

**From:** Susan Petrofske <SPETROFSKE@ramboll.com>  
**Sent:** Thursday, May 16, 2024 4:47 PM  
**To:** Beggs, Tauren R - DNR  
**Cc:** Kristin Jones (Kristin.Jones@newellco.com); Gabriel M. Rodriguez (gabriel.rodriguez@afslaw.com); Andrew Sawula ; Paul Lindquist; Jeanne Tarvin  
**Subject:** NR 716.14 Data Transmittal for BRRTS#: 02-36-589295 (BRIGHT HORIZON PROPERTIES LLC [FORMER])  
**Attachments:** 02-36-589295\_NR 716.14 Data Transmittal-April 2024 GW\_05 16 2024.pdf

Tauren,

Attached for your records is a copy of the data transmittal letter for groundwater samples collected in April 2024 as part of the PFAS focused site investigation activities at the West River Lofts, LLC (Former Bright Horizons) site in Two Rivers, WI. Please note, a copy of this letter and attachments has also been uploaded to the WDNR RR Program Submittal Portal.

Kind regards

**Susan Petrofske**

Senior Managing Consultant

D 262-901-3501  
M 262-391-5990  
[spetrofske@ramboll.com](mailto:spetrofske@ramboll.com)

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Classification: Confidential

**Sent Via E-Mail and WAMS**

Mr. Tauren Beggs  
Remediation and Redevelopment Program  
Wisconsin Department of Natural Resources  
2984 Shawano Avenue  
Green Bay, WI 54313-6727

West River Lofts LLC  
c/o Melissa N. Allen  
1420 W. Center Street, Suite 2  
Milwaukee, WI 53206

**NR 716.14 DATA TRANSMITTAL - GROUNDWATER SAMPLE RESULTS  
WEST RIVER LOFTS, LLC, 1621 14<sup>TH</sup> STREET, TWO RIVERS, WISCONSIN  
(PORTION OF BRIGHT HORIZON PROPERTIES, LLC [FORMER]  
1702 13<sup>TH</sup> STREET); WDNR BRRTS NO. 02-36-589295**

Dear Mr. Beggs and Ms. Allen:

May 16, 2024

Ramboll Americas Engineering Solutions, Inc. (Ramboll), on behalf of Newell Operating Company (NOC), is providing the Wisconsin Department of Natural Resources (WDNR) and the current property owner with the attached groundwater analytical results collected from the monitoring wells recently installed at the West River Lofts, LLC (WRL) property located at 1621 14<sup>th</sup> Street (former Mirro Plant No. 4) in Two Rivers, Wisconsin (the "Site"). The samples were collected on April 5, 2024, and analyzed in accordance with the WDNR approved *PFAS Focused NR 716 Site Investigation Work Plan* (the "Work Plan"). The laboratory analytical reports (discrete and composite waste characterization), tabulated discrete sample results, and a figure showing the sample locations are attached. These site investigation activities, along with the additional items outlined in the Work Plan, will be formally documented in the *Wisconsin Administrative Code NR 716 Focused Site Investigation Report* prepared at the completion of the site investigation.

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Ref. 1690026868

If you have any questions or require additional information, feel free to contact the undersigned.

Sincerely,



**Susan Petrofske**  
Senior Managing Consultant

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cc: Kristin Jones, NOC  
Gabriel Rodriguez, ArentFox Schiff  
Andrew Sawula, ArentFox Schiff  
Edward Witte, Godfrey & Kahn

## ATTACHMENTS

**Table 1: April 2024 Groundwater Analytical Results**

**Figure 1: Monitoring Well Locations**

**Laboratory Analytical Reports (Eurofins TestAmerica)**

**Table 1. April 2024 Groundwater Analytical Results**

West River Lofts, LLC (Portion of Bright Horizon Properties LLC [Former])  
 1621 14th Street, Two Rivers, Wisconsin  
 BRRTS No.: 02-36-589295 (ERP) FID: 436010300

Sample ID	Sample Date	Fluorotelomer sulfonic acid (FTSA)					Perfluoroalkane sulfonamides (FASA) and derivatives							Perfluoroalkane sulfonic acid (PFSA)								
		4,8-Dioxa-3h-perfluorononanoic acid (ADONA)	4:2 Fluorotelomer sulfonic acid	6:2 Fluorotelomer sulfonic acid	8:2 Fluorotelomer sulfonic acid	HFPO-DA (GenX)	NETFOSA	NETFOSAA	NETFOSE	NMeFOSA	NMeFOSAA	NMeFOSE	Perfluorooctanesulfonamide (FOSA)	Perfluorobutanesulfonic acid (PFBS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorododecane sulfonic acid (PFDoDS)	Perfluoroheptanesulfonic acid (PFHpS)	Perfluorohexanesulfonic acid (PFHxS)	Perfluorononanesulfonic acid (PFNS)	Perfluorooctanesulfonic acid (PFOS)	Perfluoropentanesulfonic acid (PFPeS)	
Reporting Units:		ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L
WDHS Recommended GW ES:		<b>3000</b>	<b>NS</b>	<b>NS</b>	<b>NS</b>	<b>300</b>	<b>20</b>	<b>20</b>	<b>20</b>	<b>NS</b>	<b>NS</b>	<b>NS</b>	<b>20</b>	<b>450000</b>	<b>NS</b>	<b>NS</b>	<b>NS</b>	<b>40</b>	<b>NS</b>	<b>20</b>	<b>NS</b>	
WDHS Recommended GW PAL:		<u>600</u>	<u>NS</u>	<u>NS</u>	<u>NS</u>	<u>30</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>NS</u>	<u>NS</u>	<u>NS</u>	<u>2</u>	<u>90000</u>	<u>NS</u>	<u>NS</u>	<u>NS</u>	<u>4</u>	<u>NS</u>	<u>2</u>	<u>NS</u>	
MW-101	4/5/2024	<1.9 U	<1.9 U	<4.7 U	<1.9 U	<3.8 U	<1.9 U	<4.7 U	<1.9 U	<1.9 U	<4.7 U	<3.8 U	<1.9 U	0.92 J	<1.9 U	<1.9 U	<1.9 U	0.80 J	<1.9 U	<u>42</u>	<1.9 U	
MW-102	4/5/2024	<1.8 U	<1.8 U	<4.6 U	<b>0.44 J</b>	<3.7 U	<1.8 U	<4.6 U	<1.8 U	<1.8 U	<4.6 U	<3.7 U	<1.8 U	<1.8 U	<1.8 U	<1.8 U	<1.8 U	2.3	<1.8 U	<u>150</u>	<1.8 U	
MW-103	4/5/2024	<1.9 U	<1.9 U	<4.7 U	<1.9 U	<3.7 U	<1.9 U	<4.7 U	<1.9 U	<1.9 U	<4.7 U	<3.7 U	<1.9 U	<1.9 U	<1.9 U	<1.9 U	<b>1.8 J</b>	<b>2.2</b>	<1.9 U	<u>160</u>	<1.9 U	
MW-104	4/5/2024	<1.9 U	<1.9 U	<4.9 U	<1.9 U	<3.9 U	<1.9 U	<4.9 U	<1.9 U	<1.9 U	<4.9 U	<3.9 U	<1.9 U	<b>1.4 J</b>	<1.9 U	<1.9 U	<1.9 U	<1.9 U	<1.9 U	<u>23</u>	<1.9 U	
MW-105	4/5/2024	<2.0 U	<2.0 U	6.3 J-	6.0 J-	<4.1 U	<2.0 U	<5.1 U	<2.0 U	<2.0 U	<5.1 U	<4.1 U	<2.0 U	5.9	<2.0 U	<2.0 U	5.4	<u>13</u>	<2.0 U	<u>530</u>	2.0	

**Notes:**  
 Lab comments, additional data qualifiers and definitions can be found in associated laboratory and validation reports.

<b>Bold</b>	is equal to or greater than WDHS Recommended Groundwater ES
<u>Underlined</u>	is equal to or greater than WDHS Recommended Groundwater PAL
Gray Text	analyte not detected

**Acronyms:**  
 BRRTS = Bureau for Remediation and Redevelopment Tracking System  
 ES = Enforcement Standard  
 FID = facility identification number  
 GW = groundwater  
 ng/L = nanograms per liter  
 NS = No Screening Level  
 PAL = Preventive Action Limit  
 PFAS = per- and polyfluoroalkyl substances  
 WDHS = Wisconsin Department of Health Services  
 WDNR = Wisconsin Department of Natural Resources

**Screening Levels:**  
 WDHS recommended PAL and ES groundwater quality standards are proposed for PFAS.  
 (<https://www.dhs.wisconsin.gov/water/gws.htm>)

**Results & Qualifiers:**  
 < = Concentration is less than the Limit of Detection (LOD)  
 J = Estimated concentration  
 J- = Indicates a concentration estimated with low bias  
 U = Concentration was not detected above the reporting limit

**Table 1. April 2024 Groundwater Analytical Results**

West River Lofts, LLC (Portion of Bright Horizon Properties LLC [Former])  
 1621 14th Street, Two Rivers, Wisconsin  
 BRRTS No.: 02-36-589295 (ERP) FID: 436010300

Sample ID	Sample Date	Perfluoroalkyl carboxylic acid (PFCA)											Polyfluoroalkyl ether sulfonic acid (PFESA)		
		Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoA)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctanoic acid (PFOA)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnA)	11Cl-PF3OUdS (F-53B Minor)	9Cl-PF3ONS (F-53B Major)	
Reporting Units:		ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L	ng/L
WDHS Recommended GW ES:		<b>10000</b>	<b>300</b>	<b>500</b>	<b>NS</b>	<b>150000</b>	<b>30</b>	<b>20</b>	<b>NS</b>	<b>10000</b>	<b>NS</b>	<b>3000</b>	<b>NS</b>	<b>NS</b>	
WDHS Recommended GW PAL:		<u>2000</u>	<u>60</u>	<u>100</u>	<u>NS</u>	<u>30000</u>	<u>3</u>	<u>2</u>	<u>NS</u>	<u>2000</u>	<u>NS</u>	<u>600</u>	<u>NS</u>	<u>NS</u>	
MW-101	4/5/2024	< 22 U	< 1.9 U	< 1.9 U	0.53 J	< 1.9 U	< 1.9 U	<u>15</u>	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	
MW-102	4/5/2024	< 4.6 UJ	< 1.8 U	< 1.8 U	2.7	< 1.8 U	< 1.8 U	<u>8.9</u>	< 1500 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	< 1.8 U	
MW-103	4/5/2024	< 28 U	< 1.9 U	< 1.9 U	2.4	0.97 J	< 1.9 U	<u>110</u>	< 36 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	
MW-104	4/5/2024	< 4.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	<u>2.4</u>	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	< 1.9 U	
MW-105	4/5/2024	< 5.1 U	0.93 J	< 2.0 U	16	9.8	2.7	<u>58</u>	30	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	

**Notes:**

Lab comments, additional data qualifiers and definitions can be found in associated laboratory and validation reports.

<b>Bold</b>	is equal to or greater than WDHS Recommended Groundwater ES
<u>Underlined</u>	is equal to or greater than WDHS Recommended Groundwater PAL
Gray Text	analyte not detected

**Acronyms:**

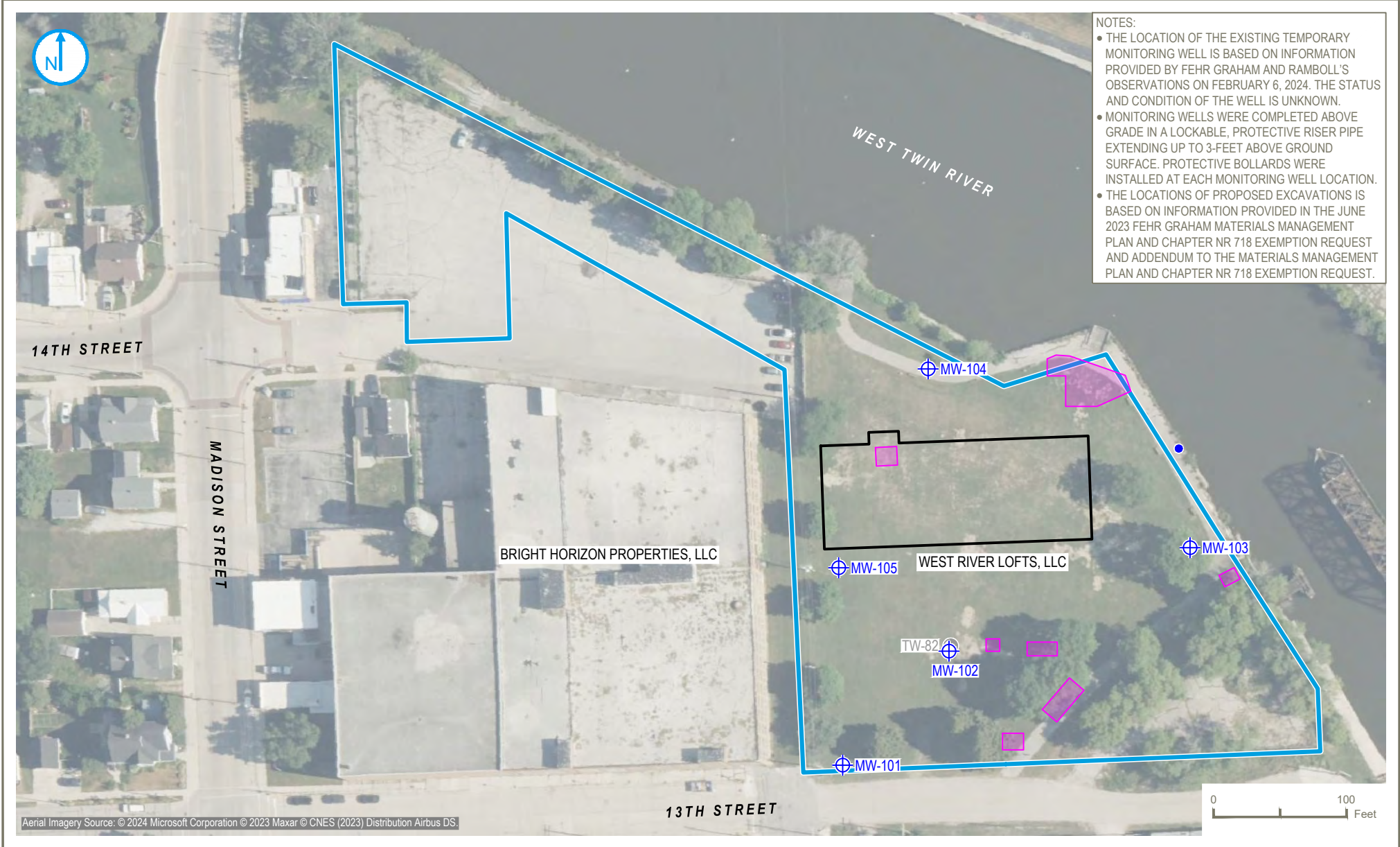
BRRTS = Bureau for Remediation and Redevelopment Tracking System  
 ES = Enforcement Standard  
 FID = facility identification number  
 GW = groundwater  
 ng/L = nanograms per liter  
 NS = No Screening Level  
 PAL = Preventive Action Limit  
 PFAS = per- and polyfluoroalkyl substances  
 WDHS = Wisconsin Department of Health Services  
 WDNR = Wisconsin Department of Natural Resources

**Screening Levels:**

WDHS recommended PAL and ES groundwater quality standards are proposed for PFAS. (<https://www.dhs.wisconsin.gov/water/gws.htm>)

**Results & Qualifiers:**

< = Concentration is less than the Limit of Detection (LOD)  
 J = Estimated concentration  
 J- = Indicates a concentration estimated with low bias  
 U = Concentration was not detected above the reporting limit



**NOTES:**

- THE LOCATION OF THE EXISTING TEMPORARY MONITORING WELL IS BASED ON INFORMATION PROVIDED BY FEHR GRAHAM AND RAMBOLL'S OBSERVATIONS ON FEBRUARY 6, 2024. THE STATUS AND CONDITION OF THE WELL IS UNKNOWN.
- MONITORING WELLS WERE COMPLETED ABOVE GRADE IN A LOCKABLE, PROTECTIVE RISER PIPE EXTENDING UP TO 3- FEET ABOVE GROUND SURFACE. PROTECTIVE BOLLARDS WERE INSTALLED AT EACH MONITORING WELL LOCATION.
- THE LOCATIONS OF PROPOSED EXCAVATIONS IS BASED ON INFORMATION PROVIDED IN THE JUNE 2023 FEHR GRAHAM MATERIALS MANAGEMENT PLAN AND CHAPTER NR 718 EXEMPTION REQUEST AND ADDENDUM TO THE MATERIALS MANAGEMENT PLAN AND CHAPTER NR 718 EXEMPTION REQUEST.

Aerial Imagery Source: © 2024 Microsoft Corporation © 2023 Maxar © CNES (2023) Distribution Airbus DS.

- PROPERTY BOUNDARY (APPROXIMATE)
- ⊕ MONITORING WELL/TEMPORARY MONITORING WELL (INSTALLED BY OTHERS)
- ⊕ MONITORING WELL
- APPROXIMATE LOCATION OF THE FUTURE EXCAVATION AREAS AS DESCRIBED IN THE MATERIALS MANAGEMENT PLAN AND ADDENDUM TO THE MATERIALS MANAGEMENT PLAN
- WRL ANTICIPATED BUILDING FOOTPRINT (APPROXIMATE)
- RIVER ELEVATION MEASUREMENT LOCATION

## MONITORING WELL LOCATIONS

**WEST RIVER LOFTS, LLC  
(FORMER MIRRO PLANT NO. 4)**  
1621 14TH STREET  
TWO RIVERS, WISCONSIN

FIGURE 1

RAMBOLL AMERICAS  
ENGINEERING SOLUTIONS, INC.  
A RAMBOLL COMPANY







# ANALYTICAL REPORT

## PREPARED FOR

Attn: Paul Lindquist  
Ramboll Americas Engineering Solutions  
234 W. Florida Street  
Fifth Floor  
Milwaukee, Wisconsin 53204

Generated 4/29/2024 6:33:24 PM

## JOB DESCRIPTION

Mirro 4 - 1690026868\_Conv GW

## JOB NUMBER

500-248725-1

# Eurofins Chicago

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Chicago Project Manager.

## Compliance Statement

The LOD and LOQ reported are adjusted by the dilution factor when a dilution factor greater than 1 is needed. Additionally, where results are indicated as being reported on a dry weight basis, the LOD and LOQ are adjusted for moisture content as well.

### Definitions of Limits

- LOD = Limit of Detection = MDL as defined by 40 CFR part 136 Appendix B
- LOQ = Limit of Quantitation = 3.33 x LOD as defined by Wisconsin
- RL = Report Limit = a concentration supported by a standard in the calibration curves

## Authorization



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4/29/2024 6:33:24 PM

Authorized for release by  
Sandie Fredrick, Senior Project Manager  
[Sandra.Fredrick@et.eurofinsus.com](mailto:Sandra.Fredrick@et.eurofinsus.com)  
(920)261-1660





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# Case Narrative

Client: Ramboll Americas Engineering Solutions  
Project: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

**Job ID: 500-248725-1**

**Eurofins Chicago**

## Job Narrative 500-248725-1

### Receipt

The samples were received on 4/10/2024 9:45 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.3° C.

### LCMS

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for the following sample: MW-105 (500-248725-5). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries. The samples were re-analyzed at dilution with IDA recoveries within control limits. Both sets of data are reported.

Method 537 (modified): The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit: MW-102 (500-248725-2). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample(s). The sample was re-analyzed with concurring results; therefore, the data have been reported.

Method 537 (modified): Results for sample MW-105 (500-248725-5) were reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits

Method 537 (modified): Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for the following sample: MW-102 (500-248725-2). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries. The sample was re-analyzed with concurring results; therefore, the data have been reported.

Method 537 (modified): The following sample exhibited matrix interferences for Perfluoropentanoic acid (PFPeA) causing elevation of the reporting limit (RL): MW-102 (500-248725-2). The RL for the affected analyte has been raised to be equal to the matrix interference and a "G" qualifier applied.

Method 537 (modified): The following samples exhibited matrix interferences for Perfluorobutanoic acid (PFBA) causing elevation of the reporting limit: MW-101 (500-248725-1). The reporting limit for the affected analyte has been raised to be equal to the matrix, and a "G" qualifier applied.

Method 537 (modified): The following sample exhibited matrix interferences for Perfluorobutanoic acid (PFBA) and Perfluoropentanoic acid (PFPeA) causing elevation of the reporting limit (RL): MW-103 (500-248725-3). The RL for the affected analyte has been raised to be equal to the matrix interference and a "G" qualifier applied.

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

### Organic Prep

Method 3535: The following sample was yellow in color and contained particulates in the bottle prior to extraction: MW-102 (500-248725-2).

Method 3535: The following samples were yellow in color prior to extraction: MW-103 (500-248725-3), MW-104 (500-248725-4) and MW-105 (500-248725-5).

Method 3535: The following samples were yellow in color after extraction/final volume: MW-102 (500-248725-2), MW-103 (500-248725-3), MW-104 (500-248725-4) and MW-105 (500-248725-5).

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

Eurofins Chicago

# Detection Summary

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

## Client Sample ID: MW-101

## Lab Sample ID: 500-248725-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoroheptanoic acid (PFHpA)	0.53	J	1.9	0.24	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	15		1.9	0.81	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	0.92	J	1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.80	J	1.9	0.54	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	42		1.9	0.51	ng/L	1		537 (modified)	Total/NA

## Client Sample ID: MW-102

## Lab Sample ID: 500-248725-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoroheptanoic acid (PFHpA)	2.7		1.8	0.23	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	8.9		1.8	0.78	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.3		1.8	0.53	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	150		1.8	0.50	ng/L	1		537 (modified)	Total/NA
8:2 FTS	0.44	J	1.8	0.42	ng/L	1		537 (modified)	Total/NA

## Client Sample ID: MW-103

## Lab Sample ID: 500-248725-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	0.97	J	1.9	0.54	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.4		1.9	0.23	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	110		1.9	0.80	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.2		1.9	0.53	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic acid (PFHpS)	1.8	J	1.9	0.18	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	160		1.9	0.51	ng/L	1		537 (modified)	Total/NA

## Client Sample ID: MW-104

## Lab Sample ID: 500-248725-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	2.4		1.9	0.83	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.4	J	1.9	0.19	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	23		1.9	0.52	ng/L	1		537 (modified)	Total/NA

## Client Sample ID: MW-105

## Lab Sample ID: 500-248725-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluoropentanoic acid (PFPeA)	30		2.0	0.50	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	9.8		2.0	0.59	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	16		2.0	0.26	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	58		2.0	0.87	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	2.7		2.0	0.28	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.93	J	2.0	0.32	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	5.9		2.0	0.20	ng/L	1		537 (modified)	Total/NA
Perfluoropentanesulfonic acid (PFPeS)	2.0		2.0	0.31	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	13		2.0	0.58	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic acid (PFHpS)	5.4		2.0	0.19	ng/L	1		537 (modified)	Total/NA
6:2 FTS	6.3		5.1	2.6	ng/L	1		537 (modified)	Total/NA
8:2 FTS	6.0		2.0	0.47	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	530		20	5.5	ng/L	10		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Chicago

# Detection Summary

Client: Ramboll Americas Engineering Solutions  
Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

**Client Sample ID: FB-01**

**Lab Sample ID: 500-248725-6**

No Detections.

**Client Sample ID: EB-01**

**Lab Sample ID: 500-248725-7**

No Detections.

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This Detection Summary does not include radiochemical test results.

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# Method Summary

Client: Ramboll Americas Engineering Solutions  
Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

Method	Method Description	Protocol	Laboratory
537 (modified)	Fluorinated Alkyl Substances	EPA	EET SAC
3535	Solid-Phase Extraction (SPE)	SW846	EET SAC

#### 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:

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

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# Sample Summary

Client: Ramboll Americas Engineering Solutions  
Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-248725-1	MW-101	Water	04/05/24 13:30	04/10/24 09:45
500-248725-2	MW-102	Water	04/05/24 14:33	04/10/24 09:45
500-248725-3	MW-103	Water	04/05/24 11:00	04/10/24 09:45
500-248725-4	MW-104	Water	04/05/24 11:46	04/10/24 09:45
500-248725-5	MW-105	Water	04/05/24 12:40	04/10/24 09:45
500-248725-6	FB-01	Water	04/05/24 14:50	04/10/24 09:45
500-248725-7	EB-01	Water	04/05/24 14:45	04/10/24 09:45

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# Client Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

**Client Sample ID: MW-101**

**Lab Sample ID: 500-248725-1**

**Date Collected: 04/05/24 13:30**

**Matrix: Water**

**Date Received: 04/10/24 09:45**

**Method: EPA 537 (modified) - Fluorinated Alkyl Substances**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<22	F1 G	22	22	ng/L		04/15/24 04:45	04/19/24 21:37	1
Perfluoropentanoic acid (PFPeA)	<0.46		1.9	0.46	ng/L		04/15/24 04:45	04/19/24 21:37	1
Perfluorohexanoic acid (PFHxA)	<0.55		1.9	0.55	ng/L		04/15/24 04:45	04/19/24 21:37	1
<b>Perfluoroheptanoic acid (PFHpA)</b>	<b>0.53</b>	<b>J</b>	1.9	0.24	ng/L		04/15/24 04:45	04/19/24 21:37	1
<b>Perfluorooctanoic acid (PFOA)</b>	<b>15</b>		1.9	0.81	ng/L		04/15/24 04:45	04/19/24 21:37	1
Perfluorononanoic acid (PFNA)	<0.26		1.9	0.26	ng/L		04/15/24 04:45	04/19/24 21:37	1
Perfluorodecanoic acid (PFDA)	<0.29		1.9	0.29	ng/L		04/15/24 04:45	04/19/24 21:37	1
Perfluoroundecanoic acid (PFUnA)	<1.0		1.9	1.0	ng/L		04/15/24 04:45	04/19/24 21:37	1
Perfluorododecanoic acid (PFDoA)	<0.52		1.9	0.52	ng/L		04/15/24 04:45	04/19/24 21:37	1
Perfluorotridecanoic acid (PFTrDA)	<1.2		1.9	1.2	ng/L		04/15/24 04:45	04/19/24 21:37	1
Perfluorotetradecanoic acid (PFTeA)	<0.69		1.9	0.69	ng/L		04/15/24 04:45	04/19/24 21:37	1
<b>Perfluorobutanesulfonic acid (PFBS)</b>	<b>0.92</b>	<b>J</b>	1.9	0.19	ng/L		04/15/24 04:45	04/19/24 21:37	1
Perfluoropentanesulfonic acid (PFPeS)	<0.28		1.9	0.28	ng/L		04/15/24 04:45	04/19/24 21:37	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>0.80</b>	<b>J</b>	1.9	0.54	ng/L		04/15/24 04:45	04/19/24 21:37	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.18		1.9	0.18	ng/L		04/15/24 04:45	04/19/24 21:37	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>42</b>		1.9	0.51	ng/L		04/15/24 04:45	04/19/24 21:37	1
Perfluorononanesulfonic acid (PFNS)	<0.35		1.9	0.35	ng/L		04/15/24 04:45	04/19/24 21:37	1
Perfluorodecanesulfonic acid (PFDS)	<0.30		1.9	0.30	ng/L		04/15/24 04:45	04/19/24 21:37	1
Perfluorododecanesulfonic acid (PFDoS)	<0.92		1.9	0.92	ng/L		04/15/24 04:45	04/19/24 21:37	1
Perfluorooctanesulfonamide (FOSA)	<0.93		1.9	0.93	ng/L		04/15/24 04:45	04/19/24 21:37	1
NEtFOSA	<0.82		1.9	0.82	ng/L		04/15/24 04:45	04/19/24 21:37	1
NMeFOSA	<0.41		1.9	0.41	ng/L		04/15/24 04:45	04/19/24 21:37	1
NMeFOSAA	<1.1		4.7	1.1	ng/L		04/15/24 04:45	04/19/24 21:37	1
NEtFOSAA	<1.2		4.7	1.2	ng/L		04/15/24 04:45	04/19/24 21:37	1
NMeFOSE	<1.3		3.8	1.3	ng/L		04/15/24 04:45	04/19/24 21:37	1
NEtFOSE	<0.81		1.9	0.81	ng/L		04/15/24 04:45	04/19/24 21:37	1
4:2 FTS	<0.23		1.9	0.23	ng/L		04/15/24 04:45	04/19/24 21:37	1
6:2 FTS	<2.4		4.7	2.4	ng/L		04/15/24 04:45	04/19/24 21:37	1
8:2 FTS	<0.44		1.9	0.44	ng/L		04/15/24 04:45	04/19/24 21:37	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.38		1.9	0.38	ng/L		04/15/24 04:45	04/19/24 21:37	1
HFPO-DA (GenX)	<1.4		3.8	1.4	ng/L		04/15/24 04:45	04/19/24 21:37	1
9CI-PF3ONS	<0.23		1.9	0.23	ng/L		04/15/24 04:45	04/19/24 21:37	1
11CI-PF3OUdS	<0.30		1.9	0.30	ng/L		04/15/24 04:45	04/19/24 21:37	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	70		25 - 150	04/15/24 04:45	04/19/24 21:37	1
13C5 PFPeA	82		25 - 150	04/15/24 04:45	04/19/24 21:37	1
13C2 PFHxA	91		25 - 150	04/15/24 04:45	04/19/24 21:37	1
13C4 PFHpA	94		25 - 150	04/15/24 04:45	04/19/24 21:37	1
13C4 PFOA	92		25 - 150	04/15/24 04:45	04/19/24 21:37	1
13C5 PFNA	96		25 - 150	04/15/24 04:45	04/19/24 21:37	1
13C2 PFDA	96		25 - 150	04/15/24 04:45	04/19/24 21:37	1
13C2 PFUnA	87		25 - 150	04/15/24 04:45	04/19/24 21:37	1
13C2 PFDoA	84		25 - 150	04/15/24 04:45	04/19/24 21:37	1
13C2 PFTeDA	81		25 - 150	04/15/24 04:45	04/19/24 21:37	1

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# Client Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

**Client Sample ID: MW-101**

**Lab Sample ID: 500-248725-1**

**Date Collected: 04/05/24 13:30**

**Matrix: Water**

**Date Received: 04/10/24 09:45**

**Method: EPA 537 (modified) - Fluorinated Alkyl Substances (Continued)**

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C3 PFBS	88		25 - 150	04/15/24 04:45	04/19/24 21:37	1
18O2 PFHxS	89		25 - 150	04/15/24 04:45	04/19/24 21:37	1
13C4 PFOS	87		25 - 150	04/15/24 04:45	04/19/24 21:37	1
13C8 FOSA	93		10 - 150	04/15/24 04:45	04/19/24 21:37	1
d3-NMeFOSAA	78		25 - 150	04/15/24 04:45	04/19/24 21:37	1
d5-NEtFOSAA	94		25 - 150	04/15/24 04:45	04/19/24 21:37	1
d-N-MeFOSA-M	80		10 - 150	04/15/24 04:45	04/19/24 21:37	1
d-N-EtFOSA-M	80		10 - 150	04/15/24 04:45	04/19/24 21:37	1
d7-N-MeFOSE-M	88		10 - 150	04/15/24 04:45	04/19/24 21:37	1
d9-N-EtFOSE-M	86		10 - 150	04/15/24 04:45	04/19/24 21:37	1
M2-4:2 FTS	103		25 - 150	04/15/24 04:45	04/19/24 21:37	1
M2-6:2 FTS	108		25 - 150	04/15/24 04:45	04/19/24 21:37	1
M2-8:2 FTS	105		25 - 150	04/15/24 04:45	04/19/24 21:37	1
13C3 HFPO-DA	82		25 - 150	04/15/24 04:45	04/19/24 21:37	1
13C2 10:2 FTS	87		25 - 150	04/15/24 04:45	04/19/24 21:37	1

# Client Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

**Client Sample ID: MW-102**

**Lab Sample ID: 500-248725-2**

**Date Collected: 04/05/24 14:33**

**Matrix: Water**

**Date Received: 04/10/24 09:45**

**Method: EPA 537 (modified) - Fluorinated Alkyl Substances**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<2.2		4.6	2.2	ng/L		04/15/24 04:45	04/19/24 22:07	1
Perfluoropentanoic acid (PFPeA)	<1500	G	1500	1500	ng/L		04/15/24 04:45	04/19/24 22:07	1
Perfluorohexanoic acid (PFHxA)	<0.53		1.8	0.53	ng/L		04/15/24 04:45	04/19/24 22:07	1
<b>Perfluoroheptanoic acid (PFHpA)</b>	<b>2.7</b>		1.8	0.23	ng/L		04/15/24 04:45	04/19/24 22:07	1
<b>Perfluorooctanoic acid (PFOA)</b>	<b>8.9</b>		1.8	0.78	ng/L		04/15/24 04:45	04/19/24 22:07	1
Perfluorononanoic acid (PFNA)	<0.25		1.8	0.25	ng/L		04/15/24 04:45	04/19/24 22:07	1
Perfluorodecanoic acid (PFDA)	<0.29		1.8	0.29	ng/L		04/15/24 04:45	04/19/24 22:07	1
Perfluoroundecanoic acid (PFUnA)	<1.0		1.8	1.0	ng/L		04/15/24 04:45	04/19/24 22:07	1
Perfluorododecanoic acid (PFDoA)	<0.51		1.8	0.51	ng/L		04/15/24 04:45	04/19/24 22:07	1
Perfluorotridecanoic acid (PFTTrDA)	<1.2		1.8	1.2	ng/L		04/15/24 04:45	04/19/24 22:07	1
Perfluorotetradecanoic acid (PFTeA)	<0.67		1.8	0.67	ng/L		04/15/24 04:45	04/19/24 22:07	1
Perfluorobutanesulfonic acid (PFBS)	<0.18		1.8	0.18	ng/L		04/15/24 04:45	04/19/24 22:07	1
Perfluoropentanesulfonic acid (PFPeS)	<0.28		1.8	0.28	ng/L		04/15/24 04:45	04/19/24 22:07	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>2.3</b>		1.8	0.53	ng/L		04/15/24 04:45	04/19/24 22:07	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.18		1.8	0.18	ng/L		04/15/24 04:45	04/19/24 22:07	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>150</b>		1.8	0.50	ng/L		04/15/24 04:45	04/19/24 22:07	1
Perfluorononanesulfonic acid (PFNS)	<0.34		1.8	0.34	ng/L		04/15/24 04:45	04/19/24 22:07	1
Perfluorodecanesulfonic acid (PFDS)	<0.29		1.8	0.29	ng/L		04/15/24 04:45	04/19/24 22:07	1
Perfluorododecanesulfonic acid (PFDoS)	<0.89		1.8	0.89	ng/L		04/15/24 04:45	04/19/24 22:07	1
Perfluorooctanesulfonamide (FOSA)	<0.90		1.8	0.90	ng/L		04/15/24 04:45	04/19/24 22:07	1
NEtFOSA	<0.80		1.8	0.80	ng/L		04/15/24 04:45	04/19/24 22:07	1
NMeFOSA	<0.40		1.8	0.40	ng/L		04/15/24 04:45	04/19/24 22:07	1
NMeFOSAA	<1.1		4.6	1.1	ng/L		04/15/24 04:45	04/19/24 22:07	1
NEtFOSAA	<1.2		4.6	1.2	ng/L		04/15/24 04:45	04/19/24 22:07	1
NMeFOSE	<1.3		3.7	1.3	ng/L		04/15/24 04:45	04/19/24 22:07	1
NEtFOSE	<0.78		1.8	0.78	ng/L		04/15/24 04:45	04/19/24 22:07	1
4:2 FTS	<0.22		1.8	0.22	ng/L		04/15/24 04:45	04/19/24 22:07	1
6:2 FTS	<2.3		4.6	2.3	ng/L		04/15/24 04:45	04/19/24 22:07	1
<b>8:2 FTS</b>	<b>0.44</b>	<b>J</b>	1.8	0.42	ng/L		04/15/24 04:45	04/19/24 22:07	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.37		1.8	0.37	ng/L		04/15/24 04:45	04/19/24 22:07	1
HFPO-DA (GenX)	<1.4		3.7	1.4	ng/L		04/15/24 04:45	04/19/24 22:07	1
9Cl-PF3ONS	<0.22		1.8	0.22	ng/L		04/15/24 04:45	04/19/24 22:07	1
11Cl-PF3OUdS	<0.29		1.8	0.29	ng/L		04/15/24 04:45	04/19/24 22:07	1
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C4 PFBA	15	*5-	25 - 150				04/15/24 04:45	04/19/24 22:07	1
13C5 PFPeA	36		25 - 150				04/15/24 04:45	04/19/24 22:07	1
13C2 PFHxA	74		25 - 150				04/15/24 04:45	04/19/24 22:07	1
13C4 PFHpA	83		25 - 150				04/15/24 04:45	04/19/24 22:07	1
13C4 PFOA	94		25 - 150				04/15/24 04:45	04/19/24 22:07	1
13C5 PFNA	98		25 - 150				04/15/24 04:45	04/19/24 22:07	1
13C2 PFDA	107		25 - 150				04/15/24 04:45	04/19/24 22:07	1
13C2 PFUnA	104		25 - 150				04/15/24 04:45	04/19/24 22:07	1
13C2 PFDoA	96		25 - 150				04/15/24 04:45	04/19/24 22:07	1
13C2 PFTeDA	75		25 - 150				04/15/24 04:45	04/19/24 22:07	1
13C3 PFBS	81		25 - 150				04/15/24 04:45	04/19/24 22:07	1

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# Client Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

**Client Sample ID: MW-102**

**Lab Sample ID: 500-248725-2**

**Date Collected: 04/05/24 14:33**

**Matrix: Water**

**Date Received: 04/10/24 09:45**

**Method: EPA 537 (modified) - Fluorinated Alkyl Substances (Continued)**

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
18O2 PFHxS	94		25 - 150	04/15/24 04:45	04/19/24 22:07	1
13C4 PFOS	94		25 - 150	04/15/24 04:45	04/19/24 22:07	1
13C8 FOSA	92		10 - 150	04/15/24 04:45	04/19/24 22:07	1
d3-NMeFOSAA	98		25 - 150	04/15/24 04:45	04/19/24 22:07	1
d5-NEtFOSAA	107		25 - 150	04/15/24 04:45	04/19/24 22:07	1
d-N-MeFOSA-M	76		10 - 150	04/15/24 04:45	04/19/24 22:07	1
d-N-EtFOSA-M	79		10 - 150	04/15/24 04:45	04/19/24 22:07	1
d7-N-MeFOSE-M	88		10 - 150	04/15/24 04:45	04/19/24 22:07	1
d9-N-EtFOSE-M	86		10 - 150	04/15/24 04:45	04/19/24 22:07	1
M2-4:2 FTS	120		25 - 150	04/15/24 04:45	04/19/24 22:07	1
M2-6:2 FTS	129		25 - 150	04/15/24 04:45	04/19/24 22:07	1
M2-8:2 FTS	158	*5+	25 - 150	04/15/24 04:45	04/19/24 22:07	1
13C3 HFPO-DA	80		25 - 150	04/15/24 04:45	04/19/24 22:07	1
13C2 10:2 FTS	124		25 - 150	04/15/24 04:45	04/19/24 22:07	1

# Client Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

**Client Sample ID: MW-103**

**Lab Sample ID: 500-248725-3**

**Date Collected: 04/05/24 11:00**

**Matrix: Water**

**Date Received: 04/10/24 09:45**

**Method: EPA 537 (modified) - Fluorinated Alkyl Substances**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<28	G	28	28	ng/L		04/15/24 04:45	04/19/24 22:17	1
Perfluoropentanoic acid (PFPeA)	<36	G	36	36	ng/L		04/15/24 04:45	04/19/24 22:17	1
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>0.97</b>	<b>J</b>	1.9	0.54	ng/L		04/15/24 04:45	04/19/24 22:17	1
<b>Perfluoroheptanoic acid (PFHpA)</b>	<b>2.4</b>		1.9	0.23	ng/L		04/15/24 04:45	04/19/24 22:17	1
<b>Perfluorooctanoic acid (PFOA)</b>	<b>110</b>		1.9	0.80	ng/L		04/15/24 04:45	04/19/24 22:17	1
Perfluorononanoic acid (PFNA)	<0.25		1.9	0.25	ng/L		04/15/24 04:45	04/19/24 22:17	1
Perfluorodecanoic acid (PFDA)	<0.29		1.9	0.29	ng/L		04/15/24 04:45	04/19/24 22:17	1
Perfluoroundecanoic acid (PFUnA)	<1.0		1.9	1.0	ng/L		04/15/24 04:45	04/19/24 22:17	1
Perfluorododecanoic acid (PFDoA)	<0.51		1.9	0.51	ng/L		04/15/24 04:45	04/19/24 22:17	1
Perfluorotridecanoic acid (PFTTrDA)	<1.2		1.9	1.2	ng/L		04/15/24 04:45	04/19/24 22:17	1
Perfluorotetradecanoic acid (PFTeA)	<0.68		1.9	0.68	ng/L		04/15/24 04:45	04/19/24 22:17	1
Perfluorobutanesulfonic acid (PFBS)	<0.19		1.9	0.19	ng/L		04/15/24 04:45	04/19/24 22:17	1
Perfluoropentanesulfonic acid (PFPeS)	<0.28		1.9	0.28	ng/L		04/15/24 04:45	04/19/24 22:17	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>2.2</b>		1.9	0.53	ng/L		04/15/24 04:45	04/19/24 22:17	1
<b>Perfluoroheptanesulfonic acid (PFHpS)</b>	<b>1.8</b>	<b>J</b>	1.9	0.18	ng/L		04/15/24 04:45	04/19/24 22:17	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>160</b>		1.9	0.51	ng/L		04/15/24 04:45	04/19/24 22:17	1
Perfluorononanesulfonic acid (PFNS)	<0.35		1.9	0.35	ng/L		04/15/24 04:45	04/19/24 22:17	1
Perfluorodecanesulfonic acid (PFDS)	<0.30		1.9	0.30	ng/L		04/15/24 04:45	04/19/24 22:17	1
Perfluorododecanesulfonic acid (PFDoS)	<0.91		1.9	0.91	ng/L		04/15/24 04:45	04/19/24 22:17	1
Perfluorooctanesulfonamide (FOSA)	<0.92		1.9	0.92	ng/L		04/15/24 04:45	04/19/24 22:17	1
NEtFOSA	<0.81		1.9	0.81	ng/L		04/15/24 04:45	04/19/24 22:17	1
NMeFOSA	<0.40		1.9	0.40	ng/L		04/15/24 04:45	04/19/24 22:17	1
NMeFOSAA	<1.1		4.7	1.1	ng/L		04/15/24 04:45	04/19/24 22:17	1
NEtFOSAA	<1.2		4.7	1.2	ng/L		04/15/24 04:45	04/19/24 22:17	1
NMeFOSE	<1.3		3.7	1.3	ng/L		04/15/24 04:45	04/19/24 22:17	1
NEtFOSE	<0.80		1.9	0.80	ng/L		04/15/24 04:45	04/19/24 22:17	1
4:2 FTS	<0.22		1.9	0.22	ng/L		04/15/24 04:45	04/19/24 22:17	1
6:2 FTS	<2.3		4.7	2.3	ng/L		04/15/24 04:45	04/19/24 22:17	1
8:2 FTS	<0.43		1.9	0.43	ng/L		04/15/24 04:45	04/19/24 22:17	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.37		1.9	0.37	ng/L		04/15/24 04:45	04/19/24 22:17	1
HFPO-DA (GenX)	<1.4		3.7	1.4	ng/L		04/15/24 04:45	04/19/24 22:17	1
9Cl-PF3ONS	<0.22		1.9	0.22	ng/L		04/15/24 04:45	04/19/24 22:17	1
11Cl-PF3OUdS	<0.30		1.9	0.30	ng/L		04/15/24 04:45	04/19/24 22:17	1
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C4 PFBA	48		25 - 150				04/15/24 04:45	04/19/24 22:17	1
13C5 PFPeA	67		25 - 150				04/15/24 04:45	04/19/24 22:17	1
13C2 PFHxA	86		25 - 150				04/15/24 04:45	04/19/24 22:17	1
13C4 PFHpA	95		25 - 150				04/15/24 04:45	04/19/24 22:17	1
13C4 PFOA	92		25 - 150				04/15/24 04:45	04/19/24 22:17	1
13C5 PFNA	94		25 - 150				04/15/24 04:45	04/19/24 22:17	1
13C2 PFDA	97		25 - 150				04/15/24 04:45	04/19/24 22:17	1
13C2 PFUnA	88		25 - 150				04/15/24 04:45	04/19/24 22:17	1
13C2 PFDoA	83		25 - 150				04/15/24 04:45	04/19/24 22:17	1
13C2 PFTeDA	76		25 - 150				04/15/24 04:45	04/19/24 22:17	1
13C3 PFBS	82		25 - 150				04/15/24 04:45	04/19/24 22:17	1

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# Client Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

**Client Sample ID: MW-103**

**Lab Sample ID: 500-248725-3**

**Date Collected: 04/05/24 11:00**

**Matrix: Water**

**Date Received: 04/10/24 09:45**

**Method: EPA 537 (modified) - Fluorinated Alkyl Substances (Continued)**

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
18O2 PFHxS	87		25 - 150	04/15/24 04:45	04/19/24 22:17	1
13C4 PFOS	85		25 - 150	04/15/24 04:45	04/19/24 22:17	1
13C8 FOSA	93		10 - 150	04/15/24 04:45	04/19/24 22:17	1
d3-NMeFOSAA	81		25 - 150	04/15/24 04:45	04/19/24 22:17	1
d5-NEtFOSAA	83		25 - 150	04/15/24 04:45	04/19/24 22:17	1
d-N-MeFOSA-M	79		10 - 150	04/15/24 04:45	04/19/24 22:17	1
d-N-EtFOSA-M	78		10 - 150	04/15/24 04:45	04/19/24 22:17	1
d7-N-MeFOSE-M	79		10 - 150	04/15/24 04:45	04/19/24 22:17	1
d9-N-EtFOSE-M	77		10 - 150	04/15/24 04:45	04/19/24 22:17	1
M2-4:2 FTS	86		25 - 150	04/15/24 04:45	04/19/24 22:17	1
M2-6:2 FTS	95		25 - 150	04/15/24 04:45	04/19/24 22:17	1
M2-8:2 FTS	97		25 - 150	04/15/24 04:45	04/19/24 22:17	1
13C3 HFPO-DA	82		25 - 150	04/15/24 04:45	04/19/24 22:17	1
13C2 10:2 FTS	90		25 - 150	04/15/24 04:45	04/19/24 22:17	1



# Client Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

**Client Sample ID: MW-104**

**Lab Sample ID: 500-248725-4**

**Date Collected: 04/05/24 11:46**

**Matrix: Water**

**Date Received: 04/10/24 09:45**

**Method: EPA 537 (modified) - Fluorinated Alkyl Substances**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<2.3		4.9	2.3	ng/L		04/15/24 04:45	04/19/24 22:27	1
Perfluoropentanoic acid (PFPeA)	<0.48		1.9	0.48	ng/L		04/15/24 04:45	04/19/24 22:27	1
Perfluorohexanoic acid (PFHxA)	<0.56		1.9	0.56	ng/L		04/15/24 04:45	04/19/24 22:27	1
Perfluoroheptanoic acid (PFHpA)	<0.24		1.9	0.24	ng/L		04/15/24 04:45	04/19/24 22:27	1
<b>Perfluorooctanoic acid (PFOA)</b>	<b>2.4</b>		1.9	0.83	ng/L		04/15/24 04:45	04/19/24 22:27	1
Perfluorononanoic acid (PFNA)	<0.26		1.9	0.26	ng/L		04/15/24 04:45	04/19/24 22:27	1
Perfluorodecanoic acid (PFDA)	<0.30		1.9	0.30	ng/L		04/15/24 04:45	04/19/24 22:27	1
Perfluoroundecanoic acid (PFUnA)	<1.1		1.9	1.1	ng/L		04/15/24 04:45	04/19/24 22:27	1
Perfluorododecanoic acid (PFDoA)	<0.53		1.9	0.53	ng/L		04/15/24 04:45	04/19/24 22:27	1
Perfluorotridecanoic acid (PFTTrDA)	<1.3		1.9	1.3	ng/L		04/15/24 04:45	04/19/24 22:27	1
Perfluorotetradecanoic acid (PFTeA)	<0.71		1.9	0.71	ng/L		04/15/24 04:45	04/19/24 22:27	1
<b>Perfluorobutanesulfonic acid (PFBS)</b>	<b>1.4 J</b>		1.9	0.19	ng/L		04/15/24 04:45	04/19/24 22:27	1
Perfluoropentanesulfonic acid (PFPeS)	<0.29		1.9	0.29	ng/L		04/15/24 04:45	04/19/24 22:27	1
Perfluorohexanesulfonic acid (PFHxS)	<0.55		1.9	0.55	ng/L		04/15/24 04:45	04/19/24 22:27	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.18		1.9	0.18	ng/L		04/15/24 04:45	04/19/24 22:27	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>23</b>		1.9	0.52	ng/L		04/15/24 04:45	04/19/24 22:27	1
Perfluorononanesulfonic acid (PFNS)	<0.36		1.9	0.36	ng/L		04/15/24 04:45	04/19/24 22:27	1
Perfluorodecanesulfonic acid (PFDS)	<0.31		1.9	0.31	ng/L		04/15/24 04:45	04/19/24 22:27	1
Perfluorododecanesulfonic acid (PFDoS)	<0.94		1.9	0.94	ng/L		04/15/24 04:45	04/19/24 22:27	1
Perfluorooctanesulfonamide (FOSA)	<0.95		1.9	0.95	ng/L		04/15/24 04:45	04/19/24 22:27	1
NEtFOSA	<0.84		1.9	0.84	ng/L		04/15/24 04:45	04/19/24 22:27	1
NMeFOSA	<0.42		1.9	0.42	ng/L		04/15/24 04:45	04/19/24 22:27	1
NMeFOSAA	<1.2		4.9	1.2	ng/L		04/15/24 04:45	04/19/24 22:27	1
NEtFOSAA	<1.3		4.9	1.3	ng/L		04/15/24 04:45	04/19/24 22:27	1
NMeFOSE	<1.4		3.9	1.4	ng/L		04/15/24 04:45	04/19/24 22:27	1
NEtFOSE	<0.83		1.9	0.83	ng/L		04/15/24 04:45	04/19/24 22:27	1
4:2 FTS	<0.23		1.9	0.23	ng/L		04/15/24 04:45	04/19/24 22:27	1
6:2 FTS	<2.4		4.9	2.4	ng/L		04/15/24 04:45	04/19/24 22:27	1
8:2 FTS	<0.45		1.9	0.45	ng/L		04/15/24 04:45	04/19/24 22:27	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.39		1.9	0.39	ng/L		04/15/24 04:45	04/19/24 22:27	1
HFPO-DA (GenX)	<1.5		3.9	1.5	ng/L		04/15/24 04:45	04/19/24 22:27	1
9Cl-PF3ONS	<0.23		1.9	0.23	ng/L		04/15/24 04:45	04/19/24 22:27	1
11Cl-PF3OUdS	<0.31		1.9	0.31	ng/L		04/15/24 04:45	04/19/24 22:27	1
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C4 PFBA	67		25 - 150				04/15/24 04:45	04/19/24 22:27	1
13C5 PFPeA	81		25 - 150				04/15/24 04:45	04/19/24 22:27	1
13C2 PFHxA	93		25 - 150				04/15/24 04:45	04/19/24 22:27	1
13C4 PFHpA	92		25 - 150				04/15/24 04:45	04/19/24 22:27	1
13C4 PFOA	91		25 - 150				04/15/24 04:45	04/19/24 22:27	1
13C5 PFNA	94		25 - 150				04/15/24 04:45	04/19/24 22:27	1
13C2 PFDA	95		25 - 150				04/15/24 04:45	04/19/24 22:27	1
13C2 PFUnA	84		25 - 150				04/15/24 04:45	04/19/24 22:27	1
13C2 PFDoA	82		25 - 150				04/15/24 04:45	04/19/24 22:27	1
13C2 PFTTrDA	70		25 - 150				04/15/24 04:45	04/19/24 22:27	1
13C3 PFBS	87		25 - 150				04/15/24 04:45	04/19/24 22:27	1

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# Client Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

**Client Sample ID: MW-104**  
**Date Collected: 04/05/24 11:46**  
**Date Received: 04/10/24 09:45**

**Lab Sample ID: 500-248725-4**  
**Matrix: Water**

**Method: EPA 537 (modified) - Fluorinated Alkyl Substances (Continued)**

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
18O2 PFHxS	87		25 - 150	04/15/24 04:45	04/19/24 22:27	1
13C4 PFOS	85		25 - 150	04/15/24 04:45	04/19/24 22:27	1
13C8 FOSA	94		10 - 150	04/15/24 04:45	04/19/24 22:27	1
d3-NMeFOSAA	82		25 - 150	04/15/24 04:45	04/19/24 22:27	1
d5-NEtFOSAA	85		25 - 150	04/15/24 04:45	04/19/24 22:27	1
d-N-MeFOSA-M	76		10 - 150	04/15/24 04:45	04/19/24 22:27	1
d-N-EtFOSA-M	76		10 - 150	04/15/24 04:45	04/19/24 22:27	1
d7-N-MeFOSE-M	77		10 - 150	04/15/24 04:45	04/19/24 22:27	1
d9-N-EtFOSE-M	71		10 - 150	04/15/24 04:45	04/19/24 22:27	1
M2-4:2 FTS	86		25 - 150	04/15/24 04:45	04/19/24 22:27	1
M2-6:2 FTS	89		25 - 150	04/15/24 04:45	04/19/24 22:27	1
M2-8:2 FTS	90		25 - 150	04/15/24 04:45	04/19/24 22:27	1
13C3 HFPO-DA	85		25 - 150	04/15/24 04:45	04/19/24 22:27	1
13C2 10:2 FTS	84		25 - 150	04/15/24 04:45	04/19/24 22:27	1

# Client Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

**Client Sample ID: MW-105**

**Lab Sample ID: 500-248725-5**

Date Collected: 04/05/24 12:40

Matrix: Water

Date Received: 04/10/24 09:45

**Method: EPA 537 (modified) - Fluorinated Alkyl Substances**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<2.5		5.1	2.5	ng/L		04/15/24 04:45	04/19/24 22:57	1
<b>Perfluoropentanoic acid (PFPeA)</b>	<b>30</b>		2.0	0.50	ng/L		04/15/24 04:45	04/19/24 22:57	1
<b>Perfluorohexanoic acid (PFHxA)</b>	<b>9.8</b>		2.0	0.59	ng/L		04/15/24 04:45	04/19/24 22:57	1
<b>Perfluoroheptanoic acid (PFHpA)</b>	<b>16</b>		2.0	0.26	ng/L		04/15/24 04:45	04/19/24 22:57	1
<b>Perfluorooctanoic acid (PFOA)</b>	<b>58</b>		2.0	0.87	ng/L		04/15/24 04:45	04/19/24 22:57	1
<b>Perfluorononanoic acid (PFNA)</b>	<b>2.7</b>		2.0	0.28	ng/L		04/15/24 04:45	04/19/24 22:57	1
<b>Perfluorodecanoic acid (PFDA)</b>	<b>0.93 J</b>		2.0	0.32	ng/L		04/15/24 04:45	04/19/24 22:57	1
Perfluoroundecanoic acid (PFUnA)	<1.1		2.0	1.1	ng/L		04/15/24 04:45	04/19/24 22:57	1
Perfluorododecanoic acid (PFDoA)	<0.56		2.0	0.56	ng/L		04/15/24 04:45	04/19/24 22:57	1
Perfluorotridecanoic acid (PFTrDA)	<1.3		2.0	1.3	ng/L		04/15/24 04:45	04/19/24 22:57	1
Perfluorotetradecanoic acid (PFTeA)	<0.75		2.0	0.75	ng/L		04/15/24 04:45	04/19/24 22:57	1
<b>Perfluorobutanesulfonic acid (PFBS)</b>	<b>5.9</b>		2.0	0.20	ng/L		04/15/24 04:45	04/19/24 22:57	1
<b>Perfluoropentanesulfonic acid (PFPeS)</b>	<b>2.0</b>		2.0	0.31	ng/L		04/15/24 04:45	04/19/24 22:57	1
<b>Perfluorohexanesulfonic acid (PFHxS)</b>	<b>13</b>		2.0	0.58	ng/L		04/15/24 04:45	04/19/24 22:57	1
<b>Perfluoroheptanesulfonic acid (PFHpS)</b>	<b>5.4</b>		2.0	0.19	ng/L		04/15/24 04:45	04/19/24 22:57	1
Perfluorononanesulfonic acid (PFNS)	<0.38		2.0	0.38	ng/L		04/15/24 04:45	04/19/24 22:57	1
Perfluorodecanesulfonic acid (PFDS)	<0.33		2.0	0.33	ng/L		04/15/24 04:45	04/19/24 22:57	1
Perfluorododecanesulfonic acid (PFDoS)	<0.99		2.0	0.99	ng/L		04/15/24 04:45	04/19/24 22:57	1
Perfluorooctanesulfonamide (FOSA)	<1.0		2.0	1.0	ng/L		04/15/24 04:45	04/19/24 22:57	1
NEtFOSA	<0.89		2.0	0.89	ng/L		04/15/24 04:45	04/19/24 22:57	1
NMeFOSA	<0.44		2.0	0.44	ng/L		04/15/24 04:45	04/19/24 22:57	1
NMeFOSAA	<1.2		5.1	1.2	ng/L		04/15/24 04:45	04/19/24 22:57	1
NEtFOSAA	<1.3		5.1	1.3	ng/L		04/15/24 04:45	04/19/24 22:57	1
NMeFOSE	<1.4		4.1	1.4	ng/L		04/15/24 04:45	04/19/24 22:57	1
NEtFOSE	<0.87		2.0	0.87	ng/L		04/15/24 04:45	04/19/24 22:57	1
4:2 FTS	<0.25		2.0	0.25	ng/L		04/15/24 04:45	04/19/24 22:57	1
<b>6:2 FTS</b>	<b>6.3</b>		5.1	2.6	ng/L		04/15/24 04:45	04/19/24 22:57	1
<b>8:2 FTS</b>	<b>6.0</b>		2.0	0.47	ng/L		04/15/24 04:45	04/19/24 22:57	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.41		2.0	0.41	ng/L		04/15/24 04:45	04/19/24 22:57	1
HFPO-DA (GenX)	<1.5		4.1	1.5	ng/L		04/15/24 04:45	04/19/24 22:57	1
9Cl-PF3ONS	<0.25		2.0	0.25	ng/L		04/15/24 04:45	04/19/24 22:57	1
11Cl-PF3OUdS	<0.33		2.0	0.33	ng/L		04/15/24 04:45	04/19/24 22:57	1
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
13C4 PFBA	47		25 - 150				04/15/24 04:45	04/19/24 22:57	1
13C5 PFPeA	73		25 - 150				04/15/24 04:45	04/19/24 22:57	1
13C2 PFHxA	96		25 - 150				04/15/24 04:45	04/19/24 22:57	1
13C4 PFHpA	95		25 - 150				04/15/24 04:45	04/19/24 22:57	1
13C4 PFOA	93		25 - 150				04/15/24 04:45	04/19/24 22:57	1
13C5 PFNA	96		25 - 150				04/15/24 04:45	04/19/24 22:57	1
13C2 PFDA	102		25 - 150				04/15/24 04:45	04/19/24 22:57	1
13C2 PFUnA	97		25 - 150				04/15/24 04:45	04/19/24 22:57	1
13C2 PFDoA	96		25 - 150				04/15/24 04:45	04/19/24 22:57	1
13C2 PFTrDA	85		25 - 150				04/15/24 04:45	04/19/24 22:57	1
13C3 PFBS	92		25 - 150				04/15/24 04:45	04/19/24 22:57	1
18O2 PFHxS	94		25 - 150				04/15/24 04:45	04/19/24 22:57	1

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# Client Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

**Client Sample ID: MW-105**

**Lab Sample ID: 500-248725-5**

**Date Collected: 04/05/24 12:40**

**Matrix: Water**

**Date Received: 04/10/24 09:45**

**Method: EPA 537 (modified) - Fluorinated Alkyl Substances (Continued)**

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C4 PFOS	94		25 - 150	04/15/24 04:45	04/19/24 22:57	1
13C8 FOSA	82		10 - 150	04/15/24 04:45	04/19/24 22:57	1
d3-NMeFOSAA	80		25 - 150	04/15/24 04:45	04/19/24 22:57	1
d5-NEtFOSAA	96		25 - 150	04/15/24 04:45	04/19/24 22:57	1
d-N-MeFOSA-M	79		10 - 150	04/15/24 04:45	04/19/24 22:57	1
d-N-EtFOSA-M	81		10 - 150	04/15/24 04:45	04/19/24 22:57	1
d7-N-MeFOSE-M	85		10 - 150	04/15/24 04:45	04/19/24 22:57	1
d9-N-EtFOSE-M	89		10 - 150	04/15/24 04:45	04/19/24 22:57	1
M2-4:2 FTS	148		25 - 150	04/15/24 04:45	04/19/24 22:57	1
M2-6:2 FTS	163	*5+	25 - 150	04/15/24 04:45	04/19/24 22:57	1
M2-8:2 FTS	178	*5+	25 - 150	04/15/24 04:45	04/19/24 22:57	1
13C3 HFPO-DA	85		25 - 150	04/15/24 04:45	04/19/24 22:57	1
13C2 10:2 FTS	105		25 - 150	04/15/24 04:45	04/19/24 22:57	1

**Method: EPA 537 (modified) - Fluorinated Alkyl Substances - DL**

<i>Analyte</i>	<i>Result</i>	<i>Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>530</b>		20	5.5	ng/L		04/15/24 04:45	04/24/24 09:11	10
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>			
13C4 PFOS	88		25 - 150	04/15/24 04:45	04/24/24 09:11	10			
M2-6:2 FTS	133		25 - 150	04/15/24 04:45	04/24/24 09:11	10			
M2-8:2 FTS	134		25 - 150	04/15/24 04:45	04/24/24 09:11	10			

# Client Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

**Client Sample ID: FB-01**

**Lab Sample ID: 500-248725-6**

**Date Collected: 04/05/24 14:50**

**Matrix: Water**

**Date Received: 04/10/24 09:45**

**Method: EPA 537 (modified) - Fluorinated Alkyl Substances**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<2.3		4.7	2.3	ng/L		04/15/24 04:45	04/19/24 23:07	1
Perfluoropentanoic acid (PFPeA)	<0.47		1.9	0.47	ng/L		04/15/24 04:45	04/19/24 23:07	1
Perfluorohexanoic acid (PFHxA)	<0.55		1.9	0.55	ng/L		04/15/24 04:45	04/19/24 23:07	1
Perfluoroheptanoic acid (PFHpA)	<0.24		1.9	0.24	ng/L		04/15/24 04:45	04/19/24 23:07	1
Perfluorooctanoic acid (PFOA)	<0.81		1.9	0.81	ng/L		04/15/24 04:45	04/19/24 23:07	1
Perfluorononanoic acid (PFNA)	<0.26		1.9	0.26	ng/L		04/15/24 04:45	04/19/24 23:07	1
Perfluorodecanoic acid (PFDA)	<0.29		1.9	0.29	ng/L		04/15/24 04:45	04/19/24 23:07	1
Perfluoroundecanoic acid (PFUnA)	<1.0		1.9	1.0	ng/L		04/15/24 04:45	04/19/24 23:07	1
Perfluorododecanoic acid (PFDoA)	<0.52		1.9	0.52	ng/L		04/15/24 04:45	04/19/24 23:07	1
Perfluorotridecanoic acid (PFTrDA)	<1.2		1.9	1.2	ng/L		04/15/24 04:45	04/19/24 23:07	1
Perfluorotetradecanoic acid (PFTeA)	<0.69		1.9	0.69	ng/L		04/15/24 04:45	04/19/24 23:07	1
Perfluorobutanesulfonic acid (PFBS)	<0.19		1.9	0.19	ng/L		04/15/24 04:45	04/19/24 23:07	1
Perfluoropentanesulfonic acid (PFPeS)	<0.28		1.9	0.28	ng/L		04/15/24 04:45	04/19/24 23:07	1
Perfluorohexanesulfonic acid (PFHxS)	<0.54		1.9	0.54	ng/L		04/15/24 04:45	04/19/24 23:07	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.18		1.9	0.18	ng/L		04/15/24 04:45	04/19/24 23:07	1
Perfluorooctanesulfonic acid (PFOS)	<0.51		1.9	0.51	ng/L		04/15/24 04:45	04/19/24 23:07	1
Perfluorononanesulfonic acid (PFNS)	<0.35		1.9	0.35	ng/L		04/15/24 04:45	04/19/24 23:07	1
Perfluorodecanesulfonic acid (PFDS)	<0.30		1.9	0.30	ng/L		04/15/24 04:45	04/19/24 23:07	1
Perfluorododecanesulfonic acid (PFDoS)	<0.92		1.9	0.92	ng/L		04/15/24 04:45	04/19/24 23:07	1
Perfluorooctanesulfonamide (FOSA)	<0.93		1.9	0.93	ng/L		04/15/24 04:45	04/19/24 23:07	1
NEtFOSA	<0.83		1.9	0.83	ng/L		04/15/24 04:45	04/19/24 23:07	1
NMeFOSA	<0.41		1.9	0.41	ng/L		04/15/24 04:45	04/19/24 23:07	1
NMeFOSAA	<1.1		4.7	1.1	ng/L		04/15/24 04:45	04/19/24 23:07	1
NEtFOSAA	<1.2		4.7	1.2	ng/L		04/15/24 04:45	04/19/24 23:07	1
NMeFOSE	<1.3		3.8	1.3	ng/L		04/15/24 04:45	04/19/24 23:07	1
NEtFOSE	<0.81		1.9	0.81	ng/L		04/15/24 04:45	04/19/24 23:07	1
4:2 FTS	<0.23		1.9	0.23	ng/L		04/15/24 04:45	04/19/24 23:07	1
6:2 FTS	<2.4		4.7	2.4	ng/L		04/15/24 04:45	04/19/24 23:07	1
8:2 FTS	<0.44		1.9	0.44	ng/L		04/15/24 04:45	04/19/24 23:07	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.38		1.9	0.38	ng/L		04/15/24 04:45	04/19/24 23:07	1
HFPO-DA (GenX)	<1.4		3.8	1.4	ng/L		04/15/24 04:45	04/19/24 23:07	1
9Cl-PF3ONS	<0.23		1.9	0.23	ng/L		04/15/24 04:45	04/19/24 23:07	1
11Cl-PF3OUdS	<0.30		1.9	0.30	ng/L		04/15/24 04:45	04/19/24 23:07	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	95		25 - 150	04/15/24 04:45	04/19/24 23:07	1
13C5 PFPeA	91		25 - 150	04/15/24 04:45	04/19/24 23:07	1
13C2 PFHxA	96		25 - 150	04/15/24 04:45	04/19/24 23:07	1
13C4 PFHpA	99		25 - 150	04/15/24 04:45	04/19/24 23:07	1
13C4 PFOA	94		25 - 150	04/15/24 04:45	04/19/24 23:07	1
13C5 PFNA	97		25 - 150	04/15/24 04:45	04/19/24 23:07	1
13C2 PFDA	99		25 - 150	04/15/24 04:45	04/19/24 23:07	1
13C2 PFUnA	93		25 - 150	04/15/24 04:45	04/19/24 23:07	1
13C2 PFDoA	91		25 - 150	04/15/24 04:45	04/19/24 23:07	1
13C2 PFTeDA	90		25 - 150	04/15/24 04:45	04/19/24 23:07	1
13C3 PFBS	95		25 - 150	04/15/24 04:45	04/19/24 23:07	1
18O2 PFHxS	96		25 - 150	04/15/24 04:45	04/19/24 23:07	1

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# Client Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

**Client Sample ID: FB-01**

**Lab Sample ID: 500-248725-6**

**Date Collected: 04/05/24 14:50**

**Matrix: Water**

**Date Received: 04/10/24 09:45**

**Method: EPA 537 (modified) - Fluorinated Alkyl Substances (Continued)**

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C4 PFOS	93		25 - 150	04/15/24 04:45	04/19/24 23:07	1
13C8 FOSA	96		10 - 150	04/15/24 04:45	04/19/24 23:07	1
d3-NMeFOSAA	89		25 - 150	04/15/24 04:45	04/19/24 23:07	1
d5-NEtFOSAA	95		25 - 150	04/15/24 04:45	04/19/24 23:07	1
d-N-MeFOSA-M	87		10 - 150	04/15/24 04:45	04/19/24 23:07	1
d-N-EtFOSA-M	90		10 - 150	04/15/24 04:45	04/19/24 23:07	1
d7-N-MeFOSE-M	93		10 - 150	04/15/24 04:45	04/19/24 23:07	1
d9-N-EtFOSE-M	89		10 - 150	04/15/24 04:45	04/19/24 23:07	1
M2-4:2 FTS	100		25 - 150	04/15/24 04:45	04/19/24 23:07	1
M2-6:2 FTS	94		25 - 150	04/15/24 04:45	04/19/24 23:07	1
M2-8:2 FTS	99		25 - 150	04/15/24 04:45	04/19/24 23:07	1
13C3 HFPO-DA	88		25 - 150	04/15/24 04:45	04/19/24 23:07	1
13C2 10:2 FTS	93		25 - 150	04/15/24 04:45	04/19/24 23:07	1



# Client Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

**Client Sample ID: EB-01**  
**Date Collected: 04/05/24 14:45**  
**Date Received: 04/10/24 09:45**

**Lab Sample ID: 500-248725-7**  
**Matrix: Water**

**Method: EPA 537 (modified) - Fluorinated Alkyl Substances**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	<2.2		4.6	2.2	ng/L		04/15/24 04:45	04/19/24 23:17	1
Perfluoropentanoic acid (PFPeA)	<0.45		1.8	0.45	ng/L		04/15/24 04:45	04/19/24 23:17	1
Perfluorohexanoic acid (PFHxA)	<0.53		1.8	0.53	ng/L		04/15/24 04:45	04/19/24 23:17	1
Perfluoroheptanoic acid (PFHpA)	<0.23		1.8	0.23	ng/L		04/15/24 04:45	04/19/24 23:17	1
Perfluorooctanoic acid (PFOA)	<0.78		1.8	0.78	ng/L		04/15/24 04:45	04/19/24 23:17	1
Perfluorononanoic acid (PFNA)	<0.25		1.8	0.25	ng/L		04/15/24 04:45	04/19/24 23:17	1
Perfluorodecanoic acid (PFDA)	<0.28		1.8	0.28	ng/L		04/15/24 04:45	04/19/24 23:17	1
Perfluoroundecanoic acid (PFUnA)	<1.0		1.8	1.0	ng/L		04/15/24 04:45	04/19/24 23:17	1
Perfluorododecanoic acid (PFDoA)	<0.50		1.8	0.50	ng/L		04/15/24 04:45	04/19/24 23:17	1
Perfluorotridecanoic acid (PFTrDA)	<1.2		1.8	1.2	ng/L		04/15/24 04:45	04/19/24 23:17	1
Perfluorotetradecanoic acid (PFTeA)	<0.67		1.8	0.67	ng/L		04/15/24 04:45	04/19/24 23:17	1
Perfluorobutanesulfonic acid (PFBS)	<0.18		1.8	0.18	ng/L		04/15/24 04:45	04/19/24 23:17	1
Perfluoropentanesulfonic acid (PFPeS)	<0.27		1.8	0.27	ng/L		04/15/24 04:45	04/19/24 23:17	1
Perfluorohexanesulfonic acid (PFHxS)	<0.52		1.8	0.52	ng/L		04/15/24 04:45	04/19/24 23:17	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.17		1.8	0.17	ng/L		04/15/24 04:45	04/19/24 23:17	1
Perfluorooctanesulfonic acid (PFOS)	<0.49		1.8	0.49	ng/L		04/15/24 04:45	04/19/24 23:17	1
Perfluorononanesulfonic acid (PFNS)	<0.34		1.8	0.34	ng/L		04/15/24 04:45	04/19/24 23:17	1
Perfluorodecanesulfonic acid (PFDS)	<0.29		1.8	0.29	ng/L		04/15/24 04:45	04/19/24 23:17	1
Perfluorododecanesulfonic acid (PFDoS)	<0.88		1.8	0.88	ng/L		04/15/24 04:45	04/19/24 23:17	1
Perfluorooctanesulfonamide (FOSA)	<0.89		1.8	0.89	ng/L		04/15/24 04:45	04/19/24 23:17	1
NEtFOSA	<0.79		1.8	0.79	ng/L		04/15/24 04:45	04/19/24 23:17	1
NMeFOSA	<0.39		1.8	0.39	ng/L		04/15/24 04:45	04/19/24 23:17	1
NMeFOSAA	<1.1		4.6	1.1	ng/L		04/15/24 04:45	04/19/24 23:17	1
NEtFOSAA	<1.2		4.6	1.2	ng/L		04/15/24 04:45	04/19/24 23:17	1
NMeFOSE	<1.3		3.6	1.3	ng/L		04/15/24 04:45	04/19/24 23:17	1
NEtFOSE	<0.78		1.8	0.78	ng/L		04/15/24 04:45	04/19/24 23:17	1
4:2 FTS	<0.22		1.8	0.22	ng/L		04/15/24 04:45	04/19/24 23:17	1
6:2 FTS	<2.3		4.6	2.3	ng/L		04/15/24 04:45	04/19/24 23:17	1
8:2 FTS	<0.42		1.8	0.42	ng/L		04/15/24 04:45	04/19/24 23:17	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.36		1.8	0.36	ng/L		04/15/24 04:45	04/19/24 23:17	1
HFPO-DA (GenX)	<1.4		3.6	1.4	ng/L		04/15/24 04:45	04/19/24 23:17	1
9Cl-PF3ONS	<0.22		1.8	0.22	ng/L		04/15/24 04:45	04/19/24 23:17	1
11Cl-PF3OUdS	<0.29		1.8	0.29	ng/L		04/15/24 04:45	04/19/24 23:17	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	98		25 - 150	04/15/24 04:45	04/19/24 23:17	1
13C5 PFPeA	94		25 - 150	04/15/24 04:45	04/19/24 23:17	1
13C2 PFHxA	95		25 - 150	04/15/24 04:45	04/19/24 23:17	1
13C4 PFHpA	97		25 - 150	04/15/24 04:45	04/19/24 23:17	1
13C4 PFOA	97		25 - 150	04/15/24 04:45	04/19/24 23:17	1
13C5 PFNA	97		25 - 150	04/15/24 04:45	04/19/24 23:17	1
13C2 PFDA	98		25 - 150	04/15/24 04:45	04/19/24 23:17	1
13C2 PFUnA	93		25 - 150	04/15/24 04:45	04/19/24 23:17	1
13C2 PFDoA	94		25 - 150	04/15/24 04:45	04/19/24 23:17	1
13C2 PFTeDA	85		25 - 150	04/15/24 04:45	04/19/24 23:17	1
13C3 PFBS	96		25 - 150	04/15/24 04:45	04/19/24 23:17	1
18O2 PFHxS	95		25 - 150	04/15/24 04:45	04/19/24 23:17	1

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# Client Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

**Client Sample ID: EB-01**

**Lab Sample ID: 500-248725-7**

**Date Collected: 04/05/24 14:45**

**Matrix: Water**

**Date Received: 04/10/24 09:45**

**Method: EPA 537 (modified) - Fluorinated Alkyl Substances (Continued)**

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C4 PFOS	95		25 - 150	04/15/24 04:45	04/19/24 23:17	1
13C8 FOSA	94		10 - 150	04/15/24 04:45	04/19/24 23:17	1
d3-NMeFOSAA	89		25 - 150	04/15/24 04:45	04/19/24 23:17	1
d5-NEtFOSAA	95		25 - 150	04/15/24 04:45	04/19/24 23:17	1
d-N-MeFOSA-M	76		10 - 150	04/15/24 04:45	04/19/24 23:17	1
d-N-EtFOSA-M	85		10 - 150	04/15/24 04:45	04/19/24 23:17	1
d7-N-MeFOSE-M	89		10 - 150	04/15/24 04:45	04/19/24 23:17	1
d9-N-EtFOSE-M	85		10 - 150	04/15/24 04:45	04/19/24 23:17	1
M2-4:2 FTS	104		25 - 150	04/15/24 04:45	04/19/24 23:17	1
M2-6:2 FTS	96		25 - 150	04/15/24 04:45	04/19/24 23:17	1
M2-8:2 FTS	98		25 - 150	04/15/24 04:45	04/19/24 23:17	1
13C3 HFPO-DA	89		25 - 150	04/15/24 04:45	04/19/24 23:17	1
13C2 10:2 FTS	101		25 - 150	04/15/24 04:45	04/19/24 23:17	1



# Definitions/Glossary

Client: Ramboll Americas Engineering Solutions  
Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

## Qualifiers

### LCMS

Qualifier	Qualifier Description
*5-	Isotope dilution analyte is outside acceptance limits, low biased.
*5+	Isotope dilution analyte is outside acceptance limits, high biased.
F1	MS and/or MSD recovery exceeds control limits.
G	The reported quantitation limit has been raised due to an exhibited elevated noise or matrix interference
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.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
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

# QC Association Summary

Client: Ramboll Americas Engineering Solutions  
Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

## LCMS

### Prep Batch: 754592

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-248725-1	MW-101	Total/NA	Water	3535	
500-248725-2	MW-102	Total/NA	Water	3535	
500-248725-3	MW-103	Total/NA	Water	3535	
500-248725-4	MW-104	Total/NA	Water	3535	
500-248725-5	MW-105	Total/NA	Water	3535	
500-248725-5 - DL	MW-105	Total/NA	Water	3535	
500-248725-6	FB-01	Total/NA	Water	3535	
500-248725-7	EB-01	Total/NA	Water	3535	
MB 320-754592/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-754592/3-A	Lab Control Sample	Total/NA	Water	3535	
LLCS 320-754592/2-A	Lab Control Sample	Total/NA	Water	3535	
500-248725-1 MS	MW-101	Total/NA	Water	3535	
500-248725-1 MSD	MW-101	Total/NA	Water	3535	

### Analysis Batch: 756330

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-248725-1	MW-101	Total/NA	Water	537 (modified)	754592
500-248725-2	MW-102	Total/NA	Water	537 (modified)	754592
500-248725-3	MW-103	Total/NA	Water	537 (modified)	754592
500-248725-4	MW-104	Total/NA	Water	537 (modified)	754592
500-248725-5	MW-105	Total/NA	Water	537 (modified)	754592
500-248725-6	FB-01	Total/NA	Water	537 (modified)	754592
500-248725-7	EB-01	Total/NA	Water	537 (modified)	754592
MB 320-754592/1-A	Method Blank	Total/NA	Water	537 (modified)	754592
LCS 320-754592/3-A	Lab Control Sample	Total/NA	Water	537 (modified)	754592
LLCS 320-754592/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	754592
500-248725-1 MS	MW-101	Total/NA	Water	537 (modified)	754592
500-248725-1 MSD	MW-101	Total/NA	Water	537 (modified)	754592

### Analysis Batch: 756910

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-248725-5 - DL	MW-105	Total/NA	Water	537 (modified)	754592

# QC Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

## Method: 537 (modified) - Fluorinated Alkyl Substances

**Lab Sample ID: MB 320-754592/1-A**  
**Matrix: Water**  
**Analysis Batch: 756330**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 754592**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorobutanoic acid (PFBA)	<2.4		5.0	2.4	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluoropentanoic acid (PFPeA)	<0.49		2.0	0.49	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluorohexanoic acid (PFHxA)	<0.58		2.0	0.58	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluoroheptanoic acid (PFHpA)	<0.25		2.0	0.25	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluorooctanoic acid (PFOA)	<0.85		2.0	0.85	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluorononanoic acid (PFNA)	<0.27		2.0	0.27	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	0.31	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluoroundecanoic acid (PFUnA)	<1.1		2.0	1.1	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluorododecanoic acid (PFDoA)	<0.55		2.0	0.55	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluorotridecanoic acid (PFTrDA)	<1.3		2.0	1.3	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluorotetradecanoic acid (PFTeA)	<0.73		2.0	0.73	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		2.0	0.20	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluoropentanesulfonic acid (PFPeS)	<0.30		2.0	0.30	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluorohexanesulfonic acid (PFHxS)	<0.57		2.0	0.57	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.19		2.0	0.19	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluorooctanesulfonic acid (PFOS)	<0.54		2.0	0.54	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluorononanesulfonic acid (PFNS)	<0.37		2.0	0.37	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluorodecanesulfonic acid (PFDS)	<0.32		2.0	0.32	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluorododecanesulfonic acid (PFDoS)	<0.97		2.0	0.97	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluorooctanesulfonamide (FOSA)	<0.98		2.0	0.98	ng/L		04/15/24 04:45	04/19/24 20:57	1
NEtFOSA	<0.87		2.0	0.87	ng/L		04/15/24 04:45	04/19/24 20:57	1
NMeFOSA	<0.43		2.0	0.43	ng/L		04/15/24 04:45	04/19/24 20:57	1
NMeFOSAA	<1.2		5.0	1.2	ng/L		04/15/24 04:45	04/19/24 20:57	1
NEtFOSAA	<1.3		5.0	1.3	ng/L		04/15/24 04:45	04/19/24 20:57	1
NMeFOSE	<1.4		4.0	1.4	ng/L		04/15/24 04:45	04/19/24 20:57	1
NEtFOSE	<0.85		2.0	0.85	ng/L		04/15/24 04:45	04/19/24 20:57	1
4:2 FTS	<0.24		2.0	0.24	ng/L		04/15/24 04:45	04/19/24 20:57	1
6:2 FTS	<2.5		5.0	2.5	ng/L		04/15/24 04:45	04/19/24 20:57	1
8:2 FTS	<0.46		2.0	0.46	ng/L		04/15/24 04:45	04/19/24 20:57	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.40		2.0	0.40	ng/L		04/15/24 04:45	04/19/24 20:57	1
HFPO-DA (GenX)	<1.5		4.0	1.5	ng/L		04/15/24 04:45	04/19/24 20:57	1
9Cl-PF3ONS	<0.24		2.0	0.24	ng/L		04/15/24 04:45	04/19/24 20:57	1
11Cl-PF3OUdS	<0.32		2.0	0.32	ng/L		04/15/24 04:45	04/19/24 20:57	1

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C4 PFBA	92		25 - 150	04/15/24 04:45	04/19/24 20:57	1
13C5 PFPeA	93		25 - 150	04/15/24 04:45	04/19/24 20:57	1
13C2 PFHxA	86		25 - 150	04/15/24 04:45	04/19/24 20:57	1
13C4 PFHpA	93		25 - 150	04/15/24 04:45	04/19/24 20:57	1
13C4 PFOA	92		25 - 150	04/15/24 04:45	04/19/24 20:57	1
13C5 PFNA	94		25 - 150	04/15/24 04:45	04/19/24 20:57	1
13C2 PFDA	101		25 - 150	04/15/24 04:45	04/19/24 20:57	1
13C2 PFUnA	92		25 - 150	04/15/24 04:45	04/19/24 20:57	1
13C2 PFDoA	91		25 - 150	04/15/24 04:45	04/19/24 20:57	1
13C2 PFTeDA	92		25 - 150	04/15/24 04:45	04/19/24 20:57	1

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# QC Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: MB 320-754592/1-A**  
**Matrix: Water**  
**Analysis Batch: 756330**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 754592**

Isotope Dilution	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C3 PFBS	94		25 - 150	04/15/24 04:45	04/19/24 20:57	1
18O2 PFHxS	95		25 - 150	04/15/24 04:45	04/19/24 20:57	1
13C4 PFOS	95		25 - 150	04/15/24 04:45	04/19/24 20:57	1
13C8 FOSA	96		10 - 150	04/15/24 04:45	04/19/24 20:57	1
d3-NMeFOSAA	93		25 - 150	04/15/24 04:45	04/19/24 20:57	1
d5-NEtFOSAA	98		25 - 150	04/15/24 04:45	04/19/24 20:57	1
d-N-MeFOSA-M	79		10 - 150	04/15/24 04:45	04/19/24 20:57	1
d-N-EtFOSA-M	87		10 - 150	04/15/24 04:45	04/19/24 20:57	1
d7-N-MeFOSE-M	90		10 - 150	04/15/24 04:45	04/19/24 20:57	1
d9-N-EtFOSE-M	86		10 - 150	04/15/24 04:45	04/19/24 20:57	1
M2-4:2 FTS	101		25 - 150	04/15/24 04:45	04/19/24 20:57	1
M2-6:2 FTS	100		25 - 150	04/15/24 04:45	04/19/24 20:57	1
M2-8:2 FTS	102		25 - 150	04/15/24 04:45	04/19/24 20:57	1
13C3 HFPO-DA	88		25 - 150	04/15/24 04:45	04/19/24 20:57	1
13C2 10:2 FTS	100		25 - 150	04/15/24 04:45	04/19/24 20:57	1

**Lab Sample ID: LCS 320-754592/3-A**  
**Matrix: Water**  
**Analysis Batch: 756330**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 754592**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec
							Limits
Perfluorobutanoic acid (PFBA)	40.0	40.6		ng/L		101	60 - 135
Perfluoropentanoic acid (PFPeA)	40.0	42.0		ng/L		105	60 - 135
Perfluorohexanoic acid (PFHxA)	40.0	42.9		ng/L		107	60 - 135
Perfluoroheptanoic acid (PFHpA)	40.0	42.2		ng/L		106	60 - 135
Perfluorooctanoic acid (PFOA)	40.0	42.4		ng/L		106	60 - 135
Perfluorononanoic acid (PFNA)	40.0	44.6		ng/L		112	60 - 135
Perfluorodecanoic acid (PFDA)	40.0	38.7		ng/L		97	60 - 135
Perfluoroundecanoic acid (PFUnA)	40.0	42.5		ng/L		106	60 - 135
Perfluorododecanoic acid (PFDoA)	40.0	45.6		ng/L		114	60 - 135
Perfluorotridecanoic acid (PFTrDA)	40.0	42.3		ng/L		106	60 - 135
Perfluorotetradecanoic acid (PFTeA)	40.0	43.5		ng/L		109	60 - 135
Perfluorobutanesulfonic acid (PFBS)	35.5	39.0		ng/L		110	60 - 135
Perfluoropentanesulfonic acid (PFPeS)	37.6	39.3		ng/L		104	60 - 135
Perfluorohexanesulfonic acid (PFHxS)	36.5	37.2		ng/L		102	60 - 135
Perfluoroheptanesulfonic acid (PFHpS)	38.2	42.1		ng/L		110	60 - 135
Perfluorooctanesulfonic acid (PFOS)	37.2	38.8		ng/L		104	60 - 135
Perfluorononanesulfonic acid (PFNS)	38.5	40.9		ng/L		106	60 - 135
Perfluorodecanesulfonic acid (PFDS)	38.6	39.4		ng/L		102	60 - 135
Perfluorododecanesulfonic acid (PFDoS)	38.8	38.3		ng/L		99	60 - 135

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# QC Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: LCS 320-754592/3-A**  
**Matrix: Water**  
**Analysis Batch: 756330**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 754592**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorooctanesulfonamide (FOSA)	40.0	39.7		ng/L		99	60 - 135
NEtFOSA	40.0	40.1		ng/L		100	60 - 135
NMeFOSA	40.0	44.2		ng/L		110	60 - 135
NMeFOSAA	40.0	44.9		ng/L		112	60 - 135
NEtFOSAA	40.0	43.2		ng/L		108	60 - 135
NMeFOSE	40.0	39.7		ng/L		99	60 - 135
NEtFOSE	40.0	45.6		ng/L		114	60 - 135
4:2 FTS	37.5	39.1		ng/L		104	60 - 135
6:2 FTS	38.1	41.4		ng/L		109	60 - 135
8:2 FTS	38.4	40.5		ng/L		106	60 - 135
4,8-Dioxa-3H-perfluoronanoic acid (ADONA)	37.8	39.8		ng/L		105	60 - 135
HFPO-DA (GenX)	40.0	45.2		ng/L		113	60 - 135
9Cl-PF3ONS	37.4	39.0		ng/L		104	60 - 135
11Cl-PF3OUdS	37.8	39.4		ng/L		104	60 - 135

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C4 PFBA	92		25 - 150
13C5 PFPeA	91		25 - 150
13C2 PFHxA	92		25 - 150
13C4 PFHpA	96		25 - 150
13C4 PFOA	93		25 - 150
13C5 PFNA	94		25 - 150
13C2 PFDA	99		25 - 150
13C2 PFUnA	95		25 - 150
13C2 PFDa	91		25 - 150
13C2 PFTeDA	89		25 - 150
13C3 PFBS	95		25 - 150
18O2 PFHxS	94		25 - 150
13C4 PFOS	95		25 - 150
13C8 FOSA	98		10 - 150
d3-NMeFOSAA	92		25 - 150
d5-NEtFOSAA	95		25 - 150
d-N-MeFOSA-M	81		10 - 150
d-N-EtFOSA-M	86		10 - 150
d7-N-MeFOSE-M	91		10 - 150
d9-N-EtFOSE-M	84		10 - 150
M2-4:2 FTS	101		25 - 150
M2-6:2 FTS	97		25 - 150
M2-8:2 FTS	103		25 - 150
13C3 HFPO-DA	86		25 - 150
13C2 10:2 FTS	98		25 - 150

# QC Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: LLCS 320-754592/2-A**  
**Matrix: Water**  
**Analysis Batch: 756330**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 754592**

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid (PFBA)	8.00	7.69		ng/L		96	50 - 150
Perfluoropentanoic acid (PFPeA)	8.00	8.57		ng/L		107	50 - 150
Perfluorohexanoic acid (PFHxA)	8.00	9.21		ng/L		115	50 - 150
Perfluoroheptanoic acid (PFHpA)	8.00	8.43		ng/L		105	50 - 150
Perfluorooctanoic acid (PFOA)	8.00	8.49		ng/L		106	50 - 150
Perfluorononanoic acid (PFNA)	8.00	8.78		ng/L		110	50 - 150
Perfluorodecanoic acid (PFDA)	8.00	8.25		ng/L		103	50 - 150
Perfluoroundecanoic acid (PFUnA)	8.00	8.10		ng/L		101	50 - 150
Perfluorododecanoic acid (PFDoA)	8.00	8.85		ng/L		111	50 - 150
Perfluorotridecanoic acid (PFTTrDA)	8.00	8.30		ng/L		104	50 - 150
Perfluorotetradecanoic acid (PFTeA)	8.00	8.15		ng/L		102	50 - 150
Perfluorobutanesulfonic acid (PFBS)	7.10	7.44		ng/L		105	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	7.52	7.98		ng/L		106	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	7.30	7.80		ng/L		107	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	7.63	8.05		ng/L		106	50 - 150
Perfluorooctanesulfonic acid (PFOS)	7.44	8.02		ng/L		108	50 - 150
Perfluorononanesulfonic acid (PFNS)	7.70	8.51		ng/L		111	50 - 150
Perfluorodecanesulfonic acid (PFDS)	7.71	7.88		ng/L		102	50 - 150
Perfluorododecanesulfonic acid (PFDoS)	7.76	8.95		ng/L		115	50 - 150
Perfluorooctanesulfonamide (FOSA)	8.00	8.07		ng/L		101	50 - 150
NEtFOSA	8.00	8.50		ng/L		106	50 - 150
NMeFOSA	8.00	8.78		ng/L		110	50 - 150
NMeFOSAA	8.00	9.46		ng/L		118	50 - 150
NEtFOSAA	8.00	8.82		ng/L		110	50 - 150
NMeFOSE	8.00	8.04		ng/L		101	50 - 150
NEtFOSE	8.00	8.87		ng/L		111	50 - 150
4:2 FTS	7.50	7.60		ng/L		101	50 - 150
6:2 FTS	7.62	7.97		ng/L		105	50 - 150
8:2 FTS	7.68	8.04		ng/L		105	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	7.57	8.02		ng/L		106	50 - 150
HFPO-DA (GenX)	8.00	8.99		ng/L		112	50 - 150
9CI-PF3ONS	7.47	7.97		ng/L		107	50 - 150
11CI-PF3OUdS	7.55	8.08		ng/L		107	50 - 150
		<b>LLCS</b>	<b>LLCS</b>				
<b>Isotope Dilution</b>		<b>%Recovery</b>	<b>Qualifier</b>				<b>Limits</b>
13C4 PFBA		96					25 - 150
13C5 PFPeA		89					25 - 150
13C2 PFHxA		93					25 - 150

# QC Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: LLCS 320-754592/2-A**  
**Matrix: Water**  
**Analysis Batch: 756330**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 754592**

Isotope Dilution	LLCS		Limits
	%Recovery	Qualifier	
13C4 PFHpA	96		25 - 150
13C4 PFOA	93		25 - 150
13C5 PFNA	96		25 - 150
13C2 PFDA	97		25 - 150
13C2 PFUnA	93		25 - 150
13C2 PFDaA	96		25 - 150
13C2 PFTeDA	94		25 - 150
13C3 PFBS	96		25 - 150
18O2 PFHxS	95		25 - 150
13C4 PFOS	96		25 - 150
13C8 FOSA	98		10 - 150
d3-NMeFOSAA	94		25 - 150
d5-NEtFOSAA	97		25 - 150
d-N-MeFOSA-M	76		10 - 150
d-N-EtFOSA-M	82		10 - 150
d7-N-MeFOSE-M	87		10 - 150
d9-N-EtFOSE-M	86		10 - 150
M2-4:2 FTS	104		25 - 150
M2-6:2 FTS	99		25 - 150
M2-8:2 FTS	98		25 - 150
13C3 HFPO-DA	86		25 - 150
13C2 10:2 FTS	103		25 - 150

**Lab Sample ID: 500-248725-1 MS**  
**Matrix: Water**  
**Analysis Batch: 756330**

**Client Sample ID: MW-101**  
**Prep Type: Total/NA**  
**Prep Batch: 754592**

Analyte	Sample	Sample	Spike	MS		Unit	D	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier				
Perfluorobutanoic acid (PFBA)	<22	F1 G	37.5	45.9		ng/L		122	70 - 130
Perfluoropentanoic acid (PFPeA)	<0.46		37.5	40.5		ng/L		108	70 - 130
Perfluorohexanoic acid (PFHxA)	<0.55		37.5	37.1		ng/L		99	70 - 130
Perfluoroheptanoic acid (PFHpA)	0.53	J	37.5	38.8		ng/L		102	70 - 130
Perfluorooctanoic acid (PFOA)	15		37.5	56.2		ng/L		110	70 - 130
Perfluorononanoic acid (PFNA)	<0.26		37.5	41.0		ng/L		109	70 - 130
Perfluorodecanoic acid (PFDA)	<0.29		37.5	42.5		ng/L		113	70 - 130
Perfluoroundecanoic acid (PFUnA)	<1.0		37.5	44.5		ng/L		119	70 - 130
Perfluorododecanoic acid (PFDaA)	<0.52		37.5	41.1		ng/L		110	70 - 130
Perfluorotridecanoic acid (PFTTrDA)	<1.2		37.5	39.8		ng/L		106	70 - 130
Perfluorotetradecanoic acid (PFTeA)	<0.69		37.5	39.6		ng/L		106	70 - 130
Perfluorobutanesulfonic acid (PFBS)	0.92	J	33.3	35.2		ng/L		103	70 - 130
Perfluoropentanesulfonic acid (PFPeS)	<0.28		35.2	36.9		ng/L		105	70 - 130
Perfluorohexanesulfonic acid (PFHxS)	0.80	J	34.2	35.4		ng/L		101	70 - 130
Perfluoroheptanesulfonic acid (PFHpS)	<0.18		35.8	40.3		ng/L		113	70 - 130

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# QC Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: 500-248725-1 MS**

**Matrix: Water**

**Analysis Batch: 756330**

**Client Sample ID: MW-101**

**Prep Type: Total/NA**

**Prep Batch: 754592**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorooctanesulfonic acid (PFOS)	42		34.9	76.1		ng/L		99	70 - 130
Perfluorononanesulfonic acid (PFNS)	<0.35		36.1	36.1		ng/L		100	70 - 130
Perfluorodecanesulfonic acid (PFDS)	<0.30		36.1	36.0		ng/L		100	70 - 130
Perfluorododecanesulfonic acid (PFDoS)	<0.92		36.4	34.3		ng/L		94	70 - 130
Perfluorooctanesulfonamide (FOSA)	<0.93		37.5	37.4		ng/L		100	70 - 130
NEtFOSA	<0.82		37.5	37.6		ng/L		100	70 - 130
NMeFOSA	<0.41		37.5	39.8		ng/L		106	70 - 130
NMeFOSAA	<1.1		37.5	41.1		ng/L		110	70 - 130
NEtFOSAA	<1.2		37.5	38.8		ng/L		103	70 - 130
NMeFOSE	<1.3		37.5	34.7		ng/L		93	70 - 130
NEtFOSE	<0.81		37.5	38.0		ng/L		101	70 - 130
4:2 FTS	<0.23		35.2	34.0		ng/L		97	70 - 130
6:2 FTS	<2.4		35.7	36.9		ng/L		103	70 - 130
8:2 FTS	<0.44		36.0	36.4		ng/L		101	70 - 130
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.38		35.5	38.8		ng/L		110	70 - 130
HFPO-DA (GenX)	<1.4		37.5	41.6		ng/L		111	70 - 130
9Cl-PF3ONS	<0.23		35.0	36.2		ng/L		103	70 - 130
11Cl-PF3OUdS	<0.30		35.4	34.5		ng/L		97	70 - 130

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C4 PFBA	72		25 - 150
13C5 PFPeA	82		25 - 150
13C2 PFHxA	97		25 - 150
13C4 PFHpA	95		25 - 150
13C4 PFOA	92		25 - 150
13C5 PFNA	98		25 - 150
13C2 PFDA	95		25 - 150
13C2 PFUnA	85		25 - 150
13C2 PFDoA	82		25 - 150
13C2 PFTeDA	81		25 - 150
13C3 PFBS	89		25 - 150
18O2 PFHxS	90		25 - 150
13C4 PFOS	86		25 - 150
13C8 FOSA	93		10 - 150
d3-NMeFOSAA	80		25 - 150
d5-NEtFOSAA	87		25 - 150
d-N-MeFOSA-M	77		10 - 150
d-N-EtFOSA-M	78		10 - 150
d7-N-MeFOSE-M	86		10 - 150
d9-N-EtFOSE-M	82		10 - 150
M2-4:2 FTS	111		25 - 150
M2-6:2 FTS	106		25 - 150
M2-8:2 FTS	101		25 - 150
13C3 HFPO-DA	84		25 - 150

# QC Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: 500-248725-1 MS**  
**Matrix: Water**  
**Analysis Batch: 756330**

**Client Sample ID: MW-101**  
**Prep Type: Total/NA**  
**Prep Batch: 754592**

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
13C2 10:2 FTS	88		25 - 150

**Lab Sample ID: 500-248725-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 756330**

**Client Sample ID: MW-101**  
**Prep Type: Total/NA**  
**Prep Batch: 754592**

<b>Analyte</b>	<b>Sample Result</b>	<b>Sample Qualifier</b>	<b>Spike Added</b>	<b>MSD Result</b>	<b>MSD Qualifier</b>	<b>Unit</b>	<b>D</b>	<b>%Rec</b>	<b>%Rec Limits</b>	<b>RPD</b>	<b>RPD Limit</b>
Perfluorobutanoic acid (PFBA)	<22	F1 G	39.8	51.0		ng/L		128	70 - 130	11	30
Perfluoropentanoic acid (PFPeA)	<0.46		39.8	42.5		ng/L		107	70 - 130	5	30
Perfluorohexanoic acid (PFHxA)	<0.55		39.8	39.8		ng/L		100	70 - 130	7	30
Perfluoroheptanoic acid (PFHpA)	0.53	J	39.8	44.0		ng/L		109	70 - 130	12	30
Perfluorooctanoic acid (PFOA)	15		39.8	58.1		ng/L		109	70 - 130	3	30
Perfluorononanoic acid (PFNA)	<0.26		39.8	43.1		ng/L		108	70 - 130	5	30
Perfluorodecanoic acid (PFDA)	<0.29		39.8	42.9		ng/L		108	70 - 130	1	30
Perfluoroundecanoic acid (PFUnA)	<1.0		39.8	44.8		ng/L		113	70 - 130	1	30
Perfluorododecanoic acid (PFDoA)	<0.52		39.8	41.9		ng/L		105	70 - 130	2	30
Perfluorotridecanoic acid (PFTrDA)	<1.2		39.8	41.2		ng/L		104	70 - 130	3	30
Perfluorotetradecanoic acid (PFTeA)	<0.69		39.8	40.1		ng/L		101	70 - 130	1	30
Perfluorobutanesulfonic acid (PFBS)	0.92	J	35.3	38.1		ng/L		105	70 - 130	8	30
Perfluoropentanesulfonic acid (PFPeS)	<0.28		37.4	40.4		ng/L		108	70 - 130	9	30
Perfluorohexanesulfonic acid (PFHxS)	0.80	J	36.3	36.6		ng/L		99	70 - 130	3	30
Perfluoroheptanesulfonic acid (PFHpS)	<0.18		37.9	44.6		ng/L		118	70 - 130	10	30
Perfluorooctanesulfonic acid (PFOS)	42		37.0	82.0		ng/L		109	70 - 130	8	30
Perfluorononanesulfonic acid (PFNS)	<0.35		38.3	39.5		ng/L		103	70 - 130	9	30
Perfluorodecanesulfonic acid (PFDS)	<0.30		38.3	39.8		ng/L		104	70 - 130	10	30
Perfluorododecanesulfonic acid (PFDoS)	<0.92		38.6	34.6		ng/L		90	70 - 130	1	30
Perfluorooctanesulfonamide (FOSA)	<0.93		39.8	40.3		ng/L		101	70 - 130	7	30
NEtFOSA	<0.82		39.8	39.9		ng/L		100	70 - 130	6	30
NMeFOSA	<0.41		39.8	44.4		ng/L		112	70 - 130	11	30
NMeFOSAA	<1.1		39.8	44.3		ng/L		111	70 - 130	7	30
NEtFOSAA	<1.2		39.8	42.4		ng/L		107	70 - 130	9	30
NMeFOSE	<1.3		39.8	38.9		ng/L		98	70 - 130	11	30
NEtFOSE	<0.81		39.8	42.6		ng/L		107	70 - 130	11	30
4:2 FTS	<0.23		37.3	35.6		ng/L		96	70 - 130	5	30
6:2 FTS	<2.4		37.9	39.3		ng/L		104	70 - 130	6	30
8:2 FTS	<0.44		38.2	41.7		ng/L		109	70 - 130	13	30
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.38		37.6	44.0		ng/L		117	70 - 130	13	30
HFPO-DA (GenX)	<1.4		39.8	45.3		ng/L		114	70 - 130	9	30

Eurofins Chicago

# QC Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: 500-248725-1 MSD**

**Matrix: Water**

**Analysis Batch: 756330**

**Client Sample ID: MW-101**

**Prep Type: Total/NA**

**Prep Batch: 754592**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
9CI-PF3ONS	<0.23		37.1	39.5		ng/L		106	70 - 130	9	30
11CI-PF3OUdS	<0.30		37.5	36.9		ng/L		98	70 - 130	7	30

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>MSD Qualifier</i>	<i>MSD Limits</i>
13C4 PFBA	72		25 - 150
13C5 PFPeA	82		25 - 150
13C2 PFHxA	92		25 - 150
13C4 PFHpA	94		25 - 150
13C4 PFOA	92		25 - 150
13C5 PFNA	93		25 - 150
13C2 PFDA	94		25 - 150
13C2 PFUnA	84		25 - 150
13C2 PFDoA	81		25 - 150
13C2 PFTeDA	80		25 - 150
13C3 PFBS	85		25 - 150
18O2 PFHxS	88		25 - 150
13C4 PFOS	82		25 - 150
13C8 FOSA	91		10 - 150
d3-NMeFOSAA	78		25 - 150
d5-NEtFOSAA	84		25 - 150
d-N-MeFOSA-M	75		10 - 150
d-N-EtFOSA-M	78		10 - 150
d7-N-MeFOSE-M	78		10 - 150
d9-N-EtFOSE-M	76		10 - 150
M2-4:2 FTS	112		25 - 150
M2-6:2 FTS	102		25 - 150
M2-8:2 FTS	95		25 - 150
13C3 HFPO-DA	82		25 - 150
13C2 10:2 FTS	82		25 - 150

# Lab Chronicle

Client: Ramboll Americas Engineering Solutions  
Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

## Client Sample ID: MW-101

Date Collected: 04/05/24 13:30

Date Received: 04/10/24 09:45

## Lab Sample ID: 500-248725-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3535			754592	SJ	EET SAC	04/15/24 04:45
Total/NA	Analysis	537 (modified)		1	756330	C1P	EET SAC	04/19/24 21:37

## Client Sample ID: MW-102

Date Collected: 04/05/24 14:33

Date Received: 04/10/24 09:45

## Lab Sample ID: 500-248725-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3535			754592	SJ	EET SAC	04/15/24 04:45
Total/NA	Analysis	537 (modified)		1	756330	C1P	EET SAC	04/19/24 22:07

## Client Sample ID: MW-103

Date Collected: 04/05/24 11:00

Date Received: 04/10/24 09:45

## Lab Sample ID: 500-248725-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3535			754592	SJ	EET SAC	04/15/24 04:45
Total/NA	Analysis	537 (modified)		1	756330	C1P	EET SAC	04/19/24 22:17

## Client Sample ID: MW-104

Date Collected: 04/05/24 11:46

Date Received: 04/10/24 09:45

## Lab Sample ID: 500-248725-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3535			754592	SJ	EET SAC	04/15/24 04:45
Total/NA	Analysis	537 (modified)		1	756330	C1P	EET SAC	04/19/24 22:27

## Client Sample ID: MW-105

Date Collected: 04/05/24 12:40

Date Received: 04/10/24 09:45

## Lab Sample ID: 500-248725-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3535			754592	SJ	EET SAC	04/15/24 04:45
Total/NA	Analysis	537 (modified)		1	756330	C1P	EET SAC	04/19/24 22:57
Total/NA	Prep	3535	DL		754592	SJ	EET SAC	04/15/24 04:45
Total/NA	Analysis	537 (modified)	DL	10	756910	RS1	EET SAC	04/24/24 09:11

## Client Sample ID: FB-01

Date Collected: 04/05/24 14:50

Date Received: 04/10/24 09:45

## Lab Sample ID: 500-248725-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3535			754592	SJ	EET SAC	04/15/24 04:45
Total/NA	Analysis	537 (modified)		1	756330	C1P	EET SAC	04/19/24 23:07

# Lab Chronicle

Client: Ramboll Americas Engineering Solutions  
Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

**Client Sample ID: EB-01**

**Lab Sample ID: 500-248725-7**

**Date Collected: 04/05/24 14:45**

**Matrix: Water**

**Date Received: 04/10/24 09:45**

<u>Prep Type</u>	<u>Batch Type</u>	<u>Batch Method</u>	<u>Run</u>	<u>Dilution Factor</u>	<u>Batch Number</u>	<u>Analyst</u>	<u>Lab</u>	<u>Prepared or Analyzed</u>
Total/NA	Prep	3535			754592	SJ	EET SAC	04/15/24 04:45
Total/NA	Analysis	537 (modified)		1	756330	C1P	EET SAC	04/19/24 23:17

**Laboratory References:**

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

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# Accreditation/Certification Summary

Client: Ramboll Americas Engineering Solutions  
Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

## Laboratory: Eurofins Sacramento

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	998204680	08-31-24

- 1
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**Eurofins Chicago**

2417 Bond Street  
 University Park IL 60484  
 Phone (708) 534 5200 Phone (708) 534-5211

**Chain of Custody Record**

eurofins

<b>Client Information</b>		Sampler: <b>BUCLASFORD</b>		Lab PM: Fredrick, Sandie		Carrier Tracking No(s)		COC No: 500-122711-49369 1			
Client Contact: Paul Lindquist		Phone		E-Mail: Sandra.Fredrick@et.eurofinsus.com		State of Origin: <b>WI</b>		Page: Page 1 of 1			
Company: Ramboll Americas Engineering Solutions				PWSID:		<b>Analysis Requested</b>					
Address: 234 W Florida Street Fifth Floor		Due Date Requested		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		PFC_IDA_WI - PFAS, Standard List (33 analytes)		Total Number of containers	
City: Milwaukee		TAT Requested (days)									
State Zip: WI, 53204		Compliance Project Δ Yes Δ No									
Phone: 262-901-3510(Tel)		PO #: MIRRO 4									
Email: plindquist@ramboll.com		WO #		Project #		SSOW#		Preservation Codes		Job #: <b>500-248725</b>	
Project Name: Mirro 4 - 1690026868_Conv GW		Project #		SSOW#		Preservation Codes		Job #: <b>500-248725</b>		A HCL M Hexane B NaOH N None C Zn Acetate O AsNaO2 D Nitric Acid P Na2O4S E NaHSO4 Q Na2SO3 F MeOH R Na2S2O3 G Amchlor S H2SO4 H Ascorbic Acid T TSP Dodecahydrate I Ice U Acetone J DI Water V MCAA K EDTA W pH 4-5 L EDA Y Trizma Z other (specify)	
Site		SSOW#		Other:							
<b>Sample Identification</b>		Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)		Special Instructions/Note	
						Preservation Code		X		N	
1 MW-101		4/5/24		1330		G		Water		3 EXTRA VOL FOR MS/MSD	
2 MW-102		↓		1433		↓		Water		2	
3 MW-103		↓		1100		↓		Water		2	
4 MW-104		↓		1146		↓		Water		2	
5 MW-105		↓		1240		↓		Water		2	
6 FB-01		↓		1450		↓		Water		2	
7 EB-01		↓		1445		↓		Water		2	
								Water			
								Water			
								Water			
								Water			
<b>Possible Hazard Identification</b>						<b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b>					
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological						<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months					
Deliverable Requested I, II, III, IV, Other (specify)						Special Instructions/QC Requirements					
Empty Kit Relinquished by: <i>[Signature]</i>				Date		Time		Method of Shipment			
Relinquished by: <i>[Signature]</i>		Date/Time: 4/9/24 1420		Company: <b>EAES</b>		Received by: <i>[Signature]</i>		Date/Time: 4/9/24 1420		Company: <b>furnish</b>	
Relinquished by: <i>[Signature]</i>		Date/Time: 4/9/24 1700		Company: <b>Eurofins</b>		Received by: <i>[Signature]</i>		Date/Time: 4/10/24 0945		Company: <b>EAES</b>	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:	
Custody Seals Intact. Δ Yes Δ No		Custody Seal No		Cooler Temperature(s) °C and Other Remarks: <b>2.8 → 2.3</b>							



# Login Sample Receipt Checklist

Client: Ramboll Americas Engineering Solutions

Job Number: 500-248725-1

**Login Number: 248725**

**List Number: 1**

**Creator: Scott, Sherri L**

**List Source: Eurofins Chicago**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.3
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

# Login Sample Receipt Checklist

Client: Ramboll Americas Engineering Solutions

Job Number: 500-248725-1

**Login Number: 248725**

**List Number: 2**

**Creator: Simmons, Jason C**

**List Source: Eurofins Sacramento**

**List Creation: 04/12/24 02:51 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.9c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

# Isotope Dilution Summary

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

## Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	C4PFHA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
500-248725-1	MW-101	70	82	91	94	92	96	96	87
500-248725-1 MS	MW-101	72	82	97	95	92	98	95	85
500-248725-1 MSD	MW-101	72	82	92	94	92	93	94	84
500-248725-2	MW-102	15 *5-	36	74	83	94	98	107	104
500-248725-3	MW-103	48	67	86	95	92	94	97	88
500-248725-4	MW-104	67	81	93	92	91	94	95	84
500-248725-5	MW-105	47	73	96	95	93	96	102	97
500-248725-5 - DL	MW-105								
500-248725-6	FB-01	95	91	96	99	94	97	99	93
500-248725-7	EB-01	98	94	95	97	97	97	98	93
LCS 320-754592/3-A	Lab Control Sample	92	91	92	96	93	94	99	95
LLCS 320-754592/2-A	Lab Control Sample	96	89	93	96	93	96	97	93
MB 320-754592/1-A	Method Blank	92	93	86	93	92	94	101	92

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (25-150)	PFTDA (25-150)	C3PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (10-150)	d3NMFOS (25-150)	d5NEFOS (25-150)
500-248725-1	MW-101	84	81	88	89	87	93	78	94
500-248725-1 MS	MW-101	82	81	89	90	86	93	80	87
500-248725-1 MSD	MW-101	81	80	85	88	82	91	78	84
500-248725-2	MW-102	96	75	81	94	94	92	98	107
500-248725-3	MW-103	83	76	82	87	85	93	81	83
500-248725-4	MW-104	82	70	87	87	85	94	82	85
500-248725-5	MW-105	96	85	92	94	94	82	80	96
500-248725-5 - DL	MW-105					88			
500-248725-6	FB-01	91	90	95	96	93	96	89	95
500-248725-7	EB-01	94	85	96	95	95	94	89	95
LCS 320-754592/3-A	Lab Control Sample	91	89	95	94	95	98	92	95
LLCS 320-754592/2-A	Lab Control Sample	96	94	96	95	96	98	94	97
MB 320-754592/1-A	Method Blank	91	92	94	95	95	96	93	98

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	dMeFOSA (10-150)	dEtFOSA (10-150)	NMFM (10-150)	NEFM (10-150)	M242FTS (25-150)	M262FTS (25-150)	M282FTS (25-150)	HFPODA (25-150)
500-248725-1	MW-101	80	80	88	86	103	108	105	82
500-248725-1 MS	MW-101	77	78	86	82	111	106	101	84
500-248725-1 MSD	MW-101	75	78	78	76	112	102	95	82
500-248725-2	MW-102	76	79	88	86	120	129	158 *5+	80
500-248725-3	MW-103	79	78	79	77	86	95	97	82
500-248725-4	MW-104	76	76	77	71	86	89	90	85
500-248725-5	MW-105	79	81	85	89	148	163 *5+	178 *5+	85
500-248725-5 - DL	MW-105						133	134	
500-248725-6	FB-01	87	90	93	89	100	94	99	88
500-248725-7	EB-01	76	85	89	85	104	96	98	89
LCS 320-754592/3-A	Lab Control Sample	81	86	91	84	101	97	103	86
LLCS 320-754592/2-A	Lab Control Sample	76	82	87	86	104	99	98	86
MB 320-754592/1-A	Method Blank	79	87	90	86	101	100	102	88

		M102FTS (25-150)
Lab Sample ID	Client Sample ID	87
500-248725-1	MW-101	87

# Isotope Dilution Summary

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868\_Conv GW

Job ID: 500-248725-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

Matrix: Water

Prep Type: Total/NA

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	M102FTS (25-150)
500-248725-1 MS	MW-101	88
500-248725-1 MSD	MW-101	82
500-248725-2	MW-102	124
500-248725-3	MW-103	90
500-248725-4	MW-104	84
500-248725-5	MW-105	105
500-248725-5 - DL	MW-105	
500-248725-6	FB-01	93
500-248725-7	EB-01	101
LCS 320-754592/3-A	Lab Control Sample	98
LLCS 320-754592/2-A	Lab Control Sample	103
MB 320-754592/1-A	Method Blank	100

#### Surrogate Legend

- PFBA = 13C4 PFBA
- PFPeA = 13C5 PFPeA
- PFHxA = 13C2 PFHxA
- C4PFHA = 13C4 PFHpA
- PFOA = 13C4 PFOA
- PFNA = 13C5 PFNA
- PFDA = 13C2 PFDA
- PFUnA = 13C2 PFUnA
- PFDaA = 13C2 PFDaA
- PFTDA = 13C2 PFTeDA
- C3PFBS = 13C3 PFBS
- PFHxS = 18O2 PFHxS
- PFOS = 13C4 PFOS
- PFOSA = 13C8 FOSA
- d3NMFOS = d3-NMeFOSAA
- d5NEFOS = d5-NEtFOSAA
- dMeFOSA = d-N-MeFOSA-M
- dEtFOSA = d-N-EtFOSA-M
- NMFM = d7-N-MeFOSE-M
- NEFM = d9-N-EtFOSE-M
- M242FTS = M2-4:2 FTS
- M262FTS = M2-6:2 FTS
- M282FTS = M2-8:2 FTS
- HFPODA = 13C3 HFPO-DA
- M102FTS = 13C2 10:2 FTS



# ANALYTICAL REPORT

## PREPARED FOR

Attn: Paul Lindquist  
Ramboll Americas Engineering Solutions  
234 W. Florida Street  
Fifth Floor  
Milwaukee, Wisconsin 53204

Generated 4/29/2024 4:24:43 PM

## JOB DESCRIPTION

Mirro 4 - 1690026868

## JOB NUMBER

500-248724-1

# Eurofins Chicago

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Chicago Project Manager.

## Compliance Statement

The LOD and LOQ reported are adjusted by the dilution factor when a dilution factor greater than 1 is needed. Additionally, where results are indicated as being reported on a dry weight basis, the LOD and LOQ are adjusted for moisture content as well.

### Definitions of Limits

- LOD = Limit of Detection = MDL as defined by 40 CFR part 136 Appendix B
- LOQ = Limit of Quantitation = 3.33 x LOD as defined by Wisconsin
- RL = Report Limit = a concentration supported by a standard in the calibration curves

## Authorization



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Authorized for release by  
Sandie Fredrick, Senior Project Manager  
[Sandra.Fredrick@et.eurofinsus.com](mailto:Sandra.Fredrick@et.eurofinsus.com)  
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# Case Narrative

Client: Ramboll Americas Engineering Solutions  
Project: Mirro 4 - 1690026868

Job ID: 500-248724-1

**Job ID: 500-248724-1**

**Eurofins Chicago**

## Job Narrative 500-248724-1

### Receipt

The sample was received on 4/10/2024 9:45 AM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.3° C.

### GC/MS VOA

Method 8260D: The following analyte(s) recovered outside control limits for the LCSD associated with analytical batch 500-762788: Chloroethane. This is not indicative of a systematic control problem because these were random marginal exceedances. Qualified results have been reported.20240405-IDW-W (500-248724-1)

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

### GC/MS Semi VOA

Method 8270E: The continuing calibration verification (CCV) analyzed in batch 500-762857 was outside the method criteria for the following analyte(s): 2,4-Dimethylphenol, Hexachlorocyclopentadiene and Pentachlorophenol. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Method 8270E: The continuing calibration verification (CCV) analyzed in 500-762857 was outside the method criteria for the following analyte(s): Benzo[g,h,i]perylene. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Method 8270E: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for preparation batch 500-762667 and analytical batch 500-762857 recovered outside control limits for the following analytes: Pyridine.

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

### GC Semi VOA

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

### Metals

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

### LCMS

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

### General Chemistry

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

### Organic Prep

Method 3535: During the solid phase extraction process, the following sample contained particulates which clogged the solid phase extraction column: 20240405-IDW-W (500-248724-1).

Method 3535: The following sample was brown in color and contained a thin layer of sediment at the bottom of the bottle prior to extraction: 20240405-IDW-W (500-248724-1).

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

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# Detection Summary

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868

Job ID: 500-248724-1

**Client Sample ID: 20240405-IDW-W**

**Lab Sample ID: 500-248724-1**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloromethane	1.2	J	5.0	0.32	ug/L	1		8260D	Total/NA
1,2,4-Trimethylbenzene	3.1		1.0	0.36	ug/L	1		8260D	Total/NA
Perfluorobutanoic acid (PFBA)	290		4.6	2.2	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	130		1.8	0.45	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	1.7	J	1.8	0.54	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid (PFHpA)	2.4		1.8	0.23	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	32		1.8	0.79	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	0.82	J	1.8	0.25	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.30	J	1.8	0.29	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	2.3		1.8	0.53	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic acid (PFHpS)	1.4	J	1.8	0.18	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	110		1.8	0.50	ng/L	1		537 (modified)	Total/NA
8:2 FTS	0.88	J	1.8	0.43	ng/L	1		537 (modified)	Total/NA
Arsenic	2.2		1.0	0.23	ug/L	1		6020B	Total Recoverable
Barium	190		2.5	0.73	ug/L	1		6020B	Total Recoverable
Cadmium	0.73		0.50	0.17	ug/L	1		6020B	Total Recoverable
Chromium	15		5.0	1.1	ug/L	1		6020B	Total Recoverable
Lead	7.2		0.50	0.19	ug/L	1		6020B	Total Recoverable
Oil & Grease (HEM)	2.0	J	5.1	1.3	mg/L	1		1664B	Total/NA
pH	7.4	HF	0.2	0.2	SU	1		SM 4500 H+ B	Total/NA

This Detection Summary does not include radiochemical test results.

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# Method Summary

Client: Ramboll Americas Engineering Solutions  
Project/Site: Mirro 4 - 1690026868

Job ID: 500-248724-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CHI
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CHI
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET CHI
537 (modified)	Fluorinated Alkyl Substances	EPA	EET SAC
6020B	Metals (ICP/MS)	SW846	EET CHI
7470A	Mercury (CVAA)	SW846	EET CHI
1664B	HEM and SGT-HEM	1664B	EET CHI
SM 4500 H+ B	pH	SM	EET CHI
1664B	HEM and SGT-HEM (SPE)	1664B	EET CHI
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET CHI
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CHI
3535	Solid-Phase Extraction (SPE)	SW846	EET SAC
5030B	Purge and Trap	SW846	EET CHI
7470A	Preparation, Mercury	SW846	EET CHI

#### Protocol References:

1664B = EPA-821-98-002

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

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

#### Laboratory References:

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

# Sample Summary

Client: Ramboll Americas Engineering Solutions  
Project/Site: Mirro 4 - 1690026868

Job ID: 500-248724-1

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<u>Lab Sample ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Collected</u>	<u>Received</u>
500-248724-1	20240405-IDW-W	Water	04/05/24 15:00	04/10/24 09:45

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

# Client Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868

Job ID: 500-248724-1

**Client Sample ID: 20240405-IDW-W**

**Lab Sample ID: 500-248724-1**

Date Collected: 04/05/24 15:00

Matrix: Water

Date Received: 04/10/24 09:45

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.15		0.50	0.15	ug/L			04/12/24 17:41	1
Bromobenzene	<0.36		1.0	0.36	ug/L			04/12/24 17:41	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			04/12/24 17:41	1
Bromodichloromethane	<0.37		1.0	0.37	ug/L			04/12/24 17:41	1
Bromoform	<0.48		1.0	0.48	ug/L			04/12/24 17:41	1
Bromomethane	<0.80		3.0	0.80	ug/L			04/12/24 17:41	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			04/12/24 17:41	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			04/12/24 17:41	1
Chloroethane	<0.51	*-	5.0	0.51	ug/L			04/12/24 17:41	1
Chloroform	<0.37		2.0	0.37	ug/L			04/12/24 17:41	1
<b>Chloromethane</b>	<b>1.2</b>	<b>J</b>	5.0	0.32	ug/L			04/12/24 17:41	1
2-Chlorotoluene	<0.31		1.0	0.31	ug/L			04/12/24 17:41	1
4-Chlorotoluene	<0.35		1.0	0.35	ug/L			04/12/24 17:41	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			04/12/24 17:41	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			04/12/24 17:41	1
Dibromochloromethane	<0.49		1.0	0.49	ug/L			04/12/24 17:41	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			04/12/24 17:41	1
1,2-Dibromoethane	<0.39		1.0	0.39	ug/L			04/12/24 17:41	1
Dibromomethane	<0.27		1.0	0.27	ug/L			04/12/24 17:41	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			04/12/24 17:41	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			04/12/24 17:41	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			04/12/24 17:41	1
Dichlorodifluoromethane	<0.67		3.0	0.67	ug/L			04/12/24 17:41	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			04/12/24 17:41	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			04/12/24 17:41	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			04/12/24 17:41	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			04/12/24 17:41	1
1,3-Dichloropropane	<0.36		1.0	0.36	ug/L			04/12/24 17:41	1
2,2-Dichloropropane	<0.44		5.0	0.44	ug/L			04/12/24 17:41	1
1,1-Dichloropropene	<0.30		1.0	0.30	ug/L			04/12/24 17:41	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/12/24 17:41	1
Hexachlorobutadiene	<0.45		1.0	0.45	ug/L			04/12/24 17:41	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			04/12/24 17:41	1
Isopropyl ether	<0.28		1.0	0.28	ug/L			04/12/24 17:41	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			04/12/24 17:41	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			04/12/24 17:41	1
Naphthalene	<0.34		1.0	0.34	ug/L			04/12/24 17:41	1
n-Butylbenzene	<0.39		1.0	0.39	ug/L			04/12/24 17:41	1
N-Propylbenzene	<0.41		1.0	0.41	ug/L			04/12/24 17:41	1
p-Isopropyltoluene	<0.36		1.0	0.36	ug/L			04/12/24 17:41	1
sec-Butylbenzene	<0.40		1.0	0.40	ug/L			04/12/24 17:41	1
Styrene	<0.39		1.0	0.39	ug/L			04/12/24 17:41	1
tert-Butylbenzene	<0.40		1.0	0.40	ug/L			04/12/24 17:41	1
1,1,1,2-Tetrachloroethane	<0.46		1.0	0.46	ug/L			04/12/24 17:41	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			04/12/24 17:41	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			04/12/24 17:41	1
Toluene	<0.15		0.50	0.15	ug/L			04/12/24 17:41	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			04/12/24 17:41	1
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			04/12/24 17:41	1

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# Client Sample Results

Client: Ramboll Americas Engineering Solutions  
Project/Site: Mirro 4 - 1690026868

Job ID: 500-248724-1

**Client Sample ID: 20240405-IDW-W**

**Lab Sample ID: 500-248724-1**

**Date Collected: 04/05/24 15:00**

**Matrix: Water**

**Date Received: 04/10/24 09:45**

## Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			04/12/24 17:41	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			04/12/24 17:41	1
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			04/12/24 17:41	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			04/12/24 17:41	1
Trichloroethene	<0.16		0.50	0.16	ug/L			04/12/24 17:41	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			04/12/24 17:41	1
1,2,3-Trichloropropane	<0.41		2.0	0.41	ug/L			04/12/24 17:41	1
<b>1,2,4-Trimethylbenzene</b>	<b>3.1</b>		1.0	0.36	ug/L			04/12/24 17:41	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			04/12/24 17:41	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			04/12/24 17:41	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/12/24 17:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	86		72 - 124					04/12/24 17:41	1
Dibromofluoromethane (Surr)	114		75 - 120					04/12/24 17:41	1
1,2-Dichloroethane-d4 (Surr)	89		75 - 126					04/12/24 17:41	1
Toluene-d8 (Surr)	97		75 - 120					04/12/24 17:41	1

## Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.24		0.78	0.24	ug/L		04/11/24 10:49	04/12/24 17:12	1
Acenaphthylene	<0.21		0.78	0.21	ug/L		04/11/24 10:49	04/12/24 17:12	1
Anthracene	<0.26		0.78	0.26	ug/L		04/11/24 10:49	04/12/24 17:12	1
Benzo[a]anthracene	<0.044		0.16	0.044	ug/L		04/11/24 10:49	04/12/24 17:12	1
Benzo[a]pyrene	<0.078		0.16	0.078	ug/L		04/11/24 10:49	04/12/24 17:12	1
Benzo[b]fluoranthene	<0.063		0.16	0.063	ug/L		04/11/24 10:49	04/12/24 17:12	1
Benzo[g,h,i]perylene	<0.29		0.78	0.29	ug/L		04/11/24 10:49	04/12/24 17:12	1
Benzoic acid	<4.5		16	4.5	ug/L		04/11/24 10:49	04/12/24 17:12	1
Benzo[k]fluoranthene	<0.050		0.16	0.050	ug/L		04/11/24 10:49	04/12/24 17:12	1
Benzyl alcohol	<4.7		16	4.7	ug/L		04/11/24 10:49	04/12/24 17:12	1
Bis(2-chloroethoxy)methane	<0.22		1.6	0.22	ug/L		04/11/24 10:49	04/12/24 17:12	1
Bis(2-chloroethyl)ether	<0.23		1.6	0.23	ug/L		04/11/24 10:49	04/12/24 17:12	1
Bis(2-ethylhexyl) phthalate	<1.3		7.8	1.3	ug/L		04/11/24 10:49	04/12/24 17:12	1
4-Bromophenyl phenyl ether	<0.42		3.9	0.42	ug/L		04/11/24 10:49	04/12/24 17:12	1
Butyl benzyl phthalate	<0.38		1.6	0.38	ug/L		04/11/24 10:49	04/12/24 17:12	1
Carbazole	<0.28		3.9	0.28	ug/L		04/11/24 10:49	04/12/24 17:12	1
4-Chloroaniline	<1.6		7.8	1.6	ug/L		04/11/24 10:49	04/12/24 17:12	1
4-Chloro-3-methylphenol	<1.8		7.8	1.8	ug/L		04/11/24 10:49	04/12/24 17:12	1
2-Chloronaphthalene	<0.18		1.6	0.18	ug/L		04/11/24 10:49	04/12/24 17:12	1
2-Chlorophenol	<0.44		3.9	0.44	ug/L		04/11/24 10:49	04/12/24 17:12	1
4-Chlorophenyl phenyl ether	<0.50		3.9	0.50	ug/L		04/11/24 10:49	04/12/24 17:12	1
Chrysene	<0.053		0.16	0.053	ug/L		04/11/24 10:49	04/12/24 17:12	1
Dibenz(a,h)anthracene	<0.040		0.24	0.040	ug/L		04/11/24 10:49	04/12/24 17:12	1
Dibenzofuran	<0.21		1.6	0.21	ug/L		04/11/24 10:49	04/12/24 17:12	1
1,2-Dichlorobenzene	<0.19		1.6	0.19	ug/L		04/11/24 10:49	04/12/24 17:12	1
1,3-Dichlorobenzene	<0.16		1.6	0.16	ug/L		04/11/24 10:49	04/12/24 17:12	1
1,4-Dichlorobenzene	<0.16		1.6	0.16	ug/L		04/11/24 10:49	04/12/24 17:12	1
3,3'-Dichlorobenzidine	<1.3		3.9	1.3	ug/L		04/11/24 10:49	04/12/24 17:12	1
2,4-Dichlorophenol	<2.0		7.8	2.0	ug/L		04/11/24 10:49	04/12/24 17:12	1
Diethyl phthalate	<0.28		3.9	0.28	ug/L		04/11/24 10:49	04/12/24 17:12	1

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# Client Sample Results

Client: Ramboll Americas Engineering Solutions  
Project/Site: Mirro 4 - 1690026868

Job ID: 500-248724-1

**Client Sample ID: 20240405-IDW-W**

**Lab Sample ID: 500-248724-1**

Date Collected: 04/05/24 15:00

Matrix: Water

Date Received: 04/10/24 09:45

**Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dimethylphenol	<1.4		7.8	1.4	ug/L		04/11/24 10:49	04/12/24 17:12	1
Dimethyl phthalate	<0.25		3.9	0.25	ug/L		04/11/24 10:49	04/12/24 17:12	1
Di-n-butyl phthalate	<0.57		3.9	0.57	ug/L		04/11/24 10:49	04/12/24 17:12	1
4,6-Dinitro-2-methylphenol	<4.6		16	4.6	ug/L		04/11/24 10:49	04/12/24 17:12	1
2,4-Dinitrophenol	<6.7		16	6.7	ug/L		04/11/24 10:49	04/12/24 17:12	1
2,4-Dinitrotoluene	<0.19		0.78	0.19	ug/L		04/11/24 10:49	04/12/24 17:12	1
2,6-Dinitrotoluene	<0.058		0.78	0.058	ug/L		04/11/24 10:49	04/12/24 17:12	1
Di-n-octyl phthalate	<0.82		7.8	0.82	ug/L		04/11/24 10:49	04/12/24 17:12	1
Fluoranthene	<0.36		0.78	0.36	ug/L		04/11/24 10:49	04/12/24 17:12	1
Fluorene	<0.19		0.78	0.19	ug/L		04/11/24 10:49	04/12/24 17:12	1
Hexachlorobenzene	<0.062		0.39	0.062	ug/L		04/11/24 10:49	04/12/24 17:12	1
Hexachlorobutadiene	<0.40		3.9	0.40	ug/L		04/11/24 10:49	04/12/24 17:12	1
Hexachlorocyclopentadiene	<5.0		16	5.0	ug/L		04/11/24 10:49	04/12/24 17:12	1
Hexachloroethane	<0.47		3.9	0.47	ug/L		04/11/24 10:49	04/12/24 17:12	1
Indeno[1,2,3-cd]pyrene	<0.059		0.16	0.059	ug/L		04/11/24 10:49	04/12/24 17:12	1
Isophorone	<0.29		1.6	0.29	ug/L		04/11/24 10:49	04/12/24 17:12	1
1-Methylnaphthalene	<0.24		1.6	0.24	ug/L		04/11/24 10:49	04/12/24 17:12	1
2-Methylnaphthalene	<0.051		1.6	0.051	ug/L		04/11/24 10:49	04/12/24 17:12	1
2-Methylphenol	<0.24		1.6	0.24	ug/L		04/11/24 10:49	04/12/24 17:12	1
3 & 4 Methylphenol	<0.35		1.6	0.35	ug/L		04/11/24 10:49	04/12/24 17:12	1
Naphthalene	<0.24		0.78	0.24	ug/L		04/11/24 10:49	04/12/24 17:12	1
2-Nitroaniline	<1.0		3.9	1.0	ug/L		04/11/24 10:49	04/12/24 17:12	1
3-Nitroaniline	<1.4		7.8	1.4	ug/L		04/11/24 10:49	04/12/24 17:12	1
4-Nitroaniline	<1.3		7.8	1.3	ug/L		04/11/24 10:49	04/12/24 17:12	1
Nitrobenzene	<0.35		0.78	0.35	ug/L		04/11/24 10:49	04/12/24 17:12	1
2-Nitrophenol	<2.0		7.8	2.0	ug/L		04/11/24 10:49	04/12/24 17:12	1
4-Nitrophenol	<5.8		16	5.8	ug/L		04/11/24 10:49	04/12/24 17:12	1
N-Nitrosodi-n-propylamine	<0.12		0.39	0.12	ug/L		04/11/24 10:49	04/12/24 17:12	1
N-Nitrosodiphenylamine	<0.29		1.6	0.29	ug/L		04/11/24 10:49	04/12/24 17:12	1
2,2'-oxybis[1-chloropropane]	<0.30		1.6	0.30	ug/L		04/11/24 10:49	04/12/24 17:12	1
Pentachlorophenol	<3.1		16	3.1	ug/L		04/11/24 10:49	04/12/24 17:12	1
Phenanthrene	<0.24		0.78	0.24	ug/L		04/11/24 10:49	04/12/24 17:12	1
Phenol	<0.53		3.9	0.53	ug/L		04/11/24 10:49	04/12/24 17:12	1
Pyrene	<0.33		0.78	0.33	ug/L		04/11/24 10:49	04/12/24 17:12	1
Pyridine	<3.9 *1		16	3.9	ug/L		04/11/24 10:49	04/12/24 17:12	1
1,2,4-Trichlorobenzene	<0.19		1.6	0.19	ug/L		04/11/24 10:49	04/12/24 17:12	1
2,4,5-Trichlorophenol	<2.0		7.8	2.0	ug/L		04/11/24 10:49	04/12/24 17:12	1
2,4,6-Trichlorophenol	<0.56		3.9	0.56	ug/L		04/11/24 10:49	04/12/24 17:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	74		34 - 110	04/11/24 10:49	04/12/24 17:12	1
2-Fluorophenol (Surr)	48		27 - 110	04/11/24 10:49	04/12/24 17:12	1
Nitrobenzene-d5 (Surr)	81		36 - 120	04/11/24 10:49	04/12/24 17:12	1
Phenol-d5 (Surr)	34		20 - 110	04/11/24 10:49	04/12/24 17:12	1
Terphenyl-d14 (Surr)	88		40 - 145	04/11/24 10:49	04/12/24 17:12	1
2,4,6-Tribromophenol (Surr)	81		40 - 145	04/11/24 10:49	04/12/24 17:12	1

**Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.070		0.42	0.070	ug/L		04/16/24 17:01	04/18/24 17:03	1

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# Client Sample Results

Client: Ramboll Americas Engineering Solutions  
Project/Site: Mirro 4 - 1690026868

Job ID: 500-248724-1

**Client Sample ID: 20240405-IDW-W**

**Lab Sample ID: 500-248724-1**

Date Collected: 04/05/24 15:00

Matrix: Water

Date Received: 04/10/24 09:45

**Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1221	<0.21		0.42	0.21	ug/L		04/16/24 17:01	04/18/24 17:03	1
PCB-1232	<0.21		0.42	0.21	ug/L		04/16/24 17:01	04/18/24 17:03	1
PCB-1242	<0.21		0.42	0.21	ug/L		04/16/24 17:01	04/18/24 17:03	1
PCB-1248	<0.21		0.42	0.21	ug/L		04/16/24 17:01	04/18/24 17:03	1
PCB-1254	<0.21		0.42	0.21	ug/L		04/16/24 17:01	04/18/24 17:03	1
PCB-1260	<0.073		0.42	0.073	ug/L		04/16/24 17:01	04/18/24 17:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	89		30 - 120	04/16/24 17:01	04/18/24 17:03	1
DCB Decachlorobiphenyl	92		30 - 140	04/16/24 17:01	04/18/24 17:03	1

**Method: EPA 537 (modified) - Fluorinated Alkyl Substances**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	290		4.6	2.2	ng/L		04/15/24 04:45	04/19/24 21:27	1
Perfluoropentanoic acid (PFPeA)	130		1.8	0.45	ng/L		04/15/24 04:45	04/19/24 21:27	1
Perfluorohexanoic acid (PFHxA)	1.7	J	1.8	0.54	ng/L		04/15/24 04:45	04/19/24 21:27	1
Perfluoroheptanoic acid (PFHpA)	2.4		1.8	0.23	ng/L		04/15/24 04:45	04/19/24 21:27	1
Perfluorooctanoic acid (PFOA)	32		1.8	0.79	ng/L		04/15/24 04:45	04/19/24 21:27	1
Perfluorononanoic acid (PFNA)	0.82	J	1.8	0.25	ng/L		04/15/24 04:45	04/19/24 21:27	1
Perfluorodecanoic acid (PFDA)	0.30	J	1.8	0.29	ng/L		04/15/24 04:45	04/19/24 21:27	1
Perfluoroundecanoic acid (PFUnA)	<1.0		1.8	1.0	ng/L		04/15/24 04:45	04/19/24 21:27	1
Perfluorododecanoic acid (PFDoA)	<0.51		1.8	0.51	ng/L		04/15/24 04:45	04/19/24 21:27	1
Perfluorotridecanoic acid (PFTrDA)	<1.2		1.8	1.2	ng/L		04/15/24 04:45	04/19/24 21:27	1
Perfluorotetradecanoic acid (PFTeA)	<0.67		1.8	0.67	ng/L		04/15/24 04:45	04/19/24 21:27	1
Perfluorobutanesulfonic acid (PFBS)	<0.18		1.8	0.18	ng/L		04/15/24 04:45	04/19/24 21:27	1
Perfluoropentanesulfonic acid (PFPeS)	<0.28		1.8	0.28	ng/L		04/15/24 04:45	04/19/24 21:27	1
Perfluorohexanesulfonic acid (PFHxS)	2.3		1.8	0.53	ng/L		04/15/24 04:45	04/19/24 21:27	1
Perfluoroheptanesulfonic acid (PFHpS)	1.4	J	1.8	0.18	ng/L		04/15/24 04:45	04/19/24 21:27	1
Perfluorooctanesulfonic acid (PFOS)	110		1.8	0.50	ng/L		04/15/24 04:45	04/19/24 21:27	1
Perfluorononanesulfonic acid (PFNS)	<0.34		1.8	0.34	ng/L		04/15/24 04:45	04/19/24 21:27	1
Perfluorodecanesulfonic acid (PFDS)	<0.30		1.8	0.30	ng/L		04/15/24 04:45	04/19/24 21:27	1
Perfluorododecanesulfonic acid (PFDoS)	<0.90		1.8	0.90	ng/L		04/15/24 04:45	04/19/24 21:27	1
Perfluorooctanesulfonamide (FOSA)	<0.91		1.8	0.91	ng/L		04/15/24 04:45	04/19/24 21:27	1
NEtFOSA	<0.80		1.8	0.80	ng/L		04/15/24 04:45	04/19/24 21:27	1
NMeFOSA	<0.40		1.8	0.40	ng/L		04/15/24 04:45	04/19/24 21:27	1
NMeFOSAA	<1.1		4.6	1.1	ng/L		04/15/24 04:45	04/19/24 21:27	1
NEtFOSAA	<1.2		4.6	1.2	ng/L		04/15/24 04:45	04/19/24 21:27	1
NMeFOSE	<1.3		3.7	1.3	ng/L		04/15/24 04:45	04/19/24 21:27	1
NEtFOSE	<0.79		1.8	0.79	ng/L		04/15/24 04:45	04/19/24 21:27	1
4:2 FTS	<0.22		1.8	0.22	ng/L		04/15/24 04:45	04/19/24 21:27	1
6:2 FTS	<2.3		4.6	2.3	ng/L		04/15/24 04:45	04/19/24 21:27	1
8:2 FTS	0.88	J	1.8	0.43	ng/L		04/15/24 04:45	04/19/24 21:27	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.37		1.8	0.37	ng/L		04/15/24 04:45	04/19/24 21:27	1
HFPO-DA (GenX)	<1.4		3.7	1.4	ng/L		04/15/24 04:45	04/19/24 21:27	1
9CI-PF3ONS	<0.22		1.8	0.22	ng/L		04/15/24 04:45	04/19/24 21:27	1

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# Client Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868

Job ID: 500-248724-1

**Client Sample ID: 20240405-IDW-W**

**Lab Sample ID: 500-248724-1**

Date Collected: 04/05/24 15:00

Matrix: Water

Date Received: 04/10/24 09:45

**Method: EPA 537 (modified) - Fluorinated Alkyl Substances (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
11CI-PF3OUdS	<0.30		1.8	0.30	ng/L		04/15/24 04:45	04/19/24 21:27	1
<i>Isotope Dilution</i>		<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
13C4 PFBA	36		25 - 150				04/15/24 04:45	04/19/24 21:27	1
13C5 PFPeA	60		25 - 150				04/15/24 04:45	04/19/24 21:27	1
13C2 PFHxA	82		25 - 150				04/15/24 04:45	04/19/24 21:27	1
13C4 PFHpA	83		25 - 150				04/15/24 04:45	04/19/24 21:27	1
13C4 PFOA	84		25 - 150				04/15/24 04:45	04/19/24 21:27	1
13C5 PFNA	88		25 - 150				04/15/24 04:45	04/19/24 21:27	1
13C2 PFDA	88		25 - 150				04/15/24 04:45	04/19/24 21:27	1
13C2 PFUnA	77		25 - 150				04/15/24 04:45	04/19/24 21:27	1
13C2 PFDoA	67		25 - 150				04/15/24 04:45	04/19/24 21:27	1
13C2 PFTeDA	53		25 - 150				04/15/24 04:45	04/19/24 21:27	1
13C3 PFBS	79		25 - 150				04/15/24 04:45	04/19/24 21:27	1
18O2 PFHxS	80		25 - 150				04/15/24 04:45	04/19/24 21:27	1
13C4 PFOS	76		25 - 150				04/15/24 04:45	04/19/24 21:27	1
13C8 FOSA	83		10 - 150				04/15/24 04:45	04/19/24 21:27	1
d3-NMeFOSAA	66		25 - 150				04/15/24 04:45	04/19/24 21:27	1
d5-NEtFOSAA	73		25 - 150				04/15/24 04:45	04/19/24 21:27	1
d-N-MeFOSA-M	61		10 - 150				04/15/24 04:45	04/19/24 21:27	1
d-N-EtFOSA-M	57		10 - 150				04/15/24 04:45	04/19/24 21:27	1
d7-N-MeFOSE-M	57		10 - 150				04/15/24 04:45	04/19/24 21:27	1
d9-N-EtFOSE-M	53		10 - 150				04/15/24 04:45	04/19/24 21:27	1
M2-4:2 FTS	98		25 - 150				04/15/24 04:45	04/19/24 21:27	1
M2-6:2 FTS	111		25 - 150				04/15/24 04:45	04/19/24 21:27	1
M2-8:2 FTS	113		25 - 150				04/15/24 04:45	04/19/24 21:27	1
13C3 HFPO-DA	69		25 - 150				04/15/24 04:45	04/19/24 21:27	1
13C2 10:2 FTS	72		25 - 150				04/15/24 04:45	04/19/24 21:27	1

**Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.2		1.0	0.23	ug/L		04/11/24 08:45	04/15/24 11:10	1
Barium	190		2.5	0.73	ug/L		04/11/24 08:45	04/15/24 11:10	1
Cadmium	0.73		0.50	0.17	ug/L		04/11/24 08:45	04/15/24 11:10	1
Chromium	15		5.0	1.1	ug/L		04/11/24 08:45	04/15/24 11:10	1
Lead	7.2		0.50	0.19	ug/L		04/11/24 08:45	04/15/24 11:10	1
Selenium	<0.98		2.5	0.98	ug/L		04/11/24 08:45	04/15/24 11:10	1
Silver	<0.12		0.50	0.12	ug/L		04/11/24 08:45	04/15/24 11:10	1

**Method: SW846 7470A - Mercury (CVAA)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.076		0.20	0.076	ug/L		04/26/24 10:50	04/29/24 08:11	1

**General Chemistry**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Oil & Grease (HEM) (1664B)	2.0	J	5.1	1.3	mg/L		04/27/24 09:18	04/27/24 09:35	1
pH (SM 4500 H+ B)	7.4	HF	0.2	0.2	SU			04/10/24 13:46	1

# Definitions/Glossary

Client: Ramboll Americas Engineering Solutions  
Project/Site: Mirro 4 - 1690026868

Job ID: 500-248724-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### GC/MS Semi VOA

Qualifier	Qualifier Description
*1	LCS/LCSD RPD exceeds control limits.

### LCMS

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

### General Chemistry

Qualifier	Qualifier Description
HF	Parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. Sample was analyzed outside of hold time.
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.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
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

# QC Association Summary

Client: Ramboll Americas Engineering Solutions  
Project/Site: Mirro 4 - 1690026868

Job ID: 500-248724-1

## GC/MS VOA

### Analysis Batch: 762788

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-248724-1	20240405-IDW-W	Total/NA	Water	8260D	
MB 500-762788/8	Method Blank	Total/NA	Water	8260D	
LCS 500-762788/4	Lab Control Sample	Total/NA	Water	8260D	
LCSD 500-762788/5	Lab Control Sample Dup	Total/NA	Water	8260D	

## GC/MS Semi VOA

### Prep Batch: 762667

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-248724-1	20240405-IDW-W	Total/NA	Water	3510C	
MB 500-762667/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-762667/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-762667/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

### Analysis Batch: 762857

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-248724-1	20240405-IDW-W	Total/NA	Water	8270E	762667
MB 500-762667/1-A	Method Blank	Total/NA	Water	8270E	762667
LCS 500-762667/2-A	Lab Control Sample	Total/NA	Water	8270E	762667
LCSD 500-762667/3-A	Lab Control Sample Dup	Total/NA	Water	8270E	762667

## GC Semi VOA

### Prep Batch: 763442

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-248724-1	20240405-IDW-W	Total/NA	Water	3510C	
MB 500-763442/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-763442/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-763442/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	

### Analysis Batch: 763727

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-248724-1	20240405-IDW-W	Total/NA	Water	8082A	763442
MB 500-763442/1-A	Method Blank	Total/NA	Water	8082A	763442
LCS 500-763442/4-A	Lab Control Sample	Total/NA	Water	8082A	763442
LCSD 500-763442/5-A	Lab Control Sample Dup	Total/NA	Water	8082A	763442

## LCMS

### Prep Batch: 754592

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-248724-1	20240405-IDW-W	Total/NA	Water	3535	
MB 320-754592/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-754592/3-A	Lab Control Sample	Total/NA	Water	3535	
LLCS 320-754592/2-A	Lab Control Sample	Total/NA	Water	3535	

### Analysis Batch: 756330

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-248724-1	20240405-IDW-W	Total/NA	Water	537 (modified)	754592
MB 320-754592/1-A	Method Blank	Total/NA	Water	537 (modified)	754592
LCS 320-754592/3-A	Lab Control Sample	Total/NA	Water	537 (modified)	754592
LLCS 320-754592/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	754592

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# QC Association Summary

Client: Ramboll Americas Engineering Solutions  
Project/Site: Mirro 4 - 1690026868

Job ID: 500-248724-1

## Metals

### Prep Batch: 762639

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-248724-1	20240405-IDW-W	Total Recoverable	Water	3005A	
MB 500-762639/1-A	Method Blank	Total Recoverable	Water	3005A	
LCS 500-762639/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

### Analysis Batch: 763282

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-248724-1	20240405-IDW-W	Total Recoverable	Water	6020B	762639
MB 500-762639/1-A	Method Blank	Total Recoverable	Water	6020B	762639
LCS 500-762639/2-A	Lab Control Sample	Total Recoverable	Water	6020B	762639

### Prep Batch: 765147

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-248724-1	20240405-IDW-W	Total/NA	Water	7470A	
MB 500-765147/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-765147/13-A	Lab Control Sample	Total/NA	Water	7470A	

### Analysis Batch: 765433

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-248724-1	20240405-IDW-W	Total/NA	Water	7470A	765147
MB 500-765147/12-A	Method Blank	Total/NA	Water	7470A	765147
LCS 500-765147/13-A	Lab Control Sample	Total/NA	Water	7470A	765147

## General Chemistry

### Analysis Batch: 762453

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-248724-1	20240405-IDW-W	Total/NA	Water	SM 4500 H+ B	
LCS 500-762453/5	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	
LCSD 500-762453/6	Lab Control Sample Dup	Total/NA	Water	SM 4500 H+ B	
500-248724-1 DU	20240405-IDW-W	Total/NA	Water	SM 4500 H+ B	

### Prep Batch: 765262

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-248724-1	20240405-IDW-W	Total/NA	Water	1664B	
MB 500-765262/1-A	Method Blank	Total/NA	Water	1664B	
LCS 500-765262/2-A	Lab Control Sample	Total/NA	Water	1664B	

### Analysis Batch: 765264

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-248724-1	20240405-IDW-W	Total/NA	Water	1664B	765262
MB 500-765262/1-A	Method Blank	Total/NA	Water	1664B	765262
LCS 500-765262/2-A	Lab Control Sample	Total/NA	Water	1664B	765262

# Surrogate Summary

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868

Job ID: 500-248724-1

## Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		FBF (72-124)	DBFM (75-120)	DCA (75-126)	TOL (75-120)
500-248724-1	20240405-IDW-W	86	114	89	97
LCS 500-762788/4	Lab Control Sample	83	106	84	99
LCSD 500-762788/5	Lab Control Sample Dup	85	108	82	101
MB 500-762788/8	Method Blank	88	116	88	104

#### Surrogate Legend

FBF = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

DCA = 1,2-Dichloroethane-d4 (Surr)

TOL = Toluene-d8 (Surr)

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

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		FBP (34-110)	2FP (27-110)	NBZ (36-120)	PHL (20-110)	TPHL (40-145)	TBP (40-145)
500-248724-1	20240405-IDW-W	74	48	81	34	88	81
LCS 500-762667/2-A	Lab Control Sample	75	52	91	39	92	81
LCSD 500-762667/3-A	Lab Control Sample Dup	70	50	85	37	86	76
MB 500-762667/1-A	Method Blank	71	53	84	40	93	69

#### Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)

2FP = 2-Fluorophenol (Surr)

NBZ = Nitrobenzene-d5 (Surr)

PHL = Phenol-d5 (Surr)

TPHL = Terphenyl-d14 (Surr)

TBP = 2,4,6-Tribromophenol (Surr)

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		TCX2 (30-120)	DCBP2 (30-140)
500-248724-1	20240405-IDW-W	89	92
LCS 500-763442/4-A	Lab Control Sample	84	99
LCSD 500-763442/5-A	Lab Control Sample Dup	91	94
MB 500-763442/1-A	Method Blank	72	77

#### Surrogate Legend

TCX = Tetrachloro-m-xylene

DCBP = DCB Decachlorobiphenyl

# QC Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868

Job ID: 500-248724-1

## Method: 8260D - Volatile Organic Compounds by GC/MS

**Lab Sample ID: MB 500-762788/8**  
**Matrix: Water**  
**Analysis Batch: 762788**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	<0.15		0.50	0.15	ug/L			04/12/24 11:12	1
Bromobenzene	<0.36		1.0	0.36	ug/L			04/12/24 11:12	1
Bromochloromethane	<0.43		1.0	0.43	ug/L			04/12/24 11:12	1
Bromodichloromethane	<0.37		1.0	0.37	ug/L			04/12/24 11:12	1
Bromoform	<0.48		1.0	0.48	ug/L			04/12/24 11:12	1
Bromomethane	<0.80		3.0	0.80	ug/L			04/12/24 11:12	1
Carbon tetrachloride	<0.38		1.0	0.38	ug/L			04/12/24 11:12	1
Chlorobenzene	<0.39		1.0	0.39	ug/L			04/12/24 11:12	1
Chloroethane	<0.51		5.0	0.51	ug/L			04/12/24 11:12	1
Chloroform	<0.37		2.0	0.37	ug/L			04/12/24 11:12	1
Chloromethane	<0.32		5.0	0.32	ug/L			04/12/24 11:12	1
2-Chlorotoluene	<0.31		1.0	0.31	ug/L			04/12/24 11:12	1
4-Chlorotoluene	<0.35		1.0	0.35	ug/L			04/12/24 11:12	1
cis-1,2-Dichloroethene	<0.41		1.0	0.41	ug/L			04/12/24 11:12	1
cis-1,3-Dichloropropene	<0.42		1.0	0.42	ug/L			04/12/24 11:12	1
Dibromochloromethane	<0.49		1.0	0.49	ug/L			04/12/24 11:12	1
1,2-Dibromo-3-Chloropropane	<2.0		5.0	2.0	ug/L			04/12/24 11:12	1
1,2-Dibromoethane	<0.39		1.0	0.39	ug/L			04/12/24 11:12	1
Dibromomethane	<0.27		1.0	0.27	ug/L			04/12/24 11:12	1
1,2-Dichlorobenzene	<0.33		1.0	0.33	ug/L			04/12/24 11:12	1
1,3-Dichlorobenzene	<0.40		1.0	0.40	ug/L			04/12/24 11:12	1
1,4-Dichlorobenzene	<0.36		1.0	0.36	ug/L			04/12/24 11:12	1
Dichlorodifluoromethane	<0.67		3.0	0.67	ug/L			04/12/24 11:12	1
1,1-Dichloroethane	<0.41		1.0	0.41	ug/L			04/12/24 11:12	1
1,2-Dichloroethane	<0.39		1.0	0.39	ug/L			04/12/24 11:12	1
1,1-Dichloroethene	<0.39		1.0	0.39	ug/L			04/12/24 11:12	1
1,2-Dichloropropane	<0.43		1.0	0.43	ug/L			04/12/24 11:12	1
1,3-Dichloropropane	<0.36		1.0	0.36	ug/L			04/12/24 11:12	1
2,2-Dichloropropane	<0.44		5.0	0.44	ug/L			04/12/24 11:12	1
1,1-Dichloropropene	<0.30		1.0	0.30	ug/L			04/12/24 11:12	1
Ethylbenzene	<0.18		0.50	0.18	ug/L			04/12/24 11:12	1
Hexachlorobutadiene	<0.45		1.0	0.45	ug/L			04/12/24 11:12	1
Isopropylbenzene	<0.39		1.0	0.39	ug/L			04/12/24 11:12	1
Isopropyl ether	<0.28		1.0	0.28	ug/L			04/12/24 11:12	1
Methylene Chloride	<1.6		5.0	1.6	ug/L			04/12/24 11:12	1
Methyl tert-butyl ether	<0.39		1.0	0.39	ug/L			04/12/24 11:12	1
Naphthalene	<0.34		1.0	0.34	ug/L			04/12/24 11:12	1
n-Butylbenzene	<0.39		1.0	0.39	ug/L			04/12/24 11:12	1
N-Propylbenzene	<0.41		1.0	0.41	ug/L			04/12/24 11:12	1
p-Isopropyltoluene	<0.36		1.0	0.36	ug/L			04/12/24 11:12	1
sec-Butylbenzene	<0.40		1.0	0.40	ug/L			04/12/24 11:12	1
Styrene	<0.39		1.0	0.39	ug/L			04/12/24 11:12	1
tert-Butylbenzene	<0.40		1.0	0.40	ug/L			04/12/24 11:12	1
1,1,1,2-Tetrachloroethane	<0.46		1.0	0.46	ug/L			04/12/24 11:12	1
1,1,2,2-Tetrachloroethane	<0.40		1.0	0.40	ug/L			04/12/24 11:12	1
Tetrachloroethene	<0.37		1.0	0.37	ug/L			04/12/24 11:12	1
Toluene	<0.15		0.50	0.15	ug/L			04/12/24 11:12	1
trans-1,2-Dichloroethene	<0.35		1.0	0.35	ug/L			04/12/24 11:12	1

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# QC Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868

Job ID: 500-248724-1

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: MB 500-762788/8**  
**Matrix: Water**  
**Analysis Batch: 762788**

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
trans-1,3-Dichloropropene	<0.36		1.0	0.36	ug/L			04/12/24 11:12	1
1,2,3-Trichlorobenzene	<0.46		1.0	0.46	ug/L			04/12/24 11:12	1
1,2,4-Trichlorobenzene	<0.34		1.0	0.34	ug/L			04/12/24 11:12	1
1,1,1-Trichloroethane	<0.38		1.0	0.38	ug/L			04/12/24 11:12	1
1,1,2-Trichloroethane	<0.35		1.0	0.35	ug/L			04/12/24 11:12	1
Trichloroethene	<0.16		0.50	0.16	ug/L			04/12/24 11:12	1
Trichlorofluoromethane	<0.43		1.0	0.43	ug/L			04/12/24 11:12	1
1,2,3-Trichloropropane	<0.41		2.0	0.41	ug/L			04/12/24 11:12	1
1,2,4-Trimethylbenzene	<0.36		1.0	0.36	ug/L			04/12/24 11:12	1
1,3,5-Trimethylbenzene	<0.25		1.0	0.25	ug/L			04/12/24 11:12	1
Vinyl chloride	<0.20		1.0	0.20	ug/L			04/12/24 11:12	1
Xylenes, Total	<0.22		1.0	0.22	ug/L			04/12/24 11:12	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	88		72 - 124		04/12/24 11:12	1
Dibromofluoromethane (Surr)	116		75 - 120		04/12/24 11:12	1
1,2-Dichloroethane-d4 (Surr)	88		75 - 126		04/12/24 11:12	1
Toluene-d8 (Surr)	104		75 - 120		04/12/24 11:12	1

**Lab Sample ID: LCS 500-762788/4**  
**Matrix: Water**  
**Analysis Batch: 762788**

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

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Benzene	50.0	46.3		ug/L		93	70 - 120
Bromobenzene	50.0	47.9		ug/L		96	70 - 122
Bromochloromethane	50.0	52.8		ug/L		106	65 - 122
Bromodichloromethane	50.0	46.0		ug/L		92	69 - 120
Bromoform	50.0	48.5		ug/L		97	56 - 132
Bromomethane	50.0	39.0		ug/L		78	40 - 152
Carbon tetrachloride	50.0	56.3		ug/L		113	59 - 133
Chlorobenzene	50.0	46.6		ug/L		93	70 - 120
Chloroethane	50.0	24.4		ug/L		49	48 - 136
Chloroform	50.0	43.4		ug/L		87	70 - 120
Chloromethane	50.0	54.4		ug/L		109	56 - 152
2-Chlorotoluene	50.0	40.0		ug/L		80	70 - 125
4-Chlorotoluene	50.0	42.4		ug/L		85	68 - 124
cis-1,2-Dichloroethene	50.0	49.0		ug/L		98	70 - 125
cis-1,3-Dichloropropene	50.0	40.9		ug/L		82	64 - 127
Dibromochloromethane	50.0	44.3		ug/L		89	68 - 125
1,2-Dibromo-3-Chloropropane	50.0	34.2		ug/L		68	56 - 123
1,2-Dibromoethane	50.0	45.6		ug/L		91	70 - 125
Dibromomethane	50.0	46.8		ug/L		94	70 - 120
1,2-Dichlorobenzene	50.0	45.1		ug/L		90	70 - 125
1,3-Dichlorobenzene	50.0	47.3		ug/L		95	70 - 125
1,4-Dichlorobenzene	50.0	46.0		ug/L		92	70 - 120
Dichlorodifluoromethane	50.0	49.4		ug/L		99	40 - 159
1,1-Dichloroethane	50.0	47.7		ug/L		95	70 - 125

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# QC Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868

Job ID: 500-248724-1

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCS 500-762788/4**  
**Matrix: Water**  
**Analysis Batch: 762788**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dichloroethane	50.0	47.4		ug/L		95	68 - 127
1,1-Dichloroethene	50.0	48.3		ug/L		97	67 - 122
1,2-Dichloropropane	50.0	48.3		ug/L		97	67 - 130
1,3-Dichloropropane	50.0	41.2		ug/L		82	62 - 136
2,2-Dichloropropane	50.0	44.3		ug/L		89	58 - 139
1,1-Dichloropropene	50.0	47.5		ug/L		95	70 - 121
Ethylbenzene	50.0	42.5		ug/L		85	70 - 123
Hexachlorobutadiene	50.0	55.5		ug/L		111	51 - 150
Isopropylbenzene	50.0	42.1		ug/L		84	70 - 126
Methylene Chloride	50.0	49.4		ug/L		99	69 - 125
Methyl tert-butyl ether	50.0	44.5		ug/L		89	55 - 123
Naphthalene	50.0	36.7		ug/L		73	53 - 144
n-Butylbenzene	50.0	41.3		ug/L		83	68 - 125
N-Propylbenzene	50.0	40.9		ug/L		82	69 - 127
p-Isopropyltoluene	50.0	44.1		ug/L		88	70 - 125
sec-Butylbenzene	50.0	41.9		ug/L		84	70 - 123
Styrene	50.0	46.3		ug/L		93	70 - 120
tert-Butylbenzene	50.0	43.5		ug/L		87	70 - 121
1,1,1,2-Tetrachloroethane	50.0	49.2		ug/L		98	70 - 125
1,1,2,2-Tetrachloroethane	50.0	39.4		ug/L		79	62 - 140
Tetrachloroethene	50.0	49.3		ug/L		99	70 - 128
Toluene	50.0	42.0		ug/L		84	70 - 125
trans-1,2-Dichloroethene	50.0	49.1		ug/L		98	70 - 125
trans-1,3-Dichloropropene	50.0	40.1		ug/L		80	62 - 128
1,2,3-Trichlorobenzene	50.0	42.6		ug/L		85	51 - 145
1,2,4-Trichlorobenzene	50.0	43.9		ug/L		88	57 - 137
1,1,1-Trichloroethane	50.0	50.8		ug/L		102	70 - 125
1,1,2-Trichloroethane	50.0	44.3		ug/L		89	71 - 130
Trichloroethene	50.0	55.9		ug/L		112	70 - 125
Trichlorofluoromethane	50.0	53.2		ug/L		106	55 - 128
1,2,3-Trichloropropane	50.0	41.5		ug/L		83	50 - 133
1,2,4-Trimethylbenzene	50.0	42.9		ug/L		86	70 - 123
1,3,5-Trimethylbenzene	50.0	41.6		ug/L		83	70 - 123
Vinyl chloride	50.0	62.6		ug/L		125	64 - 126
Xylenes, Total	100	88.4		ug/L		88	70 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	83		72 - 124
Dibromofluoromethane (Surr)	106		75 - 120
1,2-Dichloroethane-d4 (Surr)	84		75 - 126
Toluene-d8 (Surr)	99		75 - 120

**Lab Sample ID: LCSD 500-762788/5**  
**Matrix: Water**  
**Analysis Batch: 762788**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	50.0	47.9		ug/L		96	70 - 120	3	20

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# QC Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868

Job ID: 500-248724-1

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCSD 500-762788/5**

**Matrix: Water**

**Analysis Batch: 762788**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Bromobenzene	50.0	51.2		ug/L		102	70 - 122	7	20
Bromochloromethane	50.0	54.2		ug/L		108	65 - 122	2	20
Bromodichloromethane	50.0	45.3		ug/L		91	69 - 120	1	20
Bromoform	50.0	52.1		ug/L		104	56 - 132	7	20
Bromomethane	50.0	33.7		ug/L		67	40 - 152	15	20
Carbon tetrachloride	50.0	57.7		ug/L		115	59 - 133	2	20
Chlorobenzene	50.0	49.6		ug/L		99	70 - 120	6	20
Chloroethane	50.0	21.5	*-	ug/L		43	48 - 136	12	20
Chloroform	50.0	45.1		ug/L		90	70 - 120	4	20
Chloromethane	50.0	54.3		ug/L		109	56 - 152	0	20
2-Chlorotoluene	50.0	42.6		ug/L		85	70 - 125	6	20
4-Chlorotoluene	50.0	44.6		ug/L		89	68 - 124	5	20
cis-1,2-Dichloroethene	50.0	49.6		ug/L		99	70 - 125	1	20
cis-1,3-Dichloropropene	50.0	43.8		ug/L		88	64 - 127	7	20
Dibromochloromethane	50.0	48.2		ug/L		96	68 - 125	9	20
1,2-Dibromo-3-Chloropropane	50.0	38.5		ug/L		77	56 - 123	12	20
1,2-Dibromoethane	50.0	46.0		ug/L		92	70 - 125	1	20
Dibromomethane	50.0	48.9		ug/L		98	70 - 120	4	20
1,2-Dichlorobenzene	50.0	48.3		ug/L		97	70 - 125	7	20
1,3-Dichlorobenzene	50.0	49.7		ug/L		99	70 - 125	5	20
1,4-Dichlorobenzene	50.0	48.0		ug/L		96	70 - 120	4	20
Dichlorodifluoromethane	50.0	49.6		ug/L		99	40 - 159	0	20
1,1-Dichloroethane	50.0	49.4		ug/L		99	70 - 125	3	20
1,2-Dichloroethane	50.0	48.3		ug/L		97	68 - 127	2	20
1,1-Dichloroethene	50.0	51.1		ug/L		102	67 - 122	6	20
1,2-Dichloropropane	50.0	49.0		ug/L		98	67 - 130	1	20
1,3-Dichloropropane	50.0	43.2		ug/L		86	62 - 136	5	20
2,2-Dichloropropane	50.0	45.5		ug/L		91	58 - 139	3	20
1,1-Dichloropropene	50.0	48.2		ug/L		96	70 - 121	1	20
Ethylbenzene	50.0	45.8		ug/L		92	70 - 123	7	20
Hexachlorobutadiene	50.0	58.4		ug/L		117	51 - 150	5	20
Isopropylbenzene	50.0	44.5		ug/L		89	70 - 126	6	20
Methylene Chloride	50.0	50.5		ug/L		101	69 - 125	2	20
Methyl tert-butyl ether	50.0	46.1		ug/L		92	55 - 123	4	20
Naphthalene	50.0	40.8		ug/L		82	53 - 144	11	20
n-Butylbenzene	50.0	42.3		ug/L		85	68 - 125	2	20
N-Propylbenzene	50.0	43.1		ug/L		86	69 - 127	5	20
p-Isopropyltoluene	50.0	48.0		ug/L		96	70 - 125	8	20
sec-Butylbenzene	50.0	44.4		ug/L		89	70 - 123	6	20
Styrene	50.0	50.2		ug/L		100	70 - 120	8	20
tert-Butylbenzene	50.0	46.5		ug/L		93	70 - 121	7	20
1,1,1,2-Tetrachloroethane	50.0	52.0		ug/L		104	70 - 125	6	20
1,1,2,2-Tetrachloroethane	50.0	41.5		ug/L		83	62 - 140	5	20
Tetrachloroethene	50.0	52.0		ug/L		104	70 - 128	5	20
Toluene	50.0	43.6		ug/L		87	70 - 125	4	20
trans-1,2-Dichloroethene	50.0	50.7		ug/L		101	70 - 125	3	20
trans-1,3-Dichloropropene	50.0	43.2		ug/L		86	62 - 128	8	20
1,2,3-Trichlorobenzene	50.0	45.5		ug/L		91	51 - 145	7	20
1,2,4-Trichlorobenzene	50.0	46.0		ug/L		92	57 - 137	5	20

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# QC Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868

Job ID: 500-248724-1

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCSD 500-762788/5**  
**Matrix: Water**  
**Analysis Batch: 762788**

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane	50.0	51.8		ug/L		104	70 - 125	2	20
1,1,2-Trichloroethane	50.0	45.5		ug/L		91	71 - 130	3	20
Trichloroethene	50.0	58.1		ug/L		116	70 - 125	4	20
Trichlorofluoromethane	50.0	52.4		ug/L		105	55 - 128	1	20
1,2,3-Trichloropropane	50.0	43.8		ug/L		88	50 - 133	5	20
1,2,4-Trimethylbenzene	50.0	45.2		ug/L		90	70 - 123	5	20
1,3,5-Trimethylbenzene	50.0	45.1		ug/L		90	70 - 123	8	20
Vinyl chloride	50.0	60.4		ug/L		121	64 - 126	4	20
Xylenes, Total	100	94.9		ug/L		95	70 - 125	7	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
4-Bromofluorobenzene (Surr)	85		72 - 124
Dibromofluoromethane (Surr)	108		75 - 120
1,2-Dichloroethane-d4 (Surr)	82		75 - 126
Toluene-d8 (Surr)	101		75 - 120

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

**Lab Sample ID: MB 500-762667/1-A**  
**Matrix: Water**  
**Analysis Batch: 762857**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 762667**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.25		0.80	0.25	ug/L		04/11/24 10:49	04/12/24 11:48	1
Acenaphthylene	<0.21		0.80	0.21	ug/L		04/11/24 10:49	04/12/24 11:48	1
Anthracene	<0.27		0.80	0.27	ug/L		04/11/24 10:49	04/12/24 11:48	1
Benzo[a]anthracene	<0.045		0.16	0.045	ug/L		04/11/24 10:49	04/12/24 11:48	1
Benzo[a]pyrene	<0.079		0.16	0.079	ug/L		04/11/24 10:49	04/12/24 11:48	1
Benzo[b]fluoranthene	<0.065		0.16	0.065	ug/L		04/11/24 10:49	04/12/24 11:48	1
Benzo[g,h,i]perylene	<0.30		0.80	0.30	ug/L		04/11/24 10:49	04/12/24 11:48	1
Benzoic acid	<4.6		16	4.6	ug/L		04/11/24 10:49	04/12/24 11:48	1
Benzo[k]fluoranthene	<0.051		0.16	0.051	ug/L		04/11/24 10:49	04/12/24 11:48	1
Benzyl alcohol	<4.8		16	4.8	ug/L		04/11/24 10:49	04/12/24 11:48	1
Bis(2-chloroethoxy)methane	<0.23		1.6	0.23	ug/L		04/11/24 10:49	04/12/24 11:48	1
Bis(2-chloroethyl)ether	<0.23		1.6	0.23	ug/L		04/11/24 10:49	04/12/24 11:48	1
Bis(2-ethylhexyl) phthalate	<1.4		8.0	1.4	ug/L		04/11/24 10:49	04/12/24 11:48	1
4-Bromophenyl phenyl ether	<0.43		4.0	0.43	ug/L		04/11/24 10:49	04/12/24 11:48	1
Butyl benzyl phthalate	<0.38		1.6	0.38	ug/L		04/11/24 10:49	04/12/24 11:48	1
Carbazole	<0.28		4.0	0.28	ug/L		04/11/24 10:49	04/12/24 11:48	1
4-Chloroaniline	<1.6		8.0	1.6	ug/L		04/11/24 10:49	04/12/24 11:48	1
4-Chloro-3-methylphenol	<1.8		8.0	1.8	ug/L		04/11/24 10:49	04/12/24 11:48	1
2-Chloronaphthalene	<0.19		1.6	0.19	ug/L		04/11/24 10:49	04/12/24 11:48	1
2-Chlorophenol	<0.45		4.0	0.45	ug/L		04/11/24 10:49	04/12/24 11:48	1
4-Chlorophenyl phenyl ether	<0.51		4.0	0.51	ug/L		04/11/24 10:49	04/12/24 11:48	1
Chrysene	<0.055		0.16	0.055	ug/L		04/11/24 10:49	04/12/24 11:48	1
Dibenz(a,h)anthracene	<0.041		0.24	0.041	ug/L		04/11/24 10:49	04/12/24 11:48	1
Dibenzofuran	<0.21		1.6	0.21	ug/L		04/11/24 10:49	04/12/24 11:48	1
1,2-Dichlorobenzene	<0.20		1.6	0.20	ug/L		04/11/24 10:49	04/12/24 11:48	1
1,3-Dichlorobenzene	<0.17		1.6	0.17	ug/L		04/11/24 10:49	04/12/24 11:48	1

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# QC Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868

Job ID: 500-248724-1

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

**Lab Sample ID: MB 500-762667/1-A**  
**Matrix: Water**  
**Analysis Batch: 762857**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 762667**

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,4-Dichlorobenzene	<0.17		1.6	0.17	ug/L		04/11/24 10:49	04/12/24 11:48	1
3,3'-Dichlorobenzidine	<1.4		4.0	1.4	ug/L		04/11/24 10:49	04/12/24 11:48	1
2,4-Dichlorophenol	<2.1		8.0	2.1	ug/L		04/11/24 10:49	04/12/24 11:48	1
Diethyl phthalate	<0.29		4.0	0.29	ug/L		04/11/24 10:49	04/12/24 11:48	1
2,4-Dimethylphenol	<1.4		8.0	1.4	ug/L		04/11/24 10:49	04/12/24 11:48	1
Dimethyl phthalate	<0.25		4.0	0.25	ug/L		04/11/24 10:49	04/12/24 11:48	1
Di-n-butyl phthalate	<0.58		4.0	0.58	ug/L		04/11/24 10:49	04/12/24 11:48	1
4,6-Dinitro-2-methylphenol	<4.7		16	4.7	ug/L		04/11/24 10:49	04/12/24 11:48	1
2,4-Dinitrophenol	<6.9		16	6.9	ug/L		04/11/24 10:49	04/12/24 11:48	1
2,4-Dinitrotoluene	<0.20		0.80	0.20	ug/L		04/11/24 10:49	04/12/24 11:48	1
2,6-Dinitrotoluene	<0.059		0.80	0.059	ug/L		04/11/24 10:49	04/12/24 11:48	1
Di-n-octyl phthalate	<0.84		8.0	0.84	ug/L		04/11/24 10:49	04/12/24 11:48	1
Fluoranthene	<0.36		0.80	0.36	ug/L		04/11/24 10:49	04/12/24 11:48	1
Fluorene	<0.20		0.80	0.20	ug/L		04/11/24 10:49	04/12/24 11:48	1
Hexachlorobenzene	<0.064		0.40	0.064	ug/L		04/11/24 10:49	04/12/24 11:48	1
Hexachlorobutadiene	<0.41		4.0	0.41	ug/L		04/11/24 10:49	04/12/24 11:48	1
Hexachlorocyclopentadiene	<5.1		16	5.1	ug/L		04/11/24 10:49	04/12/24 11:48	1
Hexachloroethane	<0.48		4.0	0.48	ug/L		04/11/24 10:49	04/12/24 11:48	1
Indeno[1,2,3-cd]pyrene	<0.060		0.16	0.060	ug/L		04/11/24 10:49	04/12/24 11:48	1
Isophorone	<0.30		1.6	0.30	ug/L		04/11/24 10:49	04/12/24 11:48	1
1-Methylnaphthalene	<0.24		1.6	0.24	ug/L		04/11/24 10:49	04/12/24 11:48	1
2-Methylnaphthalene	<0.052		1.6	0.052	ug/L		04/11/24 10:49	04/12/24 11:48	1
2-Methylphenol	<0.24		1.6	0.24	ug/L		04/11/24 10:49	04/12/24 11:48	1
3 & 4 Methylphenol	<0.36		1.6	0.36	ug/L		04/11/24 10:49	04/12/24 11:48	1
Naphthalene	<0.25		0.80	0.25	ug/L		04/11/24 10:49	04/12/24 11:48	1
2-Nitroaniline	<1.0		4.0	1.0	ug/L		04/11/24 10:49	04/12/24 11:48	1
3-Nitroaniline	<1.4		8.0	1.4	ug/L		04/11/24 10:49	04/12/24 11:48	1
4-Nitroaniline	<1.3		8.0	1.3	ug/L		04/11/24 10:49	04/12/24 11:48	1
Nitrobenzene	<0.36		0.80	0.36	ug/L		04/11/24 10:49	04/12/24 11:48	1
2-Nitrophenol	<2.0		8.0	2.0	ug/L		04/11/24 10:49	04/12/24 11:48	1
4-Nitrophenol	<5.9		16	5.9	ug/L		04/11/24 10:49	04/12/24 11:48	1
N-Nitrosodi-n-propylamine	<0.12		0.40	0.12	ug/L		04/11/24 10:49	04/12/24 11:48	1
N-Nitrosodiphenylamine	<0.30		1.6	0.30	ug/L		04/11/24 10:49	04/12/24 11:48	1
2,2'-oxybis[1-chloropropane]	<0.30		1.6	0.30	ug/L		04/11/24 10:49	04/12/24 11:48	1
Pentachlorophenol	<3.2		16	3.2	ug/L		04/11/24 10:49	04/12/24 11:48	1
Phenanthrene	<0.24		0.80	0.24	ug/L		04/11/24 10:49	04/12/24 11:48	1
Phenol	<0.54		4.0	0.54	ug/L		04/11/24 10:49	04/12/24 11:48	1
Pyrene	<0.34		0.80	0.34	ug/L		04/11/24 10:49	04/12/24 11:48	1
Pyridine	<4.0		16	4.0	ug/L		04/11/24 10:49	04/12/24 11:48	1
1,2,4-Trichlorobenzene	<0.19		1.6	0.19	ug/L		04/11/24 10:49	04/12/24 11:48	1
2,4,5-Trichlorophenol	<2.1		8.0	2.1	ug/L		04/11/24 10:49	04/12/24 11:48	1
2,4,6-Trichlorophenol	<0.57		4.0	0.57	ug/L		04/11/24 10:49	04/12/24 11:48	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2-Fluorobiphenyl (Surr)	71		34 - 110	04/11/24 10:49	04/12/24 11:48	1
2-Fluorophenol (Surr)	53		27 - 110	04/11/24 10:49	04/12/24 11:48	1
Nitrobenzene-d5 (Surr)	84		36 - 120	04/11/24 10:49	04/12/24 11:48	1
Phenol-d5 (Surr)	40		20 - 110	04/11/24 10:49	04/12/24 11:48	1

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# QC Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868

Job ID: 500-248724-1

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

**Lab Sample ID: MB 500-762667/1-A**  
**Matrix: Water**  
**Analysis Batch: 762857**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 762667**

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Terphenyl-d14 (Surr)	93		40 - 145	04/11/24 10:49	04/12/24 11:48	1
2,4,6-Tribromophenol (Surr)	69		40 - 145	04/11/24 10:49	04/12/24 11:48	1

**Lab Sample ID: LCS 500-762667/2-A**  
**Matrix: Water**  
**Analysis Batch: 762857**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 762667**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acenaphthylene	32.0	26.4		ug/L		82	47 - 113
Anthracene	32.0	29.2		ug/L		91	67 - 118
Benzo[a]anthracene	32.0	28.6		ug/L		89	70 - 126
Benzo[a]pyrene	32.0	30.8		ug/L		96	70 - 135
Benzo[b]fluoranthene	32.0	31.1		ug/L		97	69 - 136
Benzo[g,h,i]perylene	32.0	33.7		ug/L		105	70 - 135
Benzoic acid	64.0	20.9		ug/L		33	10 - 112
Benzo[k]fluoranthene	32.0	30.4		ug/L		95	70 - 133
Benzyl alcohol	32.0	22.5		ug/L		70	46 - 132
Bis(2-chloroethoxy)methane	32.0	27.2		ug/L		85	59 - 118
Bis(2-chloroethyl)ether	32.0	27.0		ug/L		84	54 - 112
Bis(2-ethylhexyl) phthalate	32.0	28.7		ug/L		90	69 - 136
4-Bromophenyl phenyl ether	32.0	24.5		ug/L		77	58 - 120
Butyl benzyl phthalate	32.0	31.1		ug/L		97	68 - 135
Carbazole	32.0	30.7		ug/L		96	61 - 145
4-Chloroaniline	32.0	21.7		ug/L		68	35 - 128
4-Chloro-3-methylphenol	32.0	27.4		ug/L		85	64 - 128
2-Chloronaphthalene	32.0	23.4		ug/L		73	39 - 110
2-Chlorophenol	32.0	24.2		ug/L		76	59 - 110
4-Chlorophenyl phenyl ether	32.0	24.8		ug/L		78	48 - 116
Chrysene	32.0	30.1		ug/L		94	68 - 129
Dibenz(a,h)anthracene	32.0	32.7		ug/L		102	70 - 134
Dibenzofuran	32.0	25.8		ug/L		81	51 - 110
1,2-Dichlorobenzene	32.0	19.9		ug/L		62	26 - 110
1,3-Dichlorobenzene	32.0	19.4		ug/L		60	22 - 110
1,4-Dichlorobenzene	32.0	19.4		ug/L		61	23 - 110
3,3'-Dichlorobenzidine	32.0	27.6		ug/L		86	60 - 132
2,4-Dichlorophenol	32.0	24.5		ug/L		77	58 - 120
Diethyl phthalate	32.0	30.7		ug/L		96	62 - 123
2,4-Dimethylphenol	32.0	23.2		ug/L		73	51 - 115
Dimethyl phthalate	32.0	29.4		ug/L		92	63 - 122
Di-n-butyl phthalate	32.0	30.5		ug/L		95	69 - 129
4,6-Dinitro-2-methylphenol	64.0	53.2		ug/L		83	50 - 129
2,4-Dinitrophenol	64.0	42.9		ug/L		67	37 - 130
2,4-Dinitrotoluene	32.0	29.3		ug/L		92	63 - 129
2,6-Dinitrotoluene	32.0	29.0		ug/L		91	63 - 129
Di-n-octyl phthalate	32.0	29.2		ug/L		91	68 - 137
Fluoranthene	32.0	31.1		ug/L		97	68 - 126
Fluorene	32.0	28.0		ug/L		87	53 - 120

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# QC Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868

Job ID: 500-248724-1

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

**Lab Sample ID: LCS 500-762667/2-A**  
**Matrix: Water**  
**Analysis Batch: 762857**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 762667**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Hexachlorobenzene	32.0	26.2		ug/L		82	61 - 126
Hexachlorobutadiene	32.0	16.9		ug/L		53	20 - 100
Hexachlorocyclopentadiene	32.0	<5.1		ug/L		11	10 - 105
Hexachloroethane	32.0	19.8		ug/L		62	20 - 100
Indeno[1,2,3-cd]pyrene	32.0	31.4		ug/L		98	65 - 133
Isophorone	32.0	26.8		ug/L		84	54 - 127
1-Methylnaphthalene	32.0	23.4		ug/L		73	38 - 110
2-Methylnaphthalene	32.0	22.9		ug/L		72	34 - 110
2-Methylphenol	32.0	23.0		ug/L		72	53 - 115
3 & 4 Methylphenol	32.0	22.1		ug/L		69	50 - 116
Naphthalene	32.0	22.6		ug/L		70	36 - 110
2-Nitroaniline	32.0	33.6		ug/L		105	59 - 138
3-Nitroaniline	32.0	27.2		ug/L		85	47 - 123
4-Nitroaniline	32.0	28.1		ug/L		88	35 - 110
Nitrobenzene	32.0	27.1		ug/L		85	54 - 121
2-Nitrophenol	32.0	24.9		ug/L		78	59 - 115
4-Nitrophenol	64.0	31.6		ug/L		49	20 - 110
N-Nitrosodi-n-propylamine	32.0	30.0		ug/L		94	47 - 131
N-Nitrosodiphenylamine	32.0	28.1		ug/L		88	66 - 120
2,2'-oxybis[1-chloropropane]	32.0	28.9		ug/L		90	38 - 140
Pentachlorophenol	64.0	37.7		ug/L		59	42 - 148
Phenanthrene	32.0	29.4		ug/L		92	65 - 120
Phenol	32.0	13.0		ug/L		41	33 - 100
Pyrene	32.0	30.5		ug/L		95	70 - 126
Pyridine	64.0	20.8		ug/L		33	15 - 110
1,2,4-Trichlorobenzene	32.0	19.0		ug/L		59	26 - 110
2,4,5-Trichlorophenol	32.0	27.0		ug/L		84	63 - 124
2,4,6-Trichlorophenol	32.0	26.5		ug/L		83	62 - 121

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl (Surr)	75		34 - 110
2-Fluorophenol (Surr)	52		27 - 110
Nitrobenzene-d5 (Surr)	91		36 - 120
Phenol-d5 (Surr)	39		20 - 110
Terphenyl-d14 (Surr)	92		40 - 145
2,4,6-Tribromophenol (Surr)	81		40 - 145

**Lab Sample ID: LCSD 500-762667/3-A**  
**Matrix: Water**  
**Analysis Batch: 762857**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 762667**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acenaphthene	32.0	24.4		ug/L		76	46 - 110	8	20
Acenaphthylene	32.0	24.2		ug/L		76	47 - 113	9	20
Anthracene	32.0	27.3		ug/L		85	67 - 118	7	20
Benzo[a]anthracene	32.0	25.8		ug/L		81	70 - 126	10	20
Benzo[a]pyrene	32.0	28.6		ug/L		89	70 - 135	7	20
Benzo[b]fluoranthene	32.0	29.0		ug/L		91	69 - 136	7	20

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# QC Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868

Job ID: 500-248724-1

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

**Lab Sample ID: LCSD 500-762667/3-A**

**Matrix: Water**

**Analysis Batch: 762857**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 762667**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	RPD Limit
							Limits	RPD		
Benzo[g,h,i]perylene	32.0	30.0		ug/L		94	70 - 135	11	20	
Benzoic acid	64.0	19.7		ug/L		31	10 - 112	6	20	
Benzo[k]fluoranthene	32.0	28.3		ug/L		88	70 - 133	7	20	
Benzyl alcohol	32.0	20.5		ug/L		64	46 - 132	10	20	
Bis(2-chloroethoxy)methane	32.0	25.0		ug/L		78	59 - 118	9	20	
Bis(2-chloroethyl)ether	32.0	24.8		ug/L		78	54 - 112	8	20	
Bis(2-ethylhexyl) phthalate	32.0	25.5		ug/L		80	69 - 136	12	20	
4-Bromophenyl phenyl ether	32.0	21.9		ug/L		68	58 - 120	11	20	
Butyl benzyl phthalate	32.0	28.1		ug/L		88	68 - 135	10	20	
Carbazole	32.0	29.1		ug/L		91	61 - 145	5	20	
4-Chloroaniline	32.0	19.1		ug/L		60	35 - 128	13	20	
4-Chloro-3-methylphenol	32.0	25.5		ug/L		80	64 - 128	7	20	
2-Chloronaphthalene	32.0	21.2		ug/L		66	39 - 110	10	20	
2-Chlorophenol	32.0	21.7		ug/L		68	59 - 110	11	20	
4-Chlorophenyl phenyl ether	32.0	22.5		ug/L		70	48 - 116	10	20	
Chrysene	32.0	27.3		ug/L		85	68 - 129	10	20	
Dibenz(a,h)anthracene	32.0	30.1		ug/L		94	70 - 134	8	20	
Dibenzofuran	32.0	23.4		ug/L		73	51 - 110	10	20	
1,2-Dichlorobenzene	32.0	17.6		ug/L		55	26 - 110	12	20	
1,3-Dichlorobenzene	32.0	16.9		ug/L		53	22 - 110	14	20	
1,4-Dichlorobenzene	32.0	17.0		ug/L		53	23 - 110	13	20	
3,3'-Dichlorobenzidine	32.0	24.9		ug/L		78	60 - 132	10	20	
2,4-Dichlorophenol	32.0	22.7		ug/L		71	58 - 120	8	20	
Diethyl phthalate	32.0	27.6		ug/L		86	62 - 123	11	20	
2,4-Dimethylphenol	32.0	21.6		ug/L		68	51 - 115	7	20	
Dimethyl phthalate	32.0	26.6		ug/L		83	63 - 122	10	20	
Di-n-butyl phthalate	32.0	28.8		ug/L		90	69 - 129	6	20	
4,6-Dinitro-2-methylphenol	64.0	51.0		ug/L		80	50 - 129	4	20	
2,4-Dinitrophenol	64.0	39.1		ug/L		61	37 - 130	9	20	
2,4-Dinitrotoluene	32.0	27.0		ug/L		84	63 - 129	8	20	
2,6-Dinitrotoluene	32.0	25.8		ug/L		81	63 - 129	12	20	
Di-n-octyl phthalate	32.0	27.4		ug/L		86	68 - 137	6	20	
Fluoranthene	32.0	29.1		ug/L		91	68 - 126	7	20	
Fluorene	32.0	25.0		ug/L		78	53 - 120	11	20	
Hexachlorobenzene	32.0	22.8		ug/L		71	61 - 126	14	20	
Hexachlorobutadiene	32.0	16.0		ug/L		50	20 - 100	6	20	
Hexachlorocyclopentadiene	32.0	<5.1		ug/L		10	10 - 105	9	20	
Hexachloroethane	32.0	17.7		ug/L		55	20 - 100	11	20	
Indeno[1,2,3-cd]pyrene	32.0	28.7		ug/L		90	65 - 133	9	20	
Isophorone	32.0	24.2		ug/L		76	54 - 127	10	20	
1-Methylnaphthalene	32.0	21.3		ug/L		67	38 - 110	9	20	
2-Methylnaphthalene	32.0	20.8		ug/L		65	34 - 110	9	20	
2-Methylphenol	32.0	20.8		ug/L		65	53 - 115	10	20	
3 & 4 Methylphenol	32.0	19.9		ug/L		62	50 - 116	10	20	
Naphthalene	32.0	20.8		ug/L		65	36 - 110	8	20	
2-Nitroaniline	32.0	30.9		ug/L		96	59 - 138	8	20	
3-Nitroaniline	32.0	24.7		ug/L		77	47 - 123	10	20	
4-Nitroaniline	32.0	26.8		ug/L		84	35 - 110	5	20	
Nitrobenzene	32.0	25.7		ug/L		80	54 - 121	5	20	

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# QC Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868

Job ID: 500-248724-1

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

Lab Sample ID: LCSD 500-762667/3-A  
 Matrix: Water  
 Analysis Batch: 762857

Client Sample ID: Lab Control Sample Dup  
 Prep Type: Total/NA  
 Prep Batch: 762667

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2-Nitrophenol	32.0	22.7		ug/L		71	59 - 115	9	20
4-Nitrophenol	64.0	30.6		ug/L		48	20 - 110	3	20
N-Nitrosodi-n-propylamine	32.0	27.2		ug/L		85	47 - 131	10	20
N-Nitrosodiphenylamine	32.0	27.1		ug/L		85	66 - 120	4	20
2,2'-oxybis[1-chloropropane]	32.0	25.6		ug/L		80	38 - 140	12	20
Pentachlorophenol	64.0	35.3		ug/L		55	42 - 148	7	20
Phenanthrene	32.0	26.6		ug/L		83	65 - 120	10	20
Phenol	32.0	12.3		ug/L		38	33 - 100	6	20
Pyrene	32.0	27.8		ug/L		87	70 - 126	9	20
Pyridine	64.0	16.7	*1	ug/L		26	15 - 110	22	20
1,2,4-Trichlorobenzene	32.0	17.4		ug/L		54	26 - 110	9	20
2,4,5-Trichlorophenol	32.0	23.8		ug/L		74	63 - 124	13	20
2,4,6-Trichlorophenol	32.0	23.8		ug/L		74	62 - 121	11	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
2-Fluorobiphenyl (Surr)	70		34 - 110
2-Fluorophenol (Surr)	50		27 - 110
Nitrobenzene-d5 (Surr)	85		36 - 120
Phenol-d5 (Surr)	37		20 - 110
Terphenyl-d14 (Surr)	86		40 - 145
2,4,6-Tribromophenol (Surr)	76		40 - 145

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 500-763442/1-A  
 Matrix: Water  
 Analysis Batch: 763727

Client Sample ID: Method Blank  
 Prep Type: Total/NA  
 Prep Batch: 763442

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.067		0.40	0.067	ug/L		04/16/24 17:01	04/18/24 13:28	1
PCB-1221	<0.20		0.40	0.20	ug/L		04/16/24 17:01	04/18/24 13:28	1
PCB-1232	<0.20		0.40	0.20	ug/L		04/16/24 17:01	04/18/24 13:28	1
PCB-1242	<0.20		0.40	0.20	ug/L		04/16/24 17:01	04/18/24 13:28	1
PCB-1248	<0.20		0.40	0.20	ug/L		04/16/24 17:01	04/18/24 13:28	1
PCB-1254	<0.20		0.40	0.20	ug/L		04/16/24 17:01	04/18/24 13:28	1
PCB-1260	<0.070		0.40	0.070	ug/L		04/16/24 17:01	04/18/24 13:28	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	72		30 - 120	04/16/24 17:01	04/18/24 13:28	1
DCB Decachlorobiphenyl	77		30 - 140	04/16/24 17:01	04/18/24 13:28	1

Lab Sample ID: LCS 500-763442/4-A  
 Matrix: Water  
 Analysis Batch: 763727

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 763442

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
PCB-1016	4.00	3.74		ug/L		93	56 - 120
PCB-1260	4.00	3.69		ug/L		92	53 - 137

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# QC Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868

Job ID: 500-248724-1

## Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

**Lab Sample ID: LCS 500-763442/4-A**  
**Matrix: Water**  
**Analysis Batch: 763727**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 763442**

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Tetrachloro- <i>m</i> -xylene	84		30 - 120
DCB Decachlorobiphenyl	99		30 - 140

**Lab Sample ID: LCSD 500-763442/5-A**  
**Matrix: Water**  
**Analysis Batch: 763727**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 763442**

Analyte	Spike Added	LCSD LCSD		Unit	D	%Rec	%Rec		RPD	Limit
		Result	Qualifier				Limits	RPD		
PCB-1016	4.00	3.93		ug/L		98	56 - 120	5	20	
PCB-1260	4.00	3.82		ug/L		96	53 - 137	4	20	

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
Tetrachloro- <i>m</i> -xylene	91		30 - 120
DCB Decachlorobiphenyl	94		30 - 140

## Method: 537 (modified) - Fluorinated Alkyl Substances

**Lab Sample ID: MB 320-754592/1-A**  
**Matrix: Water**  
**Analysis Batch: 756330**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 754592**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorobutanoic acid (PFBA)	<2.4		5.0	2.4	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluoropentanoic acid (PFPeA)	<0.49		2.0	0.49	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluorohexanoic acid (PFHxA)	<0.58		2.0	0.58	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluoroheptanoic acid (PFHpA)	<0.25		2.0	0.25	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluorooctanoic acid (PFOA)	<0.85		2.0	0.85	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluorononanoic acid (PFNA)	<0.27		2.0	0.27	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluorodecanoic acid (PFDA)	<0.31		2.0	0.31	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluoroundecanoic acid (PFUnA)	<1.1		2.0	1.1	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluorododecanoic acid (PFDoA)	<0.55		2.0	0.55	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluorotridecanoic acid (PFTrDA)	<1.3		2.0	1.3	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluorotetradecanoic acid (PFTeA)	<0.73		2.0	0.73	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluorobutanesulfonic acid (PFBS)	<0.20		2.0	0.20	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluoropentanesulfonic acid (PFPeS)	<0.30		2.0	0.30	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluorohexanesulfonic acid (PFHxS)	<0.57		2.0	0.57	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluoroheptanesulfonic acid (PFHpS)	<0.19		2.0	0.19	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluorooctanesulfonic acid (PFOS)	<0.54		2.0	0.54	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluorononanesulfonic acid (PFNS)	<0.37		2.0	0.37	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluorodecanesulfonic acid (PFDS)	<0.32		2.0	0.32	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluorododecanesulfonic acid (PFDoS)	<0.97		2.0	0.97	ng/L		04/15/24 04:45	04/19/24 20:57	1
Perfluorooctanesulfonamide (FOSA)	<0.98		2.0	0.98	ng/L		04/15/24 04:45	04/19/24 20:57	1
NEtFOSA	<0.87		2.0	0.87	ng/L		04/15/24 04:45	04/19/24 20:57	1
NMeFOSA	<0.43		2.0	0.43	ng/L		04/15/24 04:45	04/19/24 20:57	1
NMeFOSAA	<1.2		5.0	1.2	ng/L		04/15/24 04:45	04/19/24 20:57	1
NEtFOSAA	<1.3		5.0	1.3	ng/L		04/15/24 04:45	04/19/24 20:57	1

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# QC Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868

Job ID: 500-248724-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: MB 320-754592/1-A**  
**Matrix: Water**  
**Analysis Batch: 756330**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 754592**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
NMeFOSE	<1.4		4.0	1.4	ng/L		04/15/24 04:45	04/19/24 20:57	1
NEtFOSE	<0.85		2.0	0.85	ng/L		04/15/24 04:45	04/19/24 20:57	1
4:2 FTS	<0.24		2.0	0.24	ng/L		04/15/24 04:45	04/19/24 20:57	1
6:2 FTS	<2.5		5.0	2.5	ng/L		04/15/24 04:45	04/19/24 20:57	1
8:2 FTS	<0.46		2.0	0.46	ng/L		04/15/24 04:45	04/19/24 20:57	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	<0.40		2.0	0.40	ng/L		04/15/24 04:45	04/19/24 20:57	1
HFPO-DA (GenX)	<1.5		4.0	1.5	ng/L		04/15/24 04:45	04/19/24 20:57	1
9Cl-PF3ONS	<0.24		2.0	0.24	ng/L		04/15/24 04:45	04/19/24 20:57	1
11Cl-PF3OUdS	<0.32		2.0	0.32	ng/L		04/15/24 04:45	04/19/24 20:57	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	92		25 - 150	04/15/24 04:45	04/19/24 20:57	1
13C5 PFPeA	93		25 - 150	04/15/24 04:45	04/19/24 20:57	1
13C2 PFHxA	86		25 - 150	04/15/24 04:45	04/19/24 20:57	1
13C4 PFHpA	93		25 - 150	04/15/24 04:45	04/19/24 20:57	1
13C4 PFOA	92		25 - 150	04/15/24 04:45	04/19/24 20:57	1
13C5 PFNA	94		25 - 150	04/15/24 04:45	04/19/24 20:57	1
13C2 PFDA	101		25 - 150	04/15/24 04:45	04/19/24 20:57	1
13C2 PFUnA	92		25 - 150	04/15/24 04:45	04/19/24 20:57	1
13C2 PFDoA	91		25 - 150	04/15/24 04:45	04/19/24 20:57	1
13C2 PFTeDA	92		25 - 150	04/15/24 04:45	04/19/24 20:57	1
13C3 PFBS	94		25 - 150	04/15/24 04:45	04/19/24 20:57	1
18O2 PFHxS	95		25 - 150	04/15/24 04:45	04/19/24 20:57	1
13C4 PFOS	95		25 - 150	04/15/24 04:45	04/19/24 20:57	1
13C8 FOSA	96		10 - 150	04/15/24 04:45	04/19/24 20:57	1
d3-NMeFOSAA	93		25 - 150	04/15/24 04:45	04/19/24 20:57	1
d5-NEtFOSAA	98		25 - 150	04/15/24 04:45	04/19/24 20:57	1
d-N-MeFOSA-M	79		10 - 150	04/15/24 04:45	04/19/24 20:57	1
d-N-EtFOSA-M	87		10 - 150	04/15/24 04:45	04/19/24 20:57	1
d7-N-MeFOSE-M	90		10 - 150	04/15/24 04:45	04/19/24 20:57	1
d9-N-EtFOSE-M	86		10 - 150	04/15/24 04:45	04/19/24 20:57	1
M2-4:2 FTS	101		25 - 150	04/15/24 04:45	04/19/24 20:57	1
M2-6:2 FTS	100		25 - 150	04/15/24 04:45	04/19/24 20:57	1
M2-8:2 FTS	102		25 - 150	04/15/24 04:45	04/19/24 20:57	1
13C3 HFPO-DA	88		25 - 150	04/15/24 04:45	04/19/24 20:57	1
13C2 10:2 FTS	100		25 - 150	04/15/24 04:45	04/19/24 20:57	1

**Lab Sample ID: LCS 320-754592/3-A**  
**Matrix: Water**  
**Analysis Batch: 756330**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 754592**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Perfluorobutanoic acid (PFBA)	40.0	40.6		ng/L		101	60 - 135
Perfluoropentanoic acid (PFPeA)	40.0	42.0		ng/L		105	60 - 135
Perfluorohexanoic acid (PFHxA)	40.0	42.9		ng/L		107	60 - 135
Perfluoroheptanoic acid (PFHpA)	40.0	42.2		ng/L		106	60 - 135
Perfluorooctanoic acid (PFOA)	40.0	42.4		ng/L		106	60 - 135
Perfluorononanoic acid (PFNA)	40.0	44.6		ng/L		112	60 - 135

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# QC Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868

Job ID: 500-248724-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: LCS 320-754592/3-A**  
**Matrix: Water**  
**Analysis Batch: 756330**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 754592**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorodecanoic acid (PFDA)	40.0	38.7		ng/L		97	60 - 135
Perfluoroundecanoic acid (PFUnA)	40.0	42.5		ng/L		106	60 - 135
Perfluorododecanoic acid (PFDoA)	40.0	45.6		ng/L		114	60 - 135
Perfluorotridecanoic acid (PFTrDA)	40.0	42.3		ng/L		106	60 - 135
Perfluorotetradecanoic acid (PFTeA)	40.0	43.5		ng/L		109	60 - 135
Perfluorobutanesulfonic acid (PFBS)	35.5	39.0		ng/L		110	60 - 135
Perfluoropentanesulfonic acid (PFPeS)	37.6	39.3		ng/L		104	60 - 135
Perfluorohexanesulfonic acid (PFHxS)	36.5	37.2		ng/L		102	60 - 135
Perfluoroheptanesulfonic acid (PFHpS)	38.2	42.1		ng/L		110	60 - 135
Perfluorooctanesulfonic acid (PFOS)	37.2	38.8		ng/L		104	60 - 135
Perfluorononanesulfonic acid (PFNS)	38.5	40.9		ng/L		106	60 - 135
Perfluorodecanesulfonic acid (PFDS)	38.6	39.4		ng/L		102	60 - 135
Perfluorododecanesulfonic acid (PFDoS)	38.8	38.3		ng/L		99	60 - 135
Perfluorooctanesulfonamide (FOSA)	40.0	39.7		ng/L		99	60 - 135
NEtFOSA	40.0	40.1		ng/L		100	60 - 135
NMeFOSA	40.0	44.2		ng/L		110	60 - 135
NMeFOSAA	40.0	44.9		ng/L		112	60 - 135
NEtFOSAA	40.0	43.2		ng/L		108	60 - 135
NMeFOSE	40.0	39.7		ng/L		99	60 - 135
NEtFOSE	40.0	45.6		ng/L		114	60 - 135
4:2 FTS	37.5	39.1		ng/L		104	60 - 135
6:2 FTS	38.1	41.4		ng/L		109	60 - 135
8:2 FTS	38.4	40.5		ng/L		106	60 - 135
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	37.8	39.8		ng/L		105	60 - 135
HFPO-DA (GenX)	40.0	45.2		ng/L		113	60 - 135
9Cl-PF3ONS	37.4	39.0		ng/L		104	60 - 135
11Cl-PF3OUdS	37.8	39.4		ng/L		104	60 - 135

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C4 PFBA	92		25 - 150
13C5 PFPeA	91		25 - 150
13C2 PFHxA	92		25 - 150
13C4 PFHpA	96		25 - 150
13C4 PFOA	93		25 - 150
13C5 PFNA	94		25 - 150
13C2 PFDA	99		25 - 150
13C2 PFUnA	95		25 - 150
13C2 PFDoA	91		25 - 150

# QC Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868

Job ID: 500-248724-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: LCS 320-754592/3-A**  
**Matrix: Water**  
**Analysis Batch: 756330**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 754592**

Isotope Dilution	LCS		Limits
	%Recovery	Qualifier	
13C2 PFTeDA	89		25 - 150
13C3 PFBS	95		25 - 150
18O2 PFHxS	94		25 - 150
13C4 PFOS	95		25 - 150
13C8 FOSA	98		10 - 150
d3-NMeFOSAA	92		25 - 150
d5-NEtFOSAA	95		25 - 150
d-N-MeFOSA-M	81		10 - 150
d-N-EtFOSA-M	86		10 - 150
d7-N-MeFOSE-M	91		10 - 150
d9-N-EtFOSE-M	84		10 - 150
M2-4:2 FTS	101		25 - 150
M2-6:2 FTS	97		25 - 150
M2-8:2 FTS	103		25 - 150
13C3 HFPO-DA	86		25 - 150
13C2 10:2 FTS	98		25 - 150

**Lab Sample ID: LLCS 320-754592/2-A**  
**Matrix: Water**  
**Analysis Batch: 756330**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 754592**

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec
							Limits
Perfluorobutanoic acid (PFBA)	8.00	7.69		ng/L		96	50 - 150
Perfluoropentanoic acid (PFPeA)	8.00	8.57		ng/L		107	50 - 150
Perfluorohexanoic acid (PFHxA)	8.00	9.21		ng/L		115	50 - 150
Perfluoroheptanoic acid (PFHpA)	8.00	8.43		ng/L		105	50 - 150
Perfluorooctanoic acid (PFOA)	8.00	8.49		ng/L		106	50 - 150
Perfluorononanoic acid (PFNA)	8.00	8.78		ng/L		110	50 - 150
Perfluorodecanoic acid (PFDA)	8.00	8.25		ng/L		103	50 - 150
Perfluoroundecanoic acid (PFUnA)	8.00	8.10		ng/L		101	50 - 150
Perfluorododecanoic acid (PFDoA)	8.00	8.85		ng/L		111	50 - 150
Perfluorotridecanoic acid (PFTrDA)	8.00	8.30		ng/L		104	50 - 150
Perfluorotetradecanoic acid (PFTeA)	8.00	8.15		ng/L		102	50 - 150
Perfluorobutanesulfonic acid (PFBS)	7.10	7.44		ng/L		105	50 - 150
Perfluoropentanesulfonic acid (PFPeS)	7.52	7.98		ng/L		106	50 - 150
Perfluorohexanesulfonic acid (PFHxS)	7.30	7.80		ng/L		107	50 - 150
Perfluoroheptanesulfonic acid (PFHpS)	7.63	8.05		ng/L		106	50 - 150
Perfluorooctanesulfonic acid (PFOS)	7.44	8.02		ng/L		108	50 - 150
Perfluorononanesulfonic acid (PFNS)	7.70	8.51		ng/L		111	50 - 150
Perfluorodecanesulfonic acid (PFDS)	7.71	7.88		ng/L		102	50 - 150

# QC Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868

Job ID: 500-248724-1

## Method: 537 (modified) - Fluorinated Alkyl Substances (Continued)

**Lab Sample ID: LLCS 320-754592/2-A**  
**Matrix: Water**  
**Analysis Batch: 756330**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 754592**

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorododecanesulfonic acid (PFDoS)	7.76	8.95		ng/L		115	50 - 150
Perfluorooctanesulfonamide (FOSA)	8.00	8.07		ng/L		101	50 - 150
NEtFOSA	8.00	8.50		ng/L		106	50 - 150
NMeFOSA	8.00	8.78		ng/L		110	50 - 150
NMeFOSAA	8.00	9.46		ng/L		118	50 - 150
NEtFOSAA	8.00	8.82		ng/L		110	50 - 150
NMeFOSE	8.00	8.04		ng/L		101	50 - 150
NEtFOSE	8.00	8.87		ng/L		111	50 - 150
4:2 FTS	7.50	7.60		ng/L		101	50 - 150
6:2 FTS	7.62	7.97		ng/L		105	50 - 150
8:2 FTS	7.68	8.04		ng/L		105	50 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	7.57	8.02		ng/L		106	50 - 150
HFPO-DA (GenX)	8.00	8.99		ng/L		112	50 - 150
9CI-PF3ONS	7.47	7.97		ng/L		107	50 - 150
11CI-PF3OUdS	7.55	8.08		ng/L		107	50 - 150

Isotope Dilution	LLCS		Limits
	%Recovery	Qualifier	
13C4 PFBA	96		25 - 150
13C5 PFPeA	89		25 - 150
13C2 PFHxA	93		25 - 150
13C4 PFHpA	96		25 - 150
13C4 PFOA	93		25 - 150
13C5 PFNA	96		25 - 150
13C2 PFDA	97		25 - 150
13C2 PFUnA	93		25 - 150
13C2 PFDoA	96		25 - 150
13C2 PFTeDA	94		25 - 150
13C3 PFBS	96		25 - 150
18O2 PFHxS	95		25 - 150
13C4 PFOS	96		25 - 150
13C8 FOSA	98		10 - 150
d3-NMeFOSAA	94		25 - 150
d5-NEtFOSAA	97		25 - 150
d-N-MeFOSA-M	76		10 - 150
d-N-EtFOSA-M	82		10 - 150
d7-N-MeFOSE-M	87		10 - 150
d9-N-EtFOSE-M	86		10 - 150
M2-4:2 FTS	104		25 - 150
M2-6:2 FTS	99		25 - 150
M2-8:2 FTS	98		25 - 150
13C3 HFPO-DA	86		25 - 150
13C2 10:2 FTS	103		25 - 150

# QC Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868

Job ID: 500-248724-1

## Method: 6020B - Metals (ICP/MS)

**Lab Sample ID: MB 500-762639/1-A**  
**Matrix: Water**  
**Analysis Batch: 763282**

**Client Sample ID: Method Blank**  
**Prep Type: Total Recoverable**  
**Prep Batch: 762639**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	<0.23		1.0	0.23	ug/L		04/11/24 08:45	04/15/24 10:51	1
Barium	<0.73		2.5	0.73	ug/L		04/11/24 08:45	04/15/24 10:51	1
Cadmium	<0.17		0.50	0.17	ug/L		04/11/24 08:45	04/15/24 10:51	1
Chromium	<1.1		5.0	1.1	ug/L		04/11/24 08:45	04/15/24 10:51	1
Lead	<0.19		0.50	0.19	ug/L		04/11/24 08:45	04/15/24 10:51	1
Selenium	<0.98		2.5	0.98	ug/L		04/11/24 08:45	04/15/24 10:51	1
Silver	<0.12		0.50	0.12	ug/L		04/11/24 08:45	04/15/24 10:51	1

**Lab Sample ID: LCS 500-762639/2-A**  
**Matrix: Water**  
**Analysis Batch: 763282**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total Recoverable**  
**Prep Batch: 762639**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	500	479		ug/L		96	80 - 120
Cadmium	50.0	50.3		ug/L		101	80 - 120
Chromium	200	219		ug/L		109	80 - 120
Lead	100	101		ug/L		101	80 - 120
Selenium	100	98.4		ug/L		98	80 - 120
Silver	50.0	50.5		ug/L		101	80 - 120

## Method: 7470A - Mercury (CVAA)

**Lab Sample ID: MB 500-765147/12-A**  
**Matrix: Water**  
**Analysis Batch: 765433**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 765147**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	<0.076		0.20	0.076	ug/L		04/26/24 10:50	04/29/24 07:12	1

**Lab Sample ID: LCS 500-765147/13-A**  
**Matrix: Water**  
**Analysis Batch: 765433**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 765147**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits

## Method: 1664B - HEM and SGT-HEM

**Lab Sample ID: MB 500-765262/1-A**  
**Matrix: Water**  
**Analysis Batch: 765264**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 765262**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Oil & Grease (HEM)	<1.3		5.0	1.3	mg/L		04/27/24 09:18	04/27/24 09:35	1

# QC Sample Results

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868

Job ID: 500-248724-1

## Method: 1664B - HEM and SGT-HEM (Continued)

Lab Sample ID: LCS 500-765262/2-A  
 Matrix: Water  
 Analysis Batch: 765264

Client Sample ID: Lab Control Sample  
 Prep Type: Total/NA  
 Prep Batch: 765262

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Oil & Grease (HEM)	40.0	32.40		mg/L		81	78 - 114

## Method: SM 4500 H+ B - pH

Lab Sample ID: 500-248724-1 DU  
 Matrix: Water  
 Analysis Batch: 762453

Client Sample ID: 20240405-IDW-W  
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.4	HF	7.4		SU		0	10



# Lab Chronicle

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868

Job ID: 500-248724-1

**Client Sample ID: 20240405-IDW-W**

**Lab Sample ID: 500-248724-1**

**Date Collected: 04/05/24 15:00**

**Matrix: Water**

**Date Received: 04/10/24 09:45**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	762788	PMF	EET CHI	04/12/24 17:41
Total/NA	Prep	3510C			762667	AC	EET CHI	04/11/24 10:49
Total/NA	Analysis	8270E		1	762857	JSB	EET CHI	04/12/24 17:12
Total/NA	Prep	3510C			763442	DAK	EET CHI	04/16/24 17:01
Total/NA	Analysis	8082A		1	763727	SB	EET CHI	04/18/24 17:03
Total/NA	Prep	3535			754592	SJ	EET SAC	04/15/24 04:45
Total/NA	Analysis	537 (modified)		1	756330	C1P	EET SAC	04/19/24 21:27
Total Recoverable	Prep	3005A			762639	BDE	EET CHI	04/11/24 08:45 - 04/11/24 14:45 <sup>1</sup>
Total Recoverable	Analysis	6020B		1	763282	RN	EET CHI	04/15/24 11:10
Total/NA	Prep	7470A			765147	MJG	EET CHI	04/26/24 10:50 - 04/26/24 12:50 <sup>1</sup>
Total/NA	Analysis	7470A		1	765433	MJG	EET CHI	04/29/24 08:11
Total/NA	Prep	1664B			765262	AM	EET CHI	04/27/24 09:18
Total/NA	Analysis	1664B		1	765264	AM	EET CHI	04/27/24 09:35
Total/NA	Analysis	SM 4500 H+ B		1	762453	SO	EET CHI	04/10/24 13:46 - 04/10/24 13:51 <sup>1</sup>

<sup>1</sup> This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

**Laboratory References:**

EET CHI = Eurofins Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

EET SAC = Eurofins Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600



# Accreditation/Certification Summary

Client: Ramboll Americas Engineering Solutions  
Project/Site: Mirro 4 - 1690026868

Job ID: 500-248724-1

## Laboratory: Eurofins Chicago

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

Authority	Program	Identification Number	Expiration Date
California	State	2903	04-29-24
Georgia	State	N/A	04-29-24
Georgia (DW)	State	939	04-29-24
Hawaii	State	NA	04-29-24
Illinois	NELAP	IL00035	04-29-24
Indiana	State	C-IL-02	04-29-24
Iowa	State	082	05-01-24
Kansas	NELAP	E-10161	10-31-24
Kentucky (UST)	State	AI # 108083	04-29-24
Kentucky (WW)	State	KY90023	12-31-24
Louisiana (All)	NELAP	02046	06-30-24
Mississippi	State	NA	04-29-24
North Carolina (WW/SW)	State	291	12-31-24
North Dakota	State	R-194	04-29-24
Oklahoma	State	8908	08-31-24
South Carolina	State	77001003	04-29-24
USDA	US Federal Programs	P330-18-00018	03-30-26
Wisconsin	State	999580010	08-31-24
Wyoming	State	8TMS-Q	04-29-24

## Laboratory: Eurofins Sacramento

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Wisconsin	State	998204680	08-31-24



# Login Sample Receipt Checklist

Client: Ramboll Americas Engineering Solutions

Job Number: 500-248724-1

**Login Number: 248724**

**List Number: 1**

**Creator: Scott, Sherri L**

**List Source: Eurofins Chicago**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.3
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

# Login Sample Receipt Checklist

Client: Ramboll Americas Engineering Solutions

Job Number: 500-248724-1

**Login Number: 248724**

**List Number: 2**

**Creator: Simmons, Jason C**

**List Source: Eurofins Sacramento**

**List Creation: 04/12/24 02:51 PM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.9c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

# Isotope Dilution Summary

Client: Ramboll Americas Engineering Solutions  
 Project/Site: Mirro 4 - 1690026868

Job ID: 500-248724-1

## Method: 537 (modified) - Fluorinated Alkyl Substances

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (25-150)	PFPeA (25-150)	PFHxA (25-150)	C4PFHA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
500-248724-1	20240405-IDW-W	36	60	82	83	84	88	88	77
LCS 320-754592/3-A	Lab Control Sample	92	91	92	96	93	94	99	95
LLCS 320-754592/2-A	Lab Control Sample	96	89	93	96	93	96	97	93
MB 320-754592/1-A	Method Blank	92	93	86	93	92	94	101	92

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (25-150)	PFTDA (25-150)	C3PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (10-150)	d3NMFOS (25-150)	d5NEFOS (25-150)
500-248724-1	20240405-IDW-W	67	53	79	80	76	83	66	73
LCS 320-754592/3-A	Lab Control Sample	91	89	95	94	95	98	92	95
LLCS 320-754592/2-A	Lab Control Sample	96	94	96	95	96	98	94	97
MB 320-754592/1-A	Method Blank	91	92	94	95	95	96	93	98

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	dMeFOSA (10-150)	dEtFOSA (10-150)	NMFM (10-150)	NEFM (10-150)	M242FTS (25-150)	M262FTS (25-150)	M282FTS (25-150)	HFPODA (25-150)
500-248724-1	20240405-IDW-W	61	57	57	53	98	111	113	69
LCS 320-754592/3-A	Lab Control Sample	81	86	91	84	101	97	103	86
LLCS 320-754592/2-A	Lab Control Sample	76	82	87	86	104	99	98	86
MB 320-754592/1-A	Method Blank	79	87	90	86	101	100	102	88

		M102FTS (25-150)
Lab Sample ID	Client Sample ID	
500-248724-1	20240405-IDW-W	72
LCS 320-754592/3-A	Lab Control Sample	98
LLCS 320-754592/2-A	Lab Control Sample	103
MB 320-754592/1-A	Method Blank	100

### Surrogate Legend

- PFBA = 13C4 PFBA
- PFPeA = 13C5 PFPeA
- PFHxA = 13C2 PFHxA
- C4PFHA = 13C4 PFHpA
- PFOA = 13C4 PFOA
- PFNA = 13C5 PFNA
- PFDA = 13C2 PFDA
- PFUnA = 13C2 PFUnA
- PFDoA = 13C2 PFDoA
- PFTDA = 13C2 PFTeDA
- C3PFBS = 13C3 PFBS
- PFHxS = 18O2 PFHxS
- PFOS = 13C4 PFOS
- PFOSA = 13C8 FOSA
- d3NMFOS = d3-NMeFOSAA
- d5NEFOS = d5-NEtFOSAA
- dMeFOSA = d-N-MeFOSA-M
- dEtFOSA = d-N-EtFOSA-M
- NMFM = d7-N-MeFOSE-M
- NEFM = d9-N-EtFOSE-M
- M242FTS = M2-4:2 FTS
- M262FTS = M2-6:2 FTS

# Isotope Dilution Summary

Client: Ramboll Americas Engineering Solutions

Project/Site: Mirro 4 - 1690026868

M282FTS = M2-8:2 FTS

HFPODA = 13C3 HFPO-DA

M102FTS = 13C2 10:2 FTS

Job ID: 500-248724-1

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