22 02:49*	*1*
13C4 PFHpA	*96*	*cn*	*30 - 144*	*01/13/22 17:17*	*01/15/22 02:49*	*1*
13C8 PFOA	*98*	*cn*	*49 - 127*	*01/13/22 17:17*	*01/15/22 02:49*	*1*
13C9 PFNA	*138*	**5+ cn*	*47 - 136*	*01/13/22 17:17*	*01/15/22 02:49*	*1*
13C6 PFDA	*111*	*cn*	*47 - 128*	*01/13/22 17:17*	*01/15/22 02:49*	*1*
13C7 PFUnA	*83*	*cn*	*40 - 135*	*01/13/22 17:17*	*01/15/22 02:49*	*1*
13C2-PFDoDA	*96*	*cn*	*28 - 136*	*01/13/22 17:17*	*01/15/22 02:49*	*1*
13C2 PFTeDA	*78*	*cn*	*10 - 144*	*01/13/22 17:17*	*01/15/22 02:49*	*1*
13C3 PFBS	*118*	*cn*	*19 - 178*	*01/13/22 17:17*	*01/15/22 02:49*	*1*
13C3 PFHxS	*103*	*cn*	*32 - 145*	*01/13/22 17:17*	*01/15/22 02:49*	*1*
13C8 PFOS	*112*	*cn*	*49 - 126*	*01/13/22 17:17*	*01/15/22 02:49*	*1*
d3-NMeFOSAA	*92*	*cn*	*32 - 151*	*01/13/22 17:17*	*01/15/22 02:49*	*1*
d5-NEtFOSAA	*100*	*cn*	*37 - 164*	*01/13/22 17:17*	*01/15/22 02:49*	*1*
13C8 FOSA	*81*	*cn*	*10 - 143*	*01/13/22 17:17*	*01/15/22 02:49*	*1*
13C4 PFBA	*111*	*cn*	*41 - 132*	*01/13/22 17:17*	*01/15/22 02:49*	*1*
13C5 PFPeA	*110*	*cn*	*33 - 155*	*01/13/22 17:17*	*01/15/22 02:49*	*1*

Client Sample ID: EB-1-010622

Lab Sample ID: 410-69080-7

Date Collected: 01/06/22 14:25

Matrix: Water

Date Received: 01/07/22 12:37

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND	cn	0.29	0.098	ug/L		01/11/22 19:00	01/20/22 16:22	1

Client Sample ID: EB-1-010622
Lab Sample ID: 410-69080-7

Date Collected: 01/06/22 14:25
Matrix: Water

Date Received: 01/07/22 12:37

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Benzo(a)pyrene-d12 (Surr)	84	cn	10 - 110	01/11/22 19:00	01/20/22 16:22	1
Fluoranthene-d10 (Surr)	86	cn	47 - 128	01/11/22 19:00	01/20/22 16:22	1
1-Methylnaphthalene-d10 (Surr)	64	cn	36 - 111	01/11/22 19:00	01/20/22 16:22	1

Method: 537 IDA - EPA 537 Isotope Dilution

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid	ND	cn	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:59	1
Perfluoroheptanoic acid	ND	cn	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:59	1
Perfluorooctanoic acid	ND	cn	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:59	1
Perfluorononanoic acid	ND	cn	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:59	1
Perfluorodecanoic acid	ND	cn	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:59	1
Perfluorotridecanoic acid	ND	cn	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:59	1
Perfluorotetradecanoic acid	ND	cn	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:59	1
Perfluorobutanesulfonic acid	ND	cn	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:59	1
Perfluorohexanesulfonic acid	ND	cn	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:59	1
Perfluorooctanesulfonic acid	ND	cn	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:59	1
NEtFOSAA	ND	cn	2.7	0.45	ng/L		01/13/22 17:17	01/15/22 02:59	1
NMeFOSAA	ND	cn	1.8	0.54	ng/L		01/13/22 17:17	01/15/22 02:59	1
Perfluoroheptanesulfonic acid	ND	cn	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:59	1
Perfluorodecanesulfonic acid	ND	cn	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:59	1
Perfluorooctanesulfonamide	ND	cn	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:59	1
Perfluorobutanoic acid	ND	cn	4.5	1.8	ng/L		01/13/22 17:17	01/15/22 02:59	1
Perfluoroundecanoic acid	ND	cn	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:59	1
Perfluorododecanoic acid	ND	cn	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:59	1
6:2 Fluorotelomer sulfonic acid	ND	cn	4.5	1.8	ng/L		01/13/22 17:17	01/15/22 02:59	1
8:2 Fluorotelomer sulfonic acid	ND	cn	2.7	0.90	ng/L		01/13/22 17:17	01/15/22 02:59	1
Perfluoropentanoic acid	ND	cn	1.8	0.45	ng/L		01/13/22 17:17	01/15/22 02:59	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
M2-8:2 FTS	123	cn	34 - 182	01/13/22 17:17	01/15/22 02:59	1
M2-6:2 FTS	113	cn	29 - 189	01/13/22 17:17	01/15/22 02:59	1
13C5 PFHxA	100	cn	31 - 142	01/13/22 17:17	01/15/22 02:59	1
13C4 PFHpA	108	cn	30 - 144	01/13/22 17:17	01/15/22 02:59	1
13C8 PFOA	109	cn	49 - 127	01/13/22 17:17	01/15/22 02:59	1
13C9 PFNA	143	*5+ cn	47 - 136	01/13/22 17:17	01/15/22 02:59	1
13C6 PFDA	119	cn	47 - 128	01/13/22 17:17	01/15/22 02:59	1
13C7 PFUnA	104	cn	40 - 135	01/13/22 17:17	01/15/22 02:59	1
13C2-PFDoDA	93	cn	28 - 136	01/13/22 17:17	01/15/22 02:59	1
13C2 PFTeDA	79	cn	10 - 144	01/13/22 17:17	01/15/22 02:59	1
13C3 PFBS	131	cn	19 - 178	01/13/22 17:17	01/15/22 02:59	1
13C3 PFHxS	115	cn	32 - 145	01/13/22 17:17	01/15/22 02:59	1
13C8 PFOS	120	cn	49 - 126	01/13/22 17:17	01/15/22 02:59	1
d3-NMeFOSAA	107	cn	32 - 151	01/13/22 17:17	01/15/22 02:59	1
d5-NEtFOSAA	111	cn	37 - 164	01/13/22 17:17	01/15/22 02:59	1
13C8 FOSA	88	cn	10 - 143	01/13/22 17:17	01/15/22 02:59	1
13C4 PFBA	115	cn	41 - 132	01/13/22 17:17	01/15/22 02:59	1
13C5 PFPeA	126	cn	33 - 155	01/13/22 17:17	01/15/22 02:59	1

Surrogate Summary

Client: Ramboll US Corporation
Project/Site: Emerging Contaminants Sampling

Job ID: 410-69080-1

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Matrix: Groundwater — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
Lab Sample ID	Client Sample ID	BAPd12 (10-110)	FLN10 (47-128)	MNPd10 (36-111)
410-69080-1	Well-1-010622	82 cn	102 cn	87 cn
410-69080-2	Well-3-010622	78 cn	105 cn	88 cn
410-69080-3	Well-4-010622	38 cn	101 cn	87 cn
410-69080-4	Well-5-010622	80 cn	97 cn	83 cn
410-69080-5	X-1-010622	81 cn	98 cn	83 cn

Surrogate Legend

BAPd12 = Benzo(a)pyrene-d12 (Surr)
FLN10 = Fluoranthene-d10 (Surr)
MNPd10 = 1-Methylnaphthalene-d10 (Surr)

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
Lab Sample ID	Client Sample ID	BAPd12 (10-110)	FLN10 (47-128)	MNPd10 (36-111)
410-69080-7	EB-1-010622	84 cn	86 cn	64 cn
LCS 410-213587/2-A	Lab Control Sample	95	103	94
LCSD 410-213587/3-A	Lab Control Sample Dup	91	102	89
MB 410-213587/1-A	Method Blank	96	105	93

Surrogate Legend

BAPd12 = Benzo(a)pyrene-d12 (Surr)
FLN10 = Fluoranthene-d10 (Surr)
MNPd10 = 1-Methylnaphthalene-d10 (Surr)

Isotope Dilution Summary

Client: Ramboll US Corporation
Project/Site: Emerging Contaminants Sampling

Job ID: 410-69080-1

Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Groundwater

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		M282FTS	M262FTS	13C5PHA	C4PFHA	C8PFOA	C9PFNA	C6PFDA	13C7PUA
Lab Sample ID	Client Sample ID	(34-182)	(29-189)	(31-142)	(30-144)	(49-127)	(47-136)	(47-128)	(40-135)
410-69080-1	Well-1-010622	93	93	96	107	103	130	97	94
410-69080-2	Well-3-010622	140	127	108	120	122	124	126	123
410-69080-3	Well-4-010622	102	121	94	102	103	115	84	69
410-69080-4	Well-5-010622	125 cn	115 cn	103 cn	112 cn	110 cn	140 *5+ cn	123 cn	117 cn
410-69080-5	X-1-010622	131 cn	116 cn	95 cn	106 cn	107 cn	140 *5+ cn	133 *5+ cn	116 cn

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFDoDA	PFTDA	C3PFBS	C3PFHS	C8PFOS	d3NMFOS	d5NEFOS	PFOSA
Lab Sample ID	Client Sample ID	(28-136)	(10-144)	(19-178)	(32-145)	(49-126)	(32-151)	(37-164)	(10-143)
410-69080-1	Well-1-010622	91	81	139	125	120	87	101	78
410-69080-2	Well-3-010622	121	103	160	132	126	121	129	103
410-69080-3	Well-4-010622	73	63	146	114	84	73	83	58
410-69080-4	Well-5-010622	111 cn	99 cn	163 cn	118 cn	124 cn	103 cn	123 cn	101 cn
410-69080-5	X-1-010622	109 cn	95 cn	161 cn	114 cn	119 cn	108 cn	125 cn	96 cn

		Percent Isotope Dilution Recovery (Acceptance Limits)	
		PFBA	PFPeA
Lab Sample ID	Client Sample ID	(41-132)	(33-155)
410-69080-1	Well-1-010622	116	132
410-69080-2	Well-3-010622	123	152
410-69080-3	Well-4-010622	121	145
410-69080-4	Well-5-010622	121 cn	148 cn
410-69080-5	X-1-010622	125 cn	155 cn

Surrogate Legend

M282FTS = M2-8:2 FTS
M262FTS = M2-6:2 FTS
13C5PHA = 13C5 PFHxA
C4PFHA = 13C4 PFHpA
C8PFOA = 13C8 PFOA
C9PFNA = 13C9 PFNA
C6PFDA = 13C6 PFDA
13C7PUA = 13C7 PFUnA
PFDoDA = 13C2-PFDoDA
PFTDA = 13C2 PFTeDA
C3PFBS = 13C3 PFBS
C3PFHS = 13C3 PFHxS
C8PFOS = 13C8 PFOS
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
PFOSA = 13C8 FOSA
PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA

Isotope Dilution Summary

Client: Ramboll US Corporation
Job ID: 410-69080-1
Project/Site: Emerging Contaminants Sampling

Method: 537 IDA - EPA 537 Isotope Dilution

Matrix: Water
Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		M282FTS	M262FTS	13C5PHA	C4PFHA	C8PFOA	C9PFNA	C6PFDA	13C7PUA
Lab Sample ID	Client Sample ID	(34-182)	(29-189)	(31-142)	(30-144)	(49-127)	(47-136)	(47-128)	(40-135)
410-69080-6	FRB-1-010622	111 cn	98 cn	94 cn	96 cn	98 cn	138 *5+ cn	111 cn	83 cn
410-69080-7	EB-1-010622	123 cn	113 cn	100 cn	108 cn	109 cn	143 *5+ cn	119 cn	104 cn
LCS 410-214474/2-A	Lab Control Sample	124	111	105	104	107	136	127	114
LCSD 410-214474/3-A	Lab Control Sample Dup	101	95	94	97	95	103	103	93
MB 410-214474/1-A	Method Blank	134	120	109	113	113	135	116	110

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFDoDA	PFTDA	C3PFBS	C3PFHS	C8PFOS	d3NMFOS	d5NEFOS	PFOSA
Lab Sample ID	Client Sample ID	(28-136)	(10-144)	(19-178)	(32-145)	(49-126)	(32-151)	(37-164)	(10-143)
410-69080-6	FRB-1-010622	96 cn	78 cn	118 cn	103 cn	112 cn	92 cn	100 cn	81 cn
410-69080-7	EB-1-010622	93 cn	79 cn	131 cn	115 cn	120 cn	107 cn	111 cn	88 cn
LCS 410-214474/2-A	Lab Control Sample	116	97	124	115	122	112	116	102
LCSD 410-214474/3-A	Lab Control Sample Dup	86	77	99	104	98	94	98	77
MB 410-214474/1-A	Method Blank	109	95	119	120	119	115	123	94

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA	PFPeA						
Lab Sample ID	Client Sample ID	(41-132)	(33-155)						
410-69080-6	FRB-1-010622	111 cn	110 cn						
410-69080-7	EB-1-010622	115 cn	126 cn						
LCS 410-214474/2-A	Lab Control Sample	118	124						
LCSD 410-214474/3-A	Lab Control Sample Dup	94	99						
MB 410-214474/1-A	Method Blank	113	116						

Surrogate Legend

M282FTS = M2-8:2 FTS
M262FTS = M2-6:2 FTS
13C5PHA = 13C5 PFHxA
C4PFHA = 13C4 PFHpA
C8PFOA = 13C8 PFOA
C9PFNA = 13C9 PFNA
C6PFDA = 13C6 PFDA
13C7PUA = 13C7 PFUnA
PFDoDA = 13C2-PFDoDA
PFTDA = 13C2 PFTeDA
C3PFBS = 13C3 PFBS
C3PFHS = 13C3 PFHxS
C8PFOS = 13C8 PFOS
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
PFOSA = 13C8 FOSA
PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 410-213587/1-A
Matrix: Water
Analysis Batch: 216205

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 213587

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	ND		0.30	0.10	ug/L		01/11/22 19:00	01/20/22 05:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Benzo(a)pyrene-d12 (Surr)	*96*		*10 - 110*	*01/11/22 19:00*	*01/20/22 05:26*	*1*
Fluoranthene-d10 (Surr)	*105*		*47 - 128*	*01/11/22 19:00*	*01/20/22 05:26*	*1*
1-Methylnaphthalene-d10 (Surr)	*93*		*36 - 111*	*01/11/22 19:00*	*01/20/22 05:26*	*1*

Lab Sample ID: LCS 410-213587/2-A
Matrix: Water
Analysis Batch: 216205

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 213587

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,4-Dioxane			1.00	0.717		ug/L		72	23 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Benzo(a)pyrene-d12 (Surr)	*95*		*10 - 110*
Fluoranthene-d10 (Surr)	*103*		*47 - 128*
1-Methylnaphthalene-d10 (Surr)	*94*		*36 - 111*

Lab Sample ID: LCSD 410-213587/3-A
Matrix: Water
Analysis Batch: 216205

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 213587

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane			1.00	0.703		ug/L		70	23 - 120	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Benzo(a)pyrene-d12 (Surr)	*91*		*10 - 110*
Fluoranthene-d10 (Surr)	*102*		*47 - 128*
1-Methylnaphthalene-d10 (Surr)	*89*		*36 - 111*

Method: 537 IDA - EPA 537 Isotope Dilution

Lab Sample ID: MB 410-214474/1-A
Matrix: Water
Analysis Batch: 214881

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 214474

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid	ND		2.0	0.50	ng/L		01/13/22 17:17	01/14/22 23:28	1
Perfluoroheptanoic acid	ND		2.0	0.50	ng/L		01/13/22 17:17	01/14/22 23:28	1
Perfluorooctanoic acid	ND		2.0	0.50	ng/L		01/13/22 17:17	01/14/22 23:28	1
Perfluorononanoic acid	ND		2.0	0.50	ng/L		01/13/22 17:17	01/14/22 23:28	1
Perfluorodecanoic acid	ND		2.0	0.50	ng/L		01/13/22 17:17	01/14/22 23:28	1
Perfluorotridecanoic acid	ND		2.0	0.50	ng/L		01/13/22 17:17	01/14/22 23:28	1
Perfluorotetradecanoic acid	ND		2.0	0.50	ng/L		01/13/22 17:17	01/14/22 23:28	1
Perfluorobutanesulfonic acid	ND		2.0	0.50	ng/L		01/13/22 17:17	01/14/22 23:28	1
Perfluorohexanesulfonic acid	ND		2.0	0.50	ng/L		01/13/22 17:17	01/14/22 23:28	1
Perfluorooctanesulfonic acid	ND		2.0	0.50	ng/L		01/13/22 17:17	01/14/22 23:28	1

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: MB 410-214474/1-A
Matrix: Water
Analysis Batch: 214881

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 214474

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
NEtFOSAA	ND		3.0	0.50	ng/L		01/13/22 17:17	01/14/22 23:28	1
NMeFOSAA	ND		2.0	0.60	ng/L		01/13/22 17:17	01/14/22 23:28	1
Perfluoroheptanesulfonic acid	ND		2.0	0.50	ng/L		01/13/22 17:17	01/14/22 23:28	1
Perfluorodecanesulfonic acid	ND		2.0	0.50	ng/L		01/13/22 17:17	01/14/22 23:28	1
Perfluorooctanesulfonamide	ND		2.0	0.50	ng/L		01/13/22 17:17	01/14/22 23:28	1
Perfluorobutanoic acid	ND		5.0	2.0	ng/L		01/13/22 17:17	01/14/22 23:28	1
Perfluoroundecanoic acid	ND		2.0	0.50	ng/L		01/13/22 17:17	01/14/22 23:28	1
Perfluorododecanoic acid	ND		2.0	0.50	ng/L		01/13/22 17:17	01/14/22 23:28	1
6:2 Fluorotelomer sulfonic acid	ND		5.0	2.0	ng/L		01/13/22 17:17	01/14/22 23:28	1
8:2 Fluorotelomer sulfonic acid	ND		3.0	1.0	ng/L		01/13/22 17:17	01/14/22 23:28	1
Perfluoropentanoic acid	ND		2.0	0.50	ng/L		01/13/22 17:17	01/14/22 23:28	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
M2-8:2 FTS	*134*		*34 - 182*	*01/13/22 17:17*	*01/14/22 23:28*	*1*
M2-6:2 FTS	*120*		*29 - 189*	*01/13/22 17:17*	*01/14/22 23:28*	*1*
13C5 PFHxA	*109*		*31 - 142*	*01/13/22 17:17*	*01/14/22 23:28*	*1*
13C4 PFHpA	*113*		*30 - 144*	*01/13/22 17:17*	*01/14/22 23:28*	*1*
13C8 PFOA	*113*		*49 - 127*	*01/13/22 17:17*	*01/14/22 23:28*	*1*
13C9 PFNA	*135*		*47 - 136*	*01/13/22 17:17*	*01/14/22 23:28*	*1*
13C6 PFDA	*116*		*47 - 128*	*01/13/22 17:17*	*01/14/22 23:28*	*1*
13C7 PFUnA	*110*		*40 - 135*	*01/13/22 17:17*	*01/14/22 23:28*	*1*
13C2-PFDoDA	*109*		*28 - 136*	*01/13/22 17:17*	*01/14/22 23:28*	*1*
13C2 PFTeDA	*95*		*10 - 144*	*01/13/22 17:17*	*01/14/22 23:28*	*1*
13C3 PFBS	*119*		*19 - 178*	*01/13/22 17:17*	*01/14/22 23:28*	*1*
13C3 PFHxS	*120*		*32 - 145*	*01/13/22 17:17*	*01/14/22 23:28*	*1*
13C8 PFOS	*119*		*49 - 126*	*01/13/22 17:17*	*01/14/22 23:28*	*1*
d3-NMeFOSAA	*115*		*32 - 151*	*01/13/22 17:17*	*01/14/22 23:28*	*1*
d5-NEtFOSAA	*123*		*37 - 164*	*01/13/22 17:17*	*01/14/22 23:28*	*1*
13C8 FOSA	*94*		*10 - 143*	*01/13/22 17:17*	*01/14/22 23:28*	*1*
13C4 PFBA	*113*		*41 - 132*	*01/13/22 17:17*	*01/14/22 23:28*	*1*
13C5 PFPeA	*116*		*33 - 155*	*01/13/22 17:17*	*01/14/22 23:28*	*1*

Lab Sample ID: LCS 410-214474/2-A
Matrix: Water
Analysis Batch: 214881

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 214474

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorohexanoic acid	25.6	19.4		ng/L		76	66 - 137
Perfluoroheptanoic acid	25.6	20.6		ng/L		81	66 - 141
Perfluorooctanoic acid	25.6	21.7		ng/L		85	65 - 136
Perfluorononanoic acid	25.6	20.4		ng/L		80	65 - 140
Perfluorodecanoic acid	25.6	17.0		ng/L		66	63 - 137
Perfluorotridecanoic acid	25.6	18.8		ng/L		73	58 - 146
Perfluorotetradecanoic acid	25.6	20.8		ng/L		81	64 - 141
Perfluorobutanesulfonic acid	22.7	17.7		ng/L		78	65 - 132
Perfluorohexanesulfonic acid	23.3	17.0		ng/L		73	60 - 128
Perfluorooctanesulfonic acid	23.7	18.7		ng/L		79	51 - 126
NEtFOSAA	25.6	20.8		ng/L		81	54 - 134
NMeFOSAA	25.6	19.6		ng/L		76	58 - 143

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCS 410-214474/2-A
Matrix: Water
Analysis Batch: 214881

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 214474

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluoroheptanesulfonic acid	24.4	19.0		ng/L		78	67 - 135
Perfluorodecanesulfonic acid	24.7	20.5		ng/L		83	61 - 134
Perfluorooctanesulfonamide	25.6	24.3		ng/L		95	55 - 130
Perfluorobutanoic acid	25.6	20.6		ng/L		80	62 - 156
Perfluoroundecanoic acid	25.6	21.0		ng/L		82	62 - 138
Perfluorododecanoic acid	25.6	18.1		ng/L		71	63 - 140
6:2 Fluorotelomer sulfonic acid	24.3	18.7		ng/L		77	57 - 137
8:2 Fluorotelomer sulfonic acid	24.5	18.6		ng/L		76	56 - 140
Perfluoropentanoic acid	25.6	18.3		ng/L		72	72 - 139

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
M2-8:2 FTS	*124*		*34 - 182*
M2-6:2 FTS	*111*		*29 - 189*
13C5 PFHxA	*105*		*31 - 142*
13C4 PFHpA	*104*		*30 - 144*
13C8 PFOA	*107*		*49 - 127*
13C9 PFNA	*136*		*47 - 136*
13C6 PFDA	*127*		*47 - 128*
13C7 PFUnA	*114*		*40 - 135*
13C2-PFDoDA	*116*		*28 - 136*
13C2 PFTeDA	*97*		*10 - 144*
13C3 PFBS	*124*		*19 - 178*
13C3 PFHxS	*115*		*32 - 145*
13C8 PFOS	*122*		*49 - 126*
d3-NMeFOSAA	*112*		*32 - 151*
d5-NEtFOSAA	*116*		*37 - 164*
13C8 FOSA	*102*		*10 - 143*
13C4 PFBA	*118*		*41 - 132*
13C5 PFPeA	*124*		*33 - 155*

Lab Sample ID: LCSD 410-214474/3-A
Matrix: Water
Analysis Batch: 214881

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 214474

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorohexanoic acid	25.6	21.7		ng/L		85	66 - 137	11	30
Perfluoroheptanoic acid	25.6	19.6		ng/L		76	66 - 141	5	30
Perfluorooctanoic acid	25.6	20.0		ng/L		78	65 - 136	8	30
Perfluorononanoic acid	25.6	20.3		ng/L		79	65 - 140	0	30
Perfluorodecanoic acid	25.6	16.3		ng/L		64	63 - 137	4	30
Perfluorotridecanoic acid	25.6	19.3		ng/L		75	58 - 146	3	30
Perfluorotetradecanoic acid	25.6	20.3		ng/L		79	64 - 141	3	30
Perfluorobutanesulfonic acid	22.7	17.6		ng/L		78	65 - 132	0	30
Perfluorohexanesulfonic acid	23.3	17.0		ng/L		73	60 - 128	0	30
Perfluorooctanesulfonic acid	23.7	17.9		ng/L		75	51 - 126	4	30
NEtFOSAA	25.6	19.8		ng/L		77	54 - 134	5	30
NMeFOSAA	25.6	18.6		ng/L		72	58 - 143	5	30
Perfluoroheptanesulfonic acid	24.4	17.7		ng/L		72	67 - 135	7	30
Perfluorodecanesulfonic acid	24.7	19.1		ng/L		77	61 - 134	7	30

Method: 537 IDA - EPA 537 Isotope Dilution (Continued)

Lab Sample ID: LCSD 410-214474/3-A
Matrix: Water
Analysis Batch: 214881

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 214474

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorooctanesulfonamide			25.6	26.5		ng/L		103	55 - 130	9	30
Perfluorobutanoic acid			25.6	20.6		ng/L		80	62 - 156	0	30
Perfluoroundecanoic acid			25.6	21.7		ng/L		85	62 - 138	3	30
Perfluorododecanoic acid			25.6	19.6		ng/L		76	63 - 140	8	30
6:2 Fluorotelomer sulfonic acid			24.3	18.4		ng/L		76	57 - 137	2	30
8:2 Fluorotelomer sulfonic acid			24.5	18.5		ng/L		76	56 - 140	0	30
Perfluoropentanoic acid			25.6	18.5		ng/L		72	72 - 139	1	30

Isotope Dilution	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
M2-8:2 FTS	*101*		*34 - 182*
M2-6:2 FTS	*95*		*29 - 189*
13C5 PFHxA	*94*		*31 - 142*
13C4 PFHpA	*97*		*30 - 144*
13C8 PFOA	*95*		*49 - 127*
13C9 PFNA	*103*		*47 - 136*
13C6 PFDA	*103*		*47 - 128*
13C7 PFUnA	*93*		*40 - 135*
13C2-PFDoDA	*86*		*28 - 136*
13C2 PFTeDA	*77*		*10 - 144*
13C3 PFBS	*99*		*19 - 178*
13C3 PFHxS	*104*		*32 - 145*
13C8 PFOS	*98*		*49 - 126*
d3-NMeFOSAA	*94*		*32 - 151*
d5-NEtFOSAA	*98*		*37 - 164*
13C8 FOSA	*77*		*10 - 143*
13C4 PFBA	*94*		*41 - 132*
13C5 PFPeA	*99*		*33 - 155*

GC/MS Semi VOA

Prep Batch: 213587

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-69080-1	Well-1-010622	Total/NA	Groundwater	3510C	
410-69080-2	Well-3-010622	Total/NA	Groundwater	3510C	
410-69080-3	Well-4-010622	Total/NA	Groundwater	3510C	
410-69080-4	Well-5-010622	Total/NA	Groundwater	3510C	
410-69080-5	X-1-010622	Total/NA	Groundwater	3510C	
410-69080-7	EB-1-010622	Total/NA	Water	3510C	
MB 410-213587/1-A	Method Blank	Total/NA	Water	3510C	
LCS 410-213587/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 410-213587/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 216205

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-69080-1	Well-1-010622	Total/NA	Groundwater	8270E SIM	213587
410-69080-2	Well-3-010622	Total/NA	Groundwater	8270E SIM	213587
410-69080-3	Well-4-010622	Total/NA	Groundwater	8270E SIM	213587
410-69080-5	X-1-010622	Total/NA	Groundwater	8270E SIM	213587
410-69080-7	EB-1-010622	Total/NA	Water	8270E SIM	213587
MB 410-213587/1-A	Method Blank	Total/NA	Water	8270E SIM	213587
LCS 410-213587/2-A	Lab Control Sample	Total/NA	Water	8270E SIM	213587
LCSD 410-213587/3-A	Lab Control Sample Dup	Total/NA	Water	8270E SIM	213587

Analysis Batch: 216613

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-69080-4	Well-5-010622	Total/NA	Groundwater	8270E SIM	213587

LCMS

Prep Batch: 214474

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-69080-1	Well-1-010622	Total/NA	Groundwater	537 IDA	
410-69080-2	Well-3-010622	Total/NA	Groundwater	537 IDA	
410-69080-3	Well-4-010622	Total/NA	Groundwater	537 IDA	
410-69080-4	Well-5-010622	Total/NA	Groundwater	537 IDA	
410-69080-5	X-1-010622	Total/NA	Groundwater	537 IDA	
410-69080-6	FRB-1-010622	Total/NA	Water	537 IDA	
410-69080-7	EB-1-010622	Total/NA	Water	537 IDA	
MB 410-214474/1-A	Method Blank	Total/NA	Water	537 IDA	
LCS 410-214474/2-A	Lab Control Sample	Total/NA	Water	537 IDA	
LCSD 410-214474/3-A	Lab Control Sample Dup	Total/NA	Water	537 IDA	

Analysis Batch: 214881

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-69080-2	Well-3-010622	Total/NA	Groundwater	537 IDA	214474
410-69080-3	Well-4-010622	Total/NA	Groundwater	537 IDA	214474
410-69080-4	Well-5-010622	Total/NA	Groundwater	537 IDA	214474
410-69080-5	X-1-010622	Total/NA	Groundwater	537 IDA	214474
410-69080-6	FRB-1-010622	Total/NA	Water	537 IDA	214474
410-69080-7	EB-1-010622	Total/NA	Water	537 IDA	214474
MB 410-214474/1-A	Method Blank	Total/NA	Water	537 IDA	214474
LCS 410-214474/2-A	Lab Control Sample	Total/NA	Water	537 IDA	214474
LCSD 410-214474/3-A	Lab Control Sample Dup	Total/NA	Water	537 IDA	214474

QC Association Summary

Client: Ramboll US Corporation
Job ID: 410-69080-1
Project/Site: Emerging Contaminants Sampling

LCMS

Analysis Batch: 215297

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-69080-1	Well-1-010622	Total/NA	Groundwater	537 IDA	214474

Lab Chronicle

Client: Ramboll US Corporation
Job ID: 410-69080-1
Project/Site: Emerging Contaminants Sampling

Client Sample ID: Well-1-010622
Lab Sample ID: 410-69080-1
Date Collected: 01/06/22 13:30
Matrix: Groundwater
Date Received: 01/07/22 12:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			213587	01/11/22 19:00	QQ3P	ELLE
Total/NA	Analysis	8270E SIM		1	216205	01/20/22 13:53	UJM0	ELLE
Total/NA	Prep	537 IDA			214474	01/13/22 17:17	ZWK6	ELLE
Total/NA	Analysis	537 IDA		1	215297	01/17/22 23:48	MT26	ELLE

Client Sample ID: Well-3-010622
Lab Sample ID: 410-69080-2
Date Collected: 01/06/22 10:10
Matrix: Groundwater
Date Received: 01/07/22 12:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			213587	01/11/22 19:00	QQ3P	ELLE
Total/NA	Analysis	8270E SIM		1	216205	01/20/22 14:22	UJM0	ELLE
Total/NA	Prep	537 IDA			214474	01/13/22 17:17	ZWK6	ELLE
Total/NA	Analysis	537 IDA		1	214881	01/15/22 02:06	PY4D	ELLE

Client Sample ID: Well-4-010622
Lab Sample ID: 410-69080-3
Date Collected: 01/06/22 14:00
Matrix: Groundwater
Date Received: 01/07/22 12:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			213587	01/11/22 19:00	QQ3P	ELLE
Total/NA	Analysis	8270E SIM		1	216205	01/20/22 14:52	UJM0	ELLE
Total/NA	Prep	537 IDA			214474	01/13/22 17:17	ZWK6	ELLE
Total/NA	Analysis	537 IDA		1	214881	01/15/22 02:17	PY4D	ELLE

Client Sample ID: Well-5-010622
Lab Sample ID: 410-69080-4
Date Collected: 01/06/22 12:20
Matrix: Groundwater
Date Received: 01/07/22 12:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			213587	01/11/22 19:00	QQ3P	ELLE
Total/NA	Analysis	8270E SIM		1	216613	01/21/22 10:05	X3ZL	ELLE
Total/NA	Prep	537 IDA			214474	01/13/22 17:17	ZWK6	ELLE
Total/NA	Analysis	537 IDA		1	214881	01/15/22 02:28	PY4D	ELLE

Client Sample ID: X-1-010622
Lab Sample ID: 410-69080-5
Date Collected: 01/06/22 00:00
Matrix: Groundwater
Date Received: 01/07/22 12:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			213587	01/11/22 19:00	QQ3P	ELLE
Total/NA	Analysis	8270E SIM		1	216205	01/20/22 15:52	UJM0	ELLE
Total/NA	Prep	537 IDA			214474	01/13/22 17:17	ZWK6	ELLE
Total/NA	Analysis	537 IDA		1	214881	01/15/22 02:38	PY4D	ELLE

Lab Chronicle

Client: Ramboll US Corporation
Job ID: 410-69080-1
Project/Site: Emerging Contaminants Sampling

Client Sample ID: FRB-1-010622
Lab Sample ID: 410-69080-6

Date Collected: 01/06/22 14:10
Matrix: Water
Date Received: 01/07/22 12:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	537 IDA			214474	01/13/22 17:17	ZWK6	ELLE
Total/NA	Analysis	537 IDA		1	214881	01/15/22 02:49	PY4D	ELLE

Client Sample ID: EB-1-010622
Lab Sample ID: 410-69080-7

Date Collected: 01/06/22 14:25
Matrix: Water
Date Received: 01/07/22 12:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			213587	01/11/22 19:00	QQ3P	ELLE
Total/NA	Analysis	8270E SIM		1	216205	01/20/22 16:22	UJM0	ELLE
Total/NA	Prep	537 IDA			214474	01/13/22 17:17	ZWK6	ELLE
Total/NA	Analysis	537 IDA		1	214881	01/15/22 02:59	PY4D	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Ramboll US Corporation
Job ID: 410-69080-1
Project/Site: Emerging Contaminants Sampling

Laboratory: Eurofins Lancaster Laboratories Env, LLC

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

Authority	Program	Identification Number	Expiration Date
New York	NELAP	10670	04-01-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
537 IDA	537 IDA	Groundwater	6:2 Fluorotelomer sulfonic acid
537 IDA	537 IDA	Groundwater	8:2 Fluorotelomer sulfonic acid
537 IDA	537 IDA	Groundwater	NEtFOSAA
537 IDA	537 IDA	Groundwater	NMeFOSAA
537 IDA	537 IDA	Groundwater	Perfluorobutanesulfonic acid
537 IDA	537 IDA	Groundwater	Perfluorobutanoic acid
537 IDA	537 IDA	Groundwater	Perfluorodecanesulfonic acid
537 IDA	537 IDA	Groundwater	Perfluorodecanoic acid
537 IDA	537 IDA	Groundwater	Perfluorododecanoic acid
537 IDA	537 IDA	Groundwater	Perfluoroheptanesulfonic acid
537 IDA	537 IDA	Groundwater	Perfluoroheptanoic acid
537 IDA	537 IDA	Groundwater	Perfluorohexanesulfonic acid
537 IDA	537 IDA	Groundwater	Perfluorohexanoic acid
537 IDA	537 IDA	Groundwater	Perfluorononanoic acid
537 IDA	537 IDA	Groundwater	Perfluorooctanesulfonamide
537 IDA	537 IDA	Groundwater	Perfluorooctanesulfonic acid
537 IDA	537 IDA	Groundwater	Perfluorooctanoic acid
537 IDA	537 IDA	Groundwater	Perfluoropentanoic acid
537 IDA	537 IDA	Groundwater	Perfluorotetradecanoic acid
537 IDA	537 IDA	Groundwater	Perfluorotridecanoic acid
537 IDA	537 IDA	Groundwater	Perfluoroundecanoic acid
537 IDA	537 IDA	Water	6:2 Fluorotelomer sulfonic acid
537 IDA	537 IDA	Water	8:2 Fluorotelomer sulfonic acid
537 IDA	537 IDA	Water	NEtFOSAA
537 IDA	537 IDA	Water	NMeFOSAA
537 IDA	537 IDA	Water	Perfluorobutanesulfonic acid
537 IDA	537 IDA	Water	Perfluorobutanoic acid
537 IDA	537 IDA	Water	Perfluorodecanesulfonic acid
537 IDA	537 IDA	Water	Perfluorodecanoic acid
537 IDA	537 IDA	Water	Perfluorododecanoic acid
537 IDA	537 IDA	Water	Perfluoroheptanesulfonic acid
537 IDA	537 IDA	Water	Perfluoroheptanoic acid
537 IDA	537 IDA	Water	Perfluorohexanesulfonic acid
537 IDA	537 IDA	Water	Perfluorohexanoic acid
537 IDA	537 IDA	Water	Perfluorononanoic acid
537 IDA	537 IDA	Water	Perfluorooctanesulfonamide
537 IDA	537 IDA	Water	Perfluorooctanesulfonic acid
537 IDA	537 IDA	Water	Perfluorooctanoic acid
537 IDA	537 IDA	Water	Perfluoropentanoic acid
537 IDA	537 IDA	Water	Perfluorotetradecanoic acid
537 IDA	537 IDA	Water	Perfluorotridecanoic acid
537 IDA	537 IDA	Water	Perfluoroundecanoic acid

Method Summary

Client: Ramboll US Corporation
Job ID: 410-69080-1
Project/Site: Emerging Contaminants Sampling

Method	Method Description	Protocol	Laboratory
8270E SIM	Semivolatile Organic Compounds (GC/MS SIM)	SW846	ELLE
537 IDA	EPA 537 Isotope Dilution	EPA	ELLE
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ELLE
537 IDA	EPA 537 Isotope Dilution	EPA	ELLE

Protocol References:

EPA = US Environmental Protection Agency

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

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Ramboll US Corporation
Job ID: 410-69080-1
Project/Site: Emerging Contaminants Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-69080-1	Well-1-010622	Groundwater	01/06/22 13:30	01/07/22 12:37
410-69080-2	Well-3-010622	Groundwater	01/06/22 10:10	01/07/22 12:37
410-69080-3	Well-4-010622	Groundwater	01/06/22 14:00	01/07/22 12:37
410-69080-4	Well-5-010622	Groundwater	01/06/22 12:20	01/07/22 12:37
410-69080-5	X-1-010622	Groundwater	01/06/22 00:00	01/07/22 12:37
410-69080-6	FRB-1-010622	Water	01/06/22 14:10	01/07/22 12:37
410-69080-7	EB-1-010622	Water	01/06/22 14:25	01/07/22 12:37

410-69080 Chain of Custody

Chain of Custody/Analysis Report

Page 1 of 1

Sampler(s): (Signature) Sarah Travaly, Sarah Yeung, William Pierce

Lab Use Only

Project Number:

Job Number:

Lab ID:

Contact: Paul D'Annibale
Address: 94 New Karner Road, Ste. 106, Albany, N.Y. 12203
Phone: (518) 724-7272
Email: Paul.D'Annibale@ramboll.com

Laboratory: Eurofins Lancaster Labs
2425 New Holland Pike
Lancaster, PA 17601
Phone: 717-656-2300

Holding Time: 14 days from sample collection to analysis

Package Requirement: NYSDEC Full ASP Cat B Data Package with a std 10-business day TAT

EDD Format: EQuIS 4-File EDD with NYSDEC EDD reference values

Project: Emerging Contaminants Sampling
Location:
Project #:

Sample Identification									Analysis Required								
	Unique Field Sample ID (sys_sample_code)	Date	Time	Sample Type (see key)	Sample Matrix (see key)	Number of Containers	Grab (G) or Composite (C)	Field Filtered (Y / N)	Preservatives: (see key at bottom) 0								Lab Sample ID
									PFAS (21 Compounds) by USEPA Modified Method 537	USEPA Method 8270 Selective Ion Monitoring (SIM)							
1	Well-1-010622	01/06/22	1330	N	WG	4	G	N	X	X							
2	Well-3-010622		1010	N	WG	4	G	N	X	X							
3	Well-4-010622		1400	N	WG	4	G	N	X	X							
4	Well-5-010622		1220	N	WG	4	G	N	X	X							
5	X-1-010622		—	FD	WG	4	G	N	X	X							
6	FRB-1-010622		1410	FB	WQ	2	G	N	X								
7	EB-1-010622		1425	EB	WQ	4	G	N	X	X							
8				MC													
9																	
10																	
11			1-10-2022														
12																	

Special Instructions:

Use this space if shipped via courier (e.g., Fed Ex) Relinquished by:	Date / Time	Courier Name: / Tracking Number	Date / Time	Condition	Other Comments or Notes regarding condition of samples as received
Relinquished by: Sarah Yeung of Ramboll	Date 1/6/22 Time 1515	Received by: Tim Kwolleyn of	Date 1-6-2022 Time 515	Custody Seals intact? yes	
Relinquished by: Tim Kwolleyn of EETA	Date 1-6-2022 Time 1700	Received by: of ENE	Date 1/7/22 Time 1237	Cooler Temperature: 1.1°C | 3.0°C	

Sample Type: N = Normal env. sample, FD = field duplicate, EB = Equipment Blank, TB = Trip Blank, MS = Lab Matrix Spike, Other (Specify)
Sample Matrix: SE = Sediment, SO = Soil, WG = Ground Water, WS = Surface Water, WW = Waste Water, WP = Potable Water, SQ = Soil Quality Control, WQ = Water Quality Control
Preservatives Code: 0 = none, 1 = HCL, 2 = HNO3, 3 = H2SO4, 4 = NaOH, 5 = Zn Acetate, 6 = MeOH, 7 = NaHSO4, 8 = other

KAL

Login Sample Receipt Checklist

Client: Ramboll US Corporation

Job Number: 410-69080-1

Login Number: 69080

List Source: Eurofins Lancaster Laboratories Env, LLC

List Number: 1

Creator: Renner, Melissa

Question	Answer	Comment
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	N/A	

APPENDIX C
DATA USABILITY SUMMARY REPORT

RAMBOLL

ENVIRONMENT
& HEALTH

MEMO

Date: **February 7, 2022**

To: **Paul D'Annibale, Project Manager**

From: **Rob Huening**

cc: **File**

Subject: **Saint-Gobain**
January 2022 Well Sampling Validation
Eurofins Lancaster Method 537 by ID
SDG J69080, 5 Groundwater Samples, 2 Field Blanks

Data validation was conducted for Eurofins Lancaster data package J69080 based on the National Functional Guidelines for Superfund Organic Methods Data Review OSWER 9355.0-132, EPA-540-R-014-002 (USEPA January 2017). The data package included results for samples analyzed by USEPA Method 537 IDA (Isotope Dilution). The following samples were reported in this data package:

Ramboll
Boston, MA 02210
USA

T +1 617 946 6114
www.ramboll-environ.com

Sample ID	Lab Sample ID
Well-1-010622	FA75952-1
Well-3-010622	FA75952-2
Well-4-010622	FA75952-3
Well-5-010622	FA75952-4
X-1-010622	FA75952-5
FRB-1-010622	FA75952-6
EB-1-010622	FA75952-7

Data validation included a review of the following QC parameters:

- Data Package Completeness
- Preservation and Holding Times
- Blanks
- Deuterated Monitoring Compound or Surrogate Spikes
- Matrix Spike/Matrix Spike Duplicate
- Laboratory Control Sample
- Internal Standards
- Overall Assessment of Data

QC criteria were met for each parameter with minor exceptions as noted in the attached worksheet reviews. Results should be used for project purposes only after reviewing the QA deficiencies discussed there.

Overall Assessment of Sampling Data

Overall, data are usable for project purposes. Data can be used and reported as presented by the laboratory. Laboratory flags indicating possible biases (cn) can be removed based on this review. No other issues were identified with data.