

ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

2828 W 28th Street

JOB NUMBER

460-311100-1

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Job Notes

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Authorization



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Definitions/Glossary

Client: Roux Environmental Eng & Geology DPC
Project/Site: 2828 W 28th Street

Job ID: 460-311100-1

Qualifiers

LCMS

Qualifier	Qualifier Description
*	Isotope Dilution analyte is outside acceptance limits.
J	Indicates an estimated value.
U	Analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
*	Duplicate analysis not within control limits.
U	Indicates analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
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

Case Narrative

Client: Roux Environmental Eng & Geology DPC
Project: 2828 W 28th Street

Job ID: 460-311100-1

Job ID: 460-311100-1

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Job Narrative 460-311100-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 9/10/2024 6:30 PM. 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 time was 0.9°C.

Method 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

Samples RXSB-5_0-2_P (460-311100-1) and FB_09092024_P (460-311100-2) were analyzed for Per- and Polyfluoroalkyl Substances by LC/MS/MS. The samples were prepared on 9/12/2024 and 9/13/2024 and analyzed on 9/13/2024 and 9/14/2024.

Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for the low-level laboratory control sample (LLCS) associated with prep batch 240-626866. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries. The LLCS recovered within limits for associated target analyte(s), therefore, the associated samples are reported. The following samples are affected: RXSB-5_0-2_P (460-311100-1) and (LLCS 240-626866/2-A).

The continuing calibration verification (CCV) recovered outside of control limits for IDA compound(s). Section 14.3.3 of the finalized EPA 1633 states that the recovery of target analytes for the CCV(s) must be within 70 - 130%, unless the analyte is not of concern for a given project. Since target analytes associated with this IDA are within spec, data is reported. The following samples are impacted: FB_09092024_P (460-311100-2) and (240-211064-B-1-A).

Method Moisture - Percent Moisture

Sample RXSB-5_0-2_P (460-311100-1) was analyzed for Percent Moisture. The sample was prepared on 9/12/2024 and analyzed on 9/13/2024 and 9/14/2024.

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Detection Summary

Client: Roux Environmental Eng & Geology DPC
Project/Site: 2828 W 28th Street

Job ID: 460-311100-1

Client Sample ID: RXSB-5_0-2_P

Lab Sample ID: 460-311100-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	0.16	J	0.18	0.046	ug/Kg	1		✱	1633	Total/NA
Perfluorooctanesulfonic acid (PFOS)	0.31		0.18	0.046	ug/Kg	1		✱	1633	Total/NA

Client Sample ID: FB_09092024_P

Lab Sample ID: 460-311100-2

No Detections.

Client Sample Results

Client: Roux Environmental Eng & Geology DPC
Project/Site: 2828 W 28th Street

Job ID: 460-311100-1

Client Sample ID: RXSB-5_0-2_P

Lab Sample ID: 460-311100-1

Date Collected: 09/09/24 08:55

Matrix: Solid

Date Received: 09/10/24 18:30

Percent Solids: 92.7

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.73	U	0.73	0.18	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
Perfluoropentanoic acid (PFPeA)	0.37	U	0.37	0.092	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
Perfluorohexanoic acid (PFHxA)	0.18	U	0.18	0.046	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
Perfluoroheptanoic acid (PFHpA)	0.18	U	0.18	0.046	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
Perfluorooctanoic acid (PFOA)	0.16	J	0.18	0.046	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
Perfluorononanoic acid (PFNA)	0.18	U	0.18	0.046	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
Perfluorodecanoic acid (PFDA)	0.18	U	0.18	0.046	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
Perfluoroundecanoic acid (PFUnA)	0.18	U	0.18	0.046	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
Perfluorododecanoic acid (PFDoA)	0.18	U	0.18	0.046	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
Perfluorotridecanoic acid (PFTrDA)	0.18	U	0.18	0.046	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
Perfluorotetradecanoic acid (PFTeDA)	0.18	U	0.18	0.046	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
Perfluorobutanesulfonic acid (PFBS)	0.18	U	0.18	0.046	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
Perfluoropentanesulfonic acid (PFPeS)	0.18	U	0.18	0.046	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
Perfluorohexanesulfonic acid (PFHxS)	0.18	U	0.18	0.046	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
Perfluoroheptanesulfonic acid (PFHpS)	0.18	U	0.18	0.046	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
Perfluorooctanesulfonic acid (PFOS)	0.31		0.18	0.046	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
Perfluorononanesulfonic acid (PFNS)	0.18	U	0.18	0.046	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
Perfluorododecanesulfonic acid (PFDoS)	0.18	U	0.18	0.046	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	0.73	U	0.73	0.18	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	0.73	U	0.73	0.18	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	0.73	U	0.73	0.18	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
Perfluorooctanesulfonamide (PFOSA)	0.18	U	0.18	0.046	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
N-methylperfluorooctane sulfonamide (NMeFOSA)	0.18	U	0.18	0.046	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
N-ethylperfluorooctane sulfonamide (NEtFOSA)	0.18	U	0.18	0.046	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.18	U	0.18	0.046	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0.18	U	0.18	0.046	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	1.83	U	1.83	0.46	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	1.83	U	1.83	0.46	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	0.73	U	0.73	0.18	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
4,8-Dioxo-3H-perfluorononanoic acid (ADONA)	0.73	U	0.73	0.18	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	0.37	U	0.37	0.092	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	0.37	U	0.37	0.092	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	0.73	U	0.73	0.18	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	0.73	U	0.73	0.18	ug/Kg	✱	09/12/24 17:38	09/14/24 07:01	1

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Client Sample Results

Client: Roux Environmental Eng & Geology DPC
Project/Site: 2828 W 28th Street

Job ID: 460-311100-1

Client Sample ID: RXSB-5_0-2_P

Lab Sample ID: 460-311100-1

Date Collected: 09/09/24 08:55

Matrix: Solid

Date Received: 09/10/24 18:30

Percent Solids: 92.7

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	0.37	U	0.37	0.092	ug/Kg	☼	09/12/24 17:38	09/14/24 07:01	1
3-Perfluoropropylpropanoic acid (3:3 FTCA)	0.92	U	0.92	0.23	ug/Kg	☼	09/12/24 17:38	09/14/24 07:01	1
3-Perfluoropentylpropanoic acid (5:3 FTCA)	4.59	U	4.59	1.15	ug/Kg	☼	09/12/24 17:38	09/14/24 07:01	1
3-Perfluoroheptylpropanoic acid (7:3 FTCA)	4.59	U	4.59	1.15	ug/Kg	☼	09/12/24 17:38	09/14/24 07:01	1
Perfluorodecanesulfonic acid (PFDS)	0.18	U	0.18	0.046	ug/Kg	☼	09/12/24 17:38	09/14/24 07:01	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	0.37	U	0.37	0.092	ug/Kg	☼	09/12/24 17:38	09/14/24 07:01	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	86.3		20 - 150	09/12/24 17:38	09/14/24 07:01	1
13C5 PFPeA	81.6		20 - 150	09/12/24 17:38	09/14/24 07:01	1
13C5 PFHxA	78.4		20 - 150	09/12/24 17:38	09/14/24 07:01	1
13C4 PFHpA	75.7		20 - 150	09/12/24 17:38	09/14/24 07:01	1
13C8 PFOA	82.5		20 - 150	09/12/24 17:38	09/14/24 07:01	1
13C9 PFNA	100		20 - 150	09/12/24 17:38	09/14/24 07:01	1
13C6 PFDA	115		20 - 150	09/12/24 17:38	09/14/24 07:01	1
13C7 PFUnA	111		20 - 150	09/12/24 17:38	09/14/24 07:01	1
13C2 PFTeDA	96.6		20 - 150	09/12/24 17:38	09/14/24 07:01	1
13C3 PFBS	104		20 - 150	09/12/24 17:38	09/14/24 07:01	1
13C3 PFHxS	95.3		20 - 150	09/12/24 17:38	09/14/24 07:01	1
13C8 PFOS	101		20 - 150	09/12/24 17:38	09/14/24 07:01	1
13C8 FOSA	96.8		20 - 150	09/12/24 17:38	09/14/24 07:01	1
d3-NMeFOSAA	99.8		20 - 150	09/12/24 17:38	09/14/24 07:01	1
d5-NEtFOSAA	96.9		20 - 150	09/12/24 17:38	09/14/24 07:01	1
M2-4:2 FTS	146		20 - 150	09/12/24 17:38	09/14/24 07:01	1
M2-6:2 FTS	130		20 - 150	09/12/24 17:38	09/14/24 07:01	1
M2-8:2 FTS	125		20 - 150	09/12/24 17:38	09/14/24 07:01	1
13C3 HFPO-DA	86.6		20 - 150	09/12/24 17:38	09/14/24 07:01	1
d7-N-MeFOSE-M	96.5		20 - 150	09/12/24 17:38	09/14/24 07:01	1
d9-N-EtFOSE-M	98.5		20 - 150	09/12/24 17:38	09/14/24 07:01	1
d5-NEtPFOSA	84.2		20 - 150	09/12/24 17:38	09/14/24 07:01	1
d3-NMePFOSA	90.6		20 - 150	09/12/24 17:38	09/14/24 07:01	1
13C2-PFDoDA	96.4		20 - 150	09/12/24 17:38	09/14/24 07:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Solids (EPA Moisture)	92.7		0.1	0.1	%			09/13/24 18:25	1
Percent Moisture (EPA Moisture)	7.3		0.1	0.1	%			09/13/24 18:25	1

Client Sample ID: FB_09092024_P

Lab Sample ID: 460-311100-2

Date Collected: 09/09/24 11:00

Matrix: Water

Date Received: 09/10/24 18:30

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	6.30	U	6.30	1.68	ng/L		09/13/24 08:12	09/13/24 15:29	1
Perfluoropentanoic acid (PFPeA)	3.15	U	3.15	0.79	ng/L		09/13/24 08:12	09/13/24 15:29	1
Perfluorohexanoic acid (PFHxA)	1.58	U	1.58	0.39	ng/L		09/13/24 08:12	09/13/24 15:29	1

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Client Sample Results

Client: Roux Environmental Eng & Geology DPC
Project/Site: 2828 W 28th Street

Job ID: 460-311100-1

Client Sample ID: FB_09092024_P

Lab Sample ID: 460-311100-2

Date Collected: 09/09/24 11:00

Matrix: Water

Date Received: 09/10/24 18:30

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoroheptanoic acid (PFHpA)	1.58	U	1.58	0.39	ng/L		09/13/24 08:12	09/13/24 15:29	1
Perfluorooctanoic acid (PFOA)	1.58	U	1.58	0.39	ng/L		09/13/24 08:12	09/13/24 15:29	1
Perfluorononanoic acid (PFNA)	1.58	U	1.58	0.39	ng/L		09/13/24 08:12	09/13/24 15:29	1
Perfluorodecanoic acid (PFDA)	1.58	U	1.58	0.39	ng/L		09/13/24 08:12	09/13/24 15:29	1
Perfluoroundecanoic acid (PFUnA)	1.58	U	1.58	0.39	ng/L		09/13/24 08:12	09/13/24 15:29	1
Perfluorododecanoic acid (PFDoA)	1.58	U	1.58	0.39	ng/L		09/13/24 08:12	09/13/24 15:29	1
Perfluorotridecanoic acid (PFTrDA)	1.58	U	1.58	0.39	ng/L		09/13/24 08:12	09/13/24 15:29	1
Perfluorotetradecanoic acid (PFTeDA)	1.58	U	1.58	0.39	ng/L		09/13/24 08:12	09/13/24 15:29	1
Perfluorobutanesulfonic acid (PFBS)	1.58	U	1.58	0.39	ng/L		09/13/24 08:12	09/13/24 15:29	1
Perfluoropentanesulfonic acid (PFPeS)	1.58	U	1.58	0.39	ng/L		09/13/24 08:12	09/13/24 15:29	1
Perfluorohexanesulfonic acid (PFHxS)	1.58	U	1.58	0.41	ng/L		09/13/24 08:12	09/13/24 15:29	1
Perfluoroheptanesulfonic acid (PFHpS)	1.58	U	1.58	0.39	ng/L		09/13/24 08:12	09/13/24 15:29	1
Perfluorooctanesulfonic acid (PFOS)	1.58	U	1.58	0.39	ng/L		09/13/24 08:12	09/13/24 15:29	1
Perfluorononanesulfonic acid (PFNS)	1.58	U	1.58	0.39	ng/L		09/13/24 08:12	09/13/24 15:29	1
Perfluorododecanesulfonic acid (PFDoS)	1.58	U	1.58	0.39	ng/L		09/13/24 08:12	09/13/24 15:29	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	6.30	U	6.30	1.58	ng/L		09/13/24 08:12	09/13/24 15:29	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	6.30	U	6.30	1.58	ng/L		09/13/24 08:12	09/13/24 15:29	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	6.30	U	6.30	1.58	ng/L		09/13/24 08:12	09/13/24 15:29	1
Perfluorooctanesulfonamide (PFOSA)	1.58	U	1.58	0.39	ng/L		09/13/24 08:12	09/13/24 15:29	1
N-methylperfluorooctane sulfonamide (NMeFOSA)	1.58	U	1.58	0.39	ng/L		09/13/24 08:12	09/13/24 15:29	1
N-ethylperfluorooctane sulfonamide (NEtFOSA)	1.58	U	1.58	0.39	ng/L		09/13/24 08:12	09/13/24 15:29	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	1.58	U	1.58	0.49	ng/L		09/13/24 08:12	09/13/24 15:29	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	1.58	U	1.58	0.41	ng/L		09/13/24 08:12	09/13/24 15:29	1
N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	15.8	U	15.8	3.94	ng/L		09/13/24 08:12	09/13/24 15:29	1
N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	15.8	U	15.8	3.94	ng/L		09/13/24 08:12	09/13/24 15:29	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	6.30	U	6.30	1.58	ng/L		09/13/24 08:12	09/13/24 15:29	1
4,8-Dioxo-3H-perfluorononanoic acid (ADONA)	6.30	U	6.30	1.58	ng/L		09/13/24 08:12	09/13/24 15:29	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	3.15	U	3.15	0.79	ng/L		09/13/24 08:12	09/13/24 15:29	1
Nonfluoro-3,6-dioxahexanoic acid (NFDHA)	3.15	U	3.15	0.96	ng/L		09/13/24 08:12	09/13/24 15:29	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	6.30	U	6.30	1.58	ng/L		09/13/24 08:12	09/13/24 15:29	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	6.30	U	6.30	1.58	ng/L		09/13/24 08:12	09/13/24 15:29	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	3.15	U	3.15	0.79	ng/L		09/13/24 08:12	09/13/24 15:29	1
3-Perfluoropropylpropanoic acid (3:3 FTCA)	7.88	U	7.88	1.97	ng/L		09/13/24 08:12	09/13/24 15:29	1
3-Perfluoropentylpropanoic acid (5:3 FTCA)	39.4	U	39.4	9.85	ng/L		09/13/24 08:12	09/13/24 15:29	1

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Client Sample Results

Client: Roux Environmental Eng & Geology DPC
Project/Site: 2828 W 28th Street

Job ID: 460-311100-1

Client Sample ID: FB_09092024_P

Lab Sample ID: 460-311100-2

Date Collected: 09/09/24 11:00

Matrix: Water

Date Received: 09/10/24 18:30

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3-Perfluoroheptylpropanoic acid (7:3 FTCA)	39.4	U	39.4	11.7	ng/L		09/13/24 08:12	09/13/24 15:29	1
Perfluorodecanesulfonic acid (PFDS)	1.58	U	1.58	0.39	ng/L		09/13/24 08:12	09/13/24 15:29	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	3.15	U	3.15	0.79	ng/L		09/13/24 08:12	09/13/24 15:29	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	86.1		10 - 130				09/13/24 08:12	09/13/24 15:29	1
13C5 PFPeA	81.8		35 - 150				09/13/24 08:12	09/13/24 15:29	1
13C5 PFHxA	73.2		55 - 150				09/13/24 08:12	09/13/24 15:29	1
13C4 PFHpA	84.7		55 - 150				09/13/24 08:12	09/13/24 15:29	1
13C8 PFOA	86.3		60 - 140				09/13/24 08:12	09/13/24 15:29	1
13C9 PFNA	96.9		55 - 140				09/13/24 08:12	09/13/24 15:29	1
13C6 PFDA	92.2		50 - 140				09/13/24 08:12	09/13/24 15:29	1
13C7 PFUnA	104		30 - 140				09/13/24 08:12	09/13/24 15:29	1
13C2 PFTeDA	72.7		10 - 130				09/13/24 08:12	09/13/24 15:29	1
13C3 PFBS	103		55 - 150				09/13/24 08:12	09/13/24 15:29	1
13C3 PFHxS	101		55 - 150				09/13/24 08:12	09/13/24 15:29	1
13C8 PFOS	99.9		45 - 140				09/13/24 08:12	09/13/24 15:29	1
13C8 FOSA	96.5		30 - 130				09/13/24 08:12	09/13/24 15:29	1
d3-NMeFOSAA	93.6		45 - 200				09/13/24 08:12	09/13/24 15:29	1
d5-NEtFOSAA	96.2		10 - 200				09/13/24 08:12	09/13/24 15:29	1
M2-4:2 FTS	133		60 - 200				09/13/24 08:12	09/13/24 15:29	1
M2-6:2 FTS	121		60 - 200				09/13/24 08:12	09/13/24 15:29	1
M2-8:2 FTS	121		50 - 200				09/13/24 08:12	09/13/24 15:29	1
13C3 HFPO-DA	80.1		25 - 160				09/13/24 08:12	09/13/24 15:29	1
d7-N-MeFOSE-M	86.4		10 - 150				09/13/24 08:12	09/13/24 15:29	1
d9-N-EtFOSE-M	89.6		10 - 150				09/13/24 08:12	09/13/24 15:29	1
d5-NEtPFOSA	70.9		10 - 130				09/13/24 08:12	09/13/24 15:29	1
d3-NMePFOSA	71.6		15 - 130				09/13/24 08:12	09/13/24 15:29	1
13C2-PFDoDA	87.6		10 - 150				09/13/24 08:12	09/13/24 15:29	1

Isotope Dilution Summary

Client: Roux Environmental Eng & Geology DPC
Project/Site: 2828 W 28th Street

Job ID: 460-311100-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

Matrix: Solid

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (20-150)	PFPeA (20-150)	13C5PHA (20-150)	C4PFHA (20-150)	C8PFOA (20-150)	C9PFNA (20-150)	C6PFDA (20-150)	13C7PUA (20-150)
460-311100-1	RXSB-5_0-2_P	86.3	81.6	78.4	75.7	82.5	100	115	111
460-311100-1 DU	RXSB-5_0-2_P	89.3	83.5	80.1	76.1	81.5	109	101	112
LCS 240-626866/3-A	Lab Control Sample	80.9	77.9	73.7	73.9	80.1	90.1	91.6	99.9
LLCS 240-626866/2-A	Lab Control Sample	83.7	78.7	71.3	76.1	77.1	83.7	95.5	104
MB 240-626866/1-A	Method Blank	83.6	74.5	73.9	70.8	76.2	84.4	91.2	93.9

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFTDA (20-150)	C3PFBS (20-150)	C3PFHS (20-150)	C8PFOS (20-150)	PFOSA (20-150)	d3NMFOS (20-150)	d5NEFOS (20-150)	M242FTS (20-150)
460-311100-1	RXSB-5_0-2_P	96.6	104	95.3	101	96.8	99.8	96.9	146
460-311100-1 DU	RXSB-5_0-2_P	106	110	100	98.3	95.2	94.7	98.4	150
LCS 240-626866/3-A	Lab Control Sample	84.6	109	94.6	92.7	86.1	95.9	85.3	133
LLCS 240-626866/2-A	Lab Control Sample	97.0	119	105	91.3	89.4	101	94.1	155 *
MB 240-626866/1-A	Method Blank	85.4	114	100	90.5	88.7	93.5	90.1	143

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	M262FTS (20-150)	M282FTS (20-150)	HFPODA (20-150)	NMFM (20-150)	NEFM (20-150)	d5NPFSA (20-150)	d3NMFSA (20-150)	PFDODA (20-150)
460-311100-1	RXSB-5_0-2_P	130	125	86.6	96.5	98.5	84.2	90.6	96.4
460-311100-1 DU	RXSB-5_0-2_P	135	133	88.2	96.2	96.9	82.4	86.1	99.7
LCS 240-626866/3-A	Lab Control Sample	127	105	83.0	91.5	91.1	72.5	73.2	86.2
LLCS 240-626866/2-A	Lab Control Sample	150	126	85.9	96.4	97.0	71.5	71.7	97.1
MB 240-626866/1-A	Method Blank	136	124	80.8	87.7	90.7	68.7	74.8	88.4

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
13C5PHA = 13C5 PFHxA
C4PFHA = 13C4 PFHpA
C8PFOA = 13C8 PFOA
C9PFNA = 13C9 PFNA
C6PFDA = 13C6 PFDA
13C7PUA = 13C7 PFUnA
PFTDA = 13C2 PFTeDA
C3PFBS = 13C3 PFBS
C3PFHS = 13C3 PFHxS
C8PFOS = 13C8 PFOS
PFOSA = 13C8 FOSA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
M242FTS = M2-4:2 FTS
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
HFPODA = 13C3 HFPO-DA
NMFM = d7-N-MeFOSE-M
NEFM = d9-N-EtFOSE-M
d5NPFSA = d5-NEtPFOSA
d3NMFSA = d3-NMePFOSA
PFDODA = 13C2-PFDODA

Isotope Dilution Summary

Client: Roux Environmental Eng & Geology DPC

Job ID: 460-311100-1

Project/Site: 2828 W 28th Street

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (10-130)	PFPeA (35-150)	13C5PHA (55-150)	C4PFHA (55-150)	C8PFOA (60-140)	C9PFNA (55-140)	C6PFDA (50-140)	13C7PUA (30-140)
460-311100-2	FB_09092024_P	86.1	81.8	73.2	84.7	86.3	96.9	92.2	104
MB 240-626896/1-A	Method Blank	84.6	80.5	73.3	79.5	75.2	98.3	91.4	90.7
		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFTDA (10-130)	C3PFBS (55-150)	C3PFHS (55-150)	C8PFOS (45-140)	PFOSA (30-130)	d3NMFOS (45-200)	d5NEFOS (10-200)	M242FTS (60-200)
460-311100-2	FB_09092024_P	72.7	103	101	99.9	96.5	93.6	96.2	133
MB 240-626896/1-A	Method Blank	66.6	98.2	98.5	91.5	88.9	87.4	92.4	130
		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	M262FTS (60-200)	M282FTS (50-200)	HFPODA (25-160)	NMFM (10-150)	NEFM (10-150)	d5NPFSA (10-130)	d3NMFSA (15-130)	PFDODA (10-150)
460-311100-2	FB_09092024_P	121	121	80.1	86.4	89.6	70.9	71.6	87.6
MB 240-626896/1-A	Method Blank	118	113	75.0	83.2	75.6	63.8	63.8	85.7
Surrogate Legend									
PFBA = 13C4 PFBA									
PFPeA = 13C5 PFPeA									
13C5PHA = 13C5 PFHxA									
C4PFHA = 13C4 PFHpA									
C8PFOA = 13C8 PFOA									
C9PFNA = 13C9 PFNA									
C6PFDA = 13C6 PFDA									
13C7PUA = 13C7 PFUnA									
PFTDA = 13C2 PFTeDA									
C3PFBS = 13C3 PFBS									
C3PFHS = 13C3 PFHxS									
C8PFOS = 13C8 PFOS									
PFOSA = 13C8 FOSA									
d3NMFOS = d3-NMeFOSAA									
d5NEFOS = d5-NEtFOSAA									
M242FTS = M2-4:2 FTS									
M262FTS = M2-6:2 FTS									
M282FTS = M2-8:2 FTS									
HFPODA = 13C3 HFPO-DA									
NMFM = d7-N-MeFOSE-M									
NEFM = d9-N-EtFOSE-M									
d5NPFSA = d5-NEtPFOSA									
d3NMFSA = d3-NMePFOSA									
PFDODA = 13C2-PFDODA									

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (10-130)	PFPeA (40-150)	13C5PHA (40-150)	C4PFHA (40-150)	C8PFOA (30-140)	C9PFNA (30-140)	C6PFDA (20-140)	13C7PUA (20-140)
LCS 240-626896/3-A	Lab Control Sample	86.5	82.6	72.8	78.7	85.5	98.1	104	88.0
LLCS 240-626896/2-A	Lab Control Sample	86.0	76.2	74.4	75.5	82.3	94.8	95.6	89.2

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Isotope Dilution Summary

Client: Roux Environmental Eng & Geology DPC
Project/Site: 2828 W 28th Street

Job ID: 460-311100-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFTDA (10-130)	C3PFBS (25-150)	C3PFHS (25-150)	C8PFOS (20-140)	PFOSA (10-130)	d3NMFOS (10-200)	d5NEFOS (10-200)	M242FTS (25-200)
LCS 240-626896/3-A	Lab Control Sample	75.8	99.9	97.3	97.1	92.7	90.8	97.4	125
LLCS 240-626896/2-A	Lab Control Sample	70.5	107	107	102	96.8	94.6	100	130

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	M262FTS (25-200)	M282FTS (25-200)	HFPODA (25-160)	NMFM (10-150)	NEFM (10-150)	d5NPFSA (10-130)	d3NMFSA (10-130)	PFDODA (10-150)
LCS 240-626896/3-A	Lab Control Sample	122	113	74.9	91.3	87.3	66.2	70.6	86.9
LLCS 240-626896/2-A	Lab Control Sample	121	117	77.9	84.9	89.5	70.6	72.7	87.8

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
13C5PHA = 13C5 PFHxA
C4PFHA = 13C4 PFHpA
C8PFOA = 13C8 PFOA
C9PFNA = 13C9 PFNA
C6PFDA = 13C6 PFDA
13C7PUA = 13C7 PFUnA
PFTDA = 13C2 PFTeDA
C3PFBS = 13C3 PFBS
C3PFHS = 13C3 PFHxS
C8PFOS = 13C8 PFOS
PFOSA = 13C8 FOSA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
M242FTS = M2-4:2 FTS
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
HFPODA = 13C3 HFPO-DA
NMFM = d7-N-MeFOSE-M
NEFM = d9-N-EtFOSE-M
d5NPFSA = d5-NEtPFOSA
d3NMFSA = d3-NMePFOSA
PFDODA = 13C2-PFDODA

QC Sample Results

Client: Roux Environmental Eng & Geology DPC
Project/Site: 2828 W 28th Street

Job ID: 460-311100-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

Lab Sample ID: MB 240-626866/1-A

Matrix: Solid

Analysis Batch: 627004

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 626866

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	0.80	U	0.80	0.20	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
Perfluoropentanoic acid (PFPeA)	0.40	U	0.40	0.10	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
Perfluorohexanoic acid (PFHxA)	0.20	U	0.20	0.050	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
Perfluoroheptanoic acid (PFHpA)	0.20	U	0.20	0.050	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
Perfluorooctanoic acid (PFOA)	0.20	U	0.20	0.050	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
Perfluorononanoic acid (PFNA)	0.20	U	0.20	0.050	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
Perfluorodecanoic acid (PFDA)	0.20	U	0.20	0.050	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
Perfluoroundecanoic acid (PFUnA)	0.20	U	0.20	0.050	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
Perfluorododecanoic acid (PFDoA)	0.20	U	0.20	0.050	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
Perfluorotridecanoic acid (PFTriDA)	0.20	U	0.20	0.050	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
Perfluorotetradecanoic acid (PFTeDA)	0.20	U	0.20	0.050	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
Perfluorobutanesulfonic acid (PFBS)	0.20	U	0.20	0.050	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
Perfluoropentanesulfonic acid (PFPeS)	0.20	U	0.20	0.050	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
Perfluorohexanesulfonic acid (PFHxS)	0.20	U	0.20	0.050	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
Perfluoroheptanesulfonic acid (PFHpS)	0.20	U	0.20	0.050	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
Perfluorooctanesulfonic acid (PFOS)	0.20	U	0.20	0.050	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
Perfluorononanesulfonic acid (PFNS)	0.20	U	0.20	0.050	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
Perfluorododecanesulfonic acid (PFDoS)	0.20	U	0.20	0.050	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	0.80	U	0.80	0.20	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	0.80	U	0.80	0.20	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	0.80	U	0.80	0.20	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
Perfluorooctanesulfonamide (PFOSA)	0.20	U	0.20	0.050	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
N-methylperfluorooctane sulfonamide (NMeFOSA)	0.20	U	0.20	0.050	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
N-ethylperfluorooctane sulfonamide (NEtFOSA)	0.20	U	0.20	0.050	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.20	U	0.20	0.050	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0.20	U	0.20	0.050	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	2.00	U	2.00	0.50	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	2.00	U	2.00	0.50	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	0.80	U	0.80	0.20	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
4,8-Dioxo-3H-perfluorononanoic acid (ADONA)	0.80	U	0.80	0.20	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	0.40	U	0.40	0.10	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	0.40	U	0.40	0.10	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	0.80	U	0.80	0.20	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	0.80	U	0.80	0.20	ug/Kg		09/12/24 17:38	09/14/24 01:08	1

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QC Sample Results

Client: Roux Environmental Eng & Geology DPC
Project/Site: 2828 W 28th Street

Job ID: 460-311100-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: MB 240-626866/1-A

Matrix: Solid

Analysis Batch: 627004

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 626866

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoro (2-ethoxyethane) sulfonic acid (PFESA)	0.40	U	0.40	0.10	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
3-Perfluoropropylpropanoic acid (3:3 FTCA)	1.00	U	1.00	0.25	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
3-Perfluoropentylpropanoic acid (5:3 FTCA)	5.00	U	5.00	1.25	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
3-Perfluoroheptylpropanoic acid (7:3 FTCA)	5.00	U	5.00	1.25	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
Perfluorodecanesulfonic acid (PFDS)	0.20	U	0.20	0.050	ug/Kg		09/12/24 17:38	09/14/24 01:08	1
Perfluoro-3-methoxypropanoic acid (PFMPA)	0.40	U	0.40	0.10	ug/Kg		09/12/24 17:38	09/14/24 01:08	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	83.6		20 - 150	09/12/24 17:38	09/14/24 01:08	1
13C5 PFPeA	74.5		20 - 150	09/12/24 17:38	09/14/24 01:08	1
13C5 PFHxA	73.9		20 - 150	09/12/24 17:38	09/14/24 01:08	1
13C4 PFHpA	70.8		20 - 150	09/12/24 17:38	09/14/24 01:08	1
13C8 PFOA	76.2		20 - 150	09/12/24 17:38	09/14/24 01:08	1
13C9 PFNA	84.4		20 - 150	09/12/24 17:38	09/14/24 01:08	1
13C6 PFDA	91.2		20 - 150	09/12/24 17:38	09/14/24 01:08	1
13C7 PFUnA	93.9		20 - 150	09/12/24 17:38	09/14/24 01:08	1
13C2 PFTeDA	85.4		20 - 150	09/12/24 17:38	09/14/24 01:08	1
13C3 PFBS	114		20 - 150	09/12/24 17:38	09/14/24 01:08	1
13C3 PFHxS	100		20 - 150	09/12/24 17:38	09/14/24 01:08	1
13C8 PFOS	90.5		20 - 150	09/12/24 17:38	09/14/24 01:08	1
13C8 FOSA	88.7		20 - 150	09/12/24 17:38	09/14/24 01:08	1
d3-NMeFOSAA	93.5		20 - 150	09/12/24 17:38	09/14/24 01:08	1
d5-NEtFOSAA	90.1		20 - 150	09/12/24 17:38	09/14/24 01:08	1
M2-4:2 FTS	143		20 - 150	09/12/24 17:38	09/14/24 01:08	1
M2-6:2 FTS	136		20 - 150	09/12/24 17:38	09/14/24 01:08	1
M2-8:2 FTS	124		20 - 150	09/12/24 17:38	09/14/24 01:08	1
13C3 HFPO-DA	80.8		20 - 150	09/12/24 17:38	09/14/24 01:08	1
d7-N-MeFOSE-M	87.7		20 - 150	09/12/24 17:38	09/14/24 01:08	1
d9-N-EtFOSE-M	90.7		20 - 150	09/12/24 17:38	09/14/24 01:08	1
d5-NEtPFOSA	68.7		20 - 150	09/12/24 17:38	09/14/24 01:08	1
d3-NMePFOSA	74.8		20 - 150	09/12/24 17:38	09/14/24 01:08	1
13C2-PFDoDA	88.4		20 - 150	09/12/24 17:38	09/14/24 01:08	1

Lab Sample ID: LCS 240-626866/3-A

Matrix: Solid

Analysis Batch: 627004

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 626866

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid (PFBA)	10.0	9.713		ug/Kg		97	40 - 150
Perfluoropentanoic acid (PFPeA)	5.00	5.096		ug/Kg		102	40 - 150
Perfluorohexanoic acid (PFHxA)	2.50	2.673		ug/Kg		107	40 - 150
Perfluoroheptanoic acid (PFHpA)	2.50	2.476		ug/Kg		99	40 - 150
Perfluorooctanoic acid (PFOA)	2.50	2.547		ug/Kg		102	40 - 150
Perfluorononanoic acid (PFNA)	2.50	2.470		ug/Kg		99	40 - 150
Perfluorodecanoic acid (PFDA)	2.50	2.761		ug/Kg		110	40 - 150

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QC Sample Results

Client: Roux Environmental Eng & Geology DPC
Project/Site: 2828 W 28th Street

Job ID: 460-311100-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LCS 240-626866/3-A

Matrix: Solid

Analysis Batch: 627004

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 626866

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroundecanoic acid (PFUnA)	2.50	2.155		ug/Kg		86	40 - 150
Perfluorododecanoic acid (PFDoA)	2.50	2.293		ug/Kg		92	40 - 150
Perfluorotridecanoic acid (PFTrDA)	2.50	2.287		ug/Kg		91	40 - 150
Perfluorotetradecanoic acid (PFTeDA)	2.50	2.463		ug/Kg		99	40 - 150
Perfluorobutanesulfonic acid (PFBS)	2.21	2.240		ug/Kg		101	40 - 150
Perfluoropentanesulfonic acid (PFPeS)	2.35	2.406		ug/Kg		103	40 - 150
Perfluorohexanesulfonic acid (PFHxS)	2.28	2.199		ug/Kg		97	40 - 150
Perfluoroheptanesulfonic acid (PFHpS)	2.38	2.265		ug/Kg		95	40 - 150
Perfluorooctanesulfonic acid (PFOS)	2.32	2.260		ug/Kg		97	40 - 150
Perfluorononanesulfonic acid (PFNS)	2.40	2.358		ug/Kg		98	40 - 150
Perfluorododecanesulfonic acid (PFDoS)	2.42	2.128		ug/Kg		88	40 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	9.34	8.904		ug/Kg		95	40 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	9.48	8.820		ug/Kg		93	40 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	9.58	9.512		ug/Kg		99	40 - 150
Perfluorooctanesulfonamide (PFOSA)	2.50	2.523		ug/Kg		101	40 - 150
N-methylperfluorooctane sulfonamide (NMeFOSA)	2.50	2.653		ug/Kg		106	40 - 150
N-ethylperfluorooctane sulfonamide (NEtFOSA)	2.50	2.664		ug/Kg		107	40 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.50	2.559		ug/Kg		102	40 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.50	2.563		ug/Kg		103	40 - 150
N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	25.0	24.22		ug/Kg		97	40 - 150
N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	25.0	23.90		ug/Kg		96	40 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	10.0	8.836		ug/Kg		88	40 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	9.42	8.529		ug/Kg		91	40 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	5.00	4.678		ug/Kg		94	40 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	5.00	5.156		ug/Kg		103	40 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	9.32	8.422		ug/Kg		90	40 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	9.42	7.442		ug/Kg		79	40 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	4.45	4.914		ug/Kg		110	40 - 150

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QC Sample Results

Client: Roux Environmental Eng & Geology DPC
Project/Site: 2828 W 28th Street

Job ID: 460-311100-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LCS 240-626866/3-A

Matrix: Solid

Analysis Batch: 627004

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 626866

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
3-Perfluoropropylpropanoic acid (3:3 FTCA)	12.5	12.07		ug/Kg		97	40 - 150
3-Perfluoropentylpropanoic acid (5:3 FTCA)	62.5	49.81		ug/Kg		80	40 - 150
3-Perfluoroheptylpropanoic acid (7:3 FTCA)	62.5	56.47		ug/Kg		90	40 - 150
Perfluorodecanesulfonic acid (PFDS)	2.41	2.303		ug/Kg		96	40 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	5.00	4.725		ug/Kg		94	40 - 150

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C4 PFBA	80.9		20 - 150
13C5 PFPeA	77.9		20 - 150
13C5 PFHxA	73.7		20 - 150
13C4 PFHpA	73.9		20 - 150
13C8 PFOA	80.1		20 - 150
13C9 PFNA	90.1		20 - 150
13C6 PFDA	91.6		20 - 150
13C7 PFUnA	99.9		20 - 150
13C2 PFTeDA	84.6		20 - 150
13C3 PFBS	109		20 - 150
13C3 PFHxS	94.6		20 - 150
13C8 PFOS	92.7		20 - 150
13C8 FOSA	86.1		20 - 150
d3-NMeFOSAA	95.9		20 - 150
d5-NEtFOSAA	85.3		20 - 150
M2-4:2 FTS	133		20 - 150
M2-6:2 FTS	127		20 - 150
M2-8:2 FTS	105		20 - 150
13C3 HFPO-DA	83.0		20 - 150
d7-N-MeFOSE-M	91.5		20 - 150
d9-N-EtFOSE-M	91.1		20 - 150
d5-NEtPFOSA	72.5		20 - 150
d3-NMePFOSA	73.2		20 - 150
13C2-PFDoDA	86.2		20 - 150

Lab Sample ID: LLCS 240-626866/2-A

Matrix: Solid

Analysis Batch: 627004

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 626866

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid (PFBA)	0.800	0.865		ug/Kg		108	40 - 150
Perfluoropentanoic acid (PFPeA)	0.400	0.466		ug/Kg		116	40 - 150
Perfluorohexanoic acid (PFHxA)	0.200	0.253		ug/Kg		126	40 - 150
Perfluoroheptanoic acid (PFHpA)	0.200	0.218		ug/Kg		109	40 - 150
Perfluorooctanoic acid (PFOA)	0.200	0.261		ug/Kg		130	40 - 150
Perfluorononanoic acid (PFNA)	0.200	0.237		ug/Kg		119	40 - 150
Perfluorodecanoic acid (PFDA)	0.200	0.247		ug/Kg		124	40 - 150

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QC Sample Results

Client: Roux Environmental Eng & Geology DPC
Project/Site: 2828 W 28th Street

Job ID: 460-311100-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LLCS 240-626866/2-A

Matrix: Solid

Analysis Batch: 627004

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 626866

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoroundecanoic acid (PFUnA)	0.200	0.185	J	ug/Kg		93	40 - 150
Perfluorododecanoic acid (PFDoA)	0.200	0.196	J	ug/Kg		98	40 - 150
Perfluorotridecanoic acid (PFTrDA)	0.200	0.209		ug/Kg		104	40 - 150
Perfluorotetradecanoic acid (PFTeDA)	0.200	0.207		ug/Kg		103	40 - 150
Perfluorobutanesulfonic acid (PFBS)	0.177	0.185	J	ug/Kg		105	40 - 150
Perfluoropentanesulfonic acid (PFPeS)	0.188	0.214		ug/Kg		114	40 - 150
Perfluorohexanesulfonic acid (PFHxS)	0.182	0.206		ug/Kg		113	40 - 150
Perfluoroheptanesulfonic acid (PFHpS)	0.190	0.206		ug/Kg		108	40 - 150
Perfluorooctanesulfonic acid (PFOS)	0.186	0.244		ug/Kg		132	40 - 150
Perfluorononanesulfonic acid (PFNS)	0.192	0.232		ug/Kg		121	40 - 150
Perfluorododecanesulfonic acid (PFDoS)	0.194	0.221		ug/Kg		114	40 - 150
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	0.747	0.745	J	ug/Kg		100	40 - 150
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	0.758	0.701	J	ug/Kg		92	40 - 150
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	0.766	0.889		ug/Kg		116	40 - 150
Perfluorooctanesulfonamide (PFOSA)	0.200	0.227		ug/Kg		114	40 - 150
N-methylperfluorooctane sulfonamide (NMeFOSA)	0.200	0.263		ug/Kg		132	40 - 150
N-ethylperfluorooctane sulfonamide (NEtFOSA)	0.200	0.240		ug/Kg		120	40 - 150
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.200	0.238		ug/Kg		119	40 - 150
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0.200	0.235		ug/Kg		117	40 - 150
N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	2.00	2.010		ug/Kg		100	40 - 150
N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	2.00	2.060		ug/Kg		103	40 - 150
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	0.800	0.727	J	ug/Kg		91	40 - 150
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	0.754	0.708	J	ug/Kg		94	40 - 150
Perfluoro-4-methoxybutanoic acid (PFMBA)	0.400	0.402		ug/Kg		100	40 - 150
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	0.400	0.442		ug/Kg		111	40 - 150
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	0.746	0.737	J	ug/Kg		99	40 - 150
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	0.754	0.695	J	ug/Kg		92	40 - 150
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	0.356	0.425		ug/Kg		119	40 - 150

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QC Sample Results

Client: Roux Environmental Eng & Geology DPC
Project/Site: 2828 W 28th Street

Job ID: 460-311100-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LLCS 240-626866/2-A

Matrix: Solid

Analysis Batch: 627004

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 626866

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
3-Perfluoropropylpropanoic acid (3:3 FTCA)	1.00	1.074		ug/Kg		107	40 - 150
3-Perfluoropentylpropanoic acid (5:3 FTCA)	5.00	4.529	J	ug/Kg		91	40 - 150
3-Perfluoroheptylpropanoic acid (7:3 FTCA)	5.00	5.388		ug/Kg		108	40 - 150
Perfluorodecanesulfonic acid (PFDS)	0.193	0.238		ug/Kg		123	40 - 150
Perfluoro-3-methoxypropanoic acid (PFMPA)	0.400	0.414		ug/Kg		103	40 - 150

Isotope Dilution	LLCS %Recovery	LLCS Qualifier	Limits
13C4 PFBA	83.7		20 - 150
13C5 PFPeA	78.7		20 - 150
13C5 PFHxA	71.3		20 - 150
13C4 PFHpA	76.1		20 - 150
13C8 PFOA	77.1		20 - 150
13C9 PFNA	83.7		20 - 150
13C6 PFDA	95.5		20 - 150
13C7 PFUnA	104		20 - 150
13C2 PFTeDA	97.0		20 - 150
13C3 PFBS	119		20 - 150
13C3 PFHxS	105		20 - 150
13C8 PFOS	91.3		20 - 150
13C8 FOSA	89.4		20 - 150
d3-NMeFOSAA	101		20 - 150
d5-NEtFOSAA	94.1		20 - 150
M2-4:2 FTS	155 *		20 - 150
M2-6:2 FTS	150		20 - 150
M2-8:2 FTS	126		20 - 150
13C3 HFPO-DA	85.9		20 - 150
d7-N-MeFOSE-M	96.4		20 - 150
d9-N-EtFOSE-M	97.0		20 - 150
d5-NEtPFOSA	71.5		20 - 150
d3-NMePFOSA	71.7		20 - 150
13C2-PFDoDA	97.1		20 - 150

Lab Sample ID: 460-311100-1 DU

Matrix: Solid

Analysis Batch: 627004

Client Sample ID: RXSB-5_0-2_P

Prep Type: Total/NA

Prep Batch: 626866

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Perfluorobutanoic acid (PFBA)	0.73	U	0.74	U	ug/Kg	⊛	NC	30
Perfluoropentanoic acid (PFPeA)	0.37	U	0.37	U	ug/Kg	⊛	NC	30
Perfluorohexanoic acid (PFHxA)	0.18	U	0.18	U	ug/Kg	⊛	NC	30
Perfluoroheptanoic acid (PFHpA)	0.18	U	0.18	U	ug/Kg	⊛	NC	30
Perfluorooctanoic acid (PFOA)	0.16	J	0.148	J	ug/Kg	⊛	5	30
Perfluorononanoic acid (PFNA)	0.18	U	0.18	U	ug/Kg	⊛	NC	30
Perfluorodecanoic acid (PFDA)	0.18	U	0.18	U	ug/Kg	⊛	NC	30

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QC Sample Results

Client: Roux Environmental Eng & Geology DPC
Project/Site: 2828 W 28th Street

Job ID: 460-311100-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: 460-311100-1 DU

Matrix: Solid

Analysis Batch: 627004

Client Sample ID: RXSB-5_0-2_P

Prep Type: Total/NA

Prep Batch: 626866

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Perfluoroundecanoic acid (PFUnA)	0.18	U	0.18	U	ug/Kg	✱	NC	30
Perfluorododecanoic acid (PFDoA)	0.18	U	0.18	U	ug/Kg	✱	NC	30
Perfluorotridecanoic acid (PFTrDA)	0.18	U	0.18	U	ug/Kg	✱	NC	30
Perfluorotetradecanoic acid (PFTeDA)	0.18	U	0.18	U	ug/Kg	✱	NC	30
Perfluorobutanesulfonic acid (PFBS)	0.18	U	0.18	U	ug/Kg	✱	NC	30
Perfluoropentanesulfonic acid (PFPeS)	0.18	U	0.18	U	ug/Kg	✱	NC	30
Perfluorohexanesulfonic acid (PFHxS)	0.18	U	0.18	U	ug/Kg	✱	NC	30
Perfluoroheptanesulfonic acid (PFHpS)	0.18	U	0.18	U	ug/Kg	✱	NC	30
Perfluorooctanesulfonic acid (PFOS)	0.31	U	0.342	U	ug/Kg	✱	10	30
Perfluorononanesulfonic acid (PFNS)	0.18	U	0.18	U	ug/Kg	✱	NC	30
Perfluorododecanesulfonic acid (PFDoS)	0.18	U	0.18	U	ug/Kg	✱	NC	30
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	0.73	U	0.74	U	ug/Kg	✱	NC	30
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	0.73	U	0.74	U	ug/Kg	✱	NC	30
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	0.73	U	0.74	U	ug/Kg	✱	NC	30
Perfluorooctanesulfonamide (PFOSA)	0.18	U	0.18	U	ug/Kg	✱	NC	30
N-methylperfluorooctane sulfonamide (NMeFOSA)	0.18	U	0.18	U	ug/Kg	✱	NC	30
N-ethylperfluorooctane sulfonamide (NEtFOSA)	0.18	U	0.18	U	ug/Kg	✱	NC	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.18	U	0.18	U	ug/Kg	✱	NC	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0.18	U	0.18	U	ug/Kg	✱	NC	30
N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	1.83	U	1.85	U	ug/Kg	✱	NC	30
N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	1.83	U	1.85	U	ug/Kg	✱	NC	30
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	0.73	U	0.74	U	ug/Kg	✱	NC	30
4,8-Dioxo-3H-perfluorononanoic acid (ADONA)	0.73	U	0.74	U	ug/Kg	✱	NC	30
Perfluoro-4-methoxybutanoic acid (PFMBA)	0.37	U	0.37	U	ug/Kg	✱	NC	30
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	0.37	U	0.37	U	ug/Kg	✱	NC	30
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	0.73	U	0.74	U	ug/Kg	✱	NC	30
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	0.73	U	0.74	U	ug/Kg	✱	NC	30
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	0.37	U	0.37	U	ug/Kg	✱	NC	30

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QC Sample Results

Client: Roux Environmental Eng & Geology DPC
Project/Site: 2828 W 28th Street

Job ID: 460-311100-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: 460-311100-1 DU

Matrix: Solid

Analysis Batch: 627004

Client Sample ID: RXSB-5_0-2_P

Prep Type: Total/NA

Prep Batch: 626866

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
3-Perfluoropropylpropanoic acid (3:3 FTCA)	0.92	U	0.92	U	ug/Kg	☼	NC	30
3-Perfluoropentylpropanoic acid (5:3 FTCA)	4.59	U	4.62	U	ug/Kg	☼	NC	30
3-Perfluoroheptylpropanoic acid (7:3 FTCA)	4.59	U	4.62	U	ug/Kg	☼	NC	30
Perfluorodecanesulfonic acid (PFDS)	0.18	U	0.18	U	ug/Kg	☼	NC	30
Perfluoro-3-methoxypropanoic acid (PFMPA)	0.37	U	0.37	U	ug/Kg	☼	NC	30

Isotope Dilution	%Recovery	DU Qualifier	Limits
13C4 PFBA	89.3		20 - 150
13C5 PFPeA	83.5		20 - 150
13C5 PFHxA	80.1		20 - 150
13C4 PFHpA	76.1		20 - 150
13C8 PFOA	81.5		20 - 150
13C9 PFNA	109		20 - 150
13C6 PFDA	101		20 - 150
13C7 PFUnA	112		20 - 150
13C2 PFTeDA	106		20 - 150
13C3 PFBS	110		20 - 150
13C3 PFHxS	100		20 - 150
13C8 PFOS	98.3		20 - 150
13C8 FOSA	95.2		20 - 150
d3-NMeFOSAA	94.7		20 - 150
d5-NEtFOSAA	98.4		20 - 150
M2-4:2 FTS	150		20 - 150
M2-6:2 FTS	135		20 - 150
M2-8:2 FTS	133		20 - 150
13C3 HFPO-DA	88.2		20 - 150
d7-N-MeFOSE-M	96.2		20 - 150
d9-N-EtFOSE-M	96.9		20 - 150
d5-NEtPFOSA	82.4		20 - 150
d3-NMePFOSA	86.1		20 - 150
13C2-PFDoDA	99.7		20 - 150

Lab Sample ID: MB 240-626896/1-A

Matrix: Water

Analysis Batch: 626980

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 626896

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	8.00	U	8.00	2.13	ng/L		09/13/24 08:12	09/13/24 13:26	1
Perfluoropentanoic acid (PFPeA)	4.00	U	4.00	1.00	ng/L		09/13/24 08:12	09/13/24 13:26	1
Perfluorohexanoic acid (PFHxA)	2.00	U	2.00	0.50	ng/L		09/13/24 08:12	09/13/24 13:26	1
Perfluoroheptanoic acid (PFHpA)	2.00	U	2.00	0.50	ng/L		09/13/24 08:12	09/13/24 13:26	1
Perfluorooctanoic acid (PFOA)	2.00	U	2.00	0.50	ng/L		09/13/24 08:12	09/13/24 13:26	1
Perfluorononanoic acid (PFNA)	2.00	U	2.00	0.50	ng/L		09/13/24 08:12	09/13/24 13:26	1
Perfluorodecanoic acid (PFDA)	2.00	U	2.00	0.50	ng/L		09/13/24 08:12	09/13/24 13:26	1
Perfluoroundecanoic acid (PFUnA)	2.00	U	2.00	0.50	ng/L		09/13/24 08:12	09/13/24 13:26	1

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QC Sample Results

Client: Roux Environmental Eng & Geology DPC
Project/Site: 2828 W 28th Street

Job ID: 460-311100-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: MB 240-626896/1-A

Matrix: Water

Analysis Batch: 626980

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 626896

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorododecanoic acid (PFDoA)	2.00	U	2.00	0.50	ng/L		09/13/24 08:12	09/13/24 13:26	1
Perfluorotridecanoic acid (PFTTrDA)	2.00	U	2.00	0.50	ng/L		09/13/24 08:12	09/13/24 13:26	1
Perfluorotetradecanoic acid (PFTeDA)	2.00	U	2.00	0.50	ng/L		09/13/24 08:12	09/13/24 13:26	1
Perfluorobutanesulfonic acid (PFBS)	2.00	U	2.00	0.50	ng/L		09/13/24 08:12	09/13/24 13:26	1
Perfluoropentanesulfonic acid (PFPeS)	2.00	U	2.00	0.50	ng/L		09/13/24 08:12	09/13/24 13:26	1
Perfluorohexanesulfonic acid (PFHxS)	2.00	U	2.00	0.52	ng/L		09/13/24 08:12	09/13/24 13:26	1
Perfluoroheptanesulfonic acid (PFHpS)	2.00	U	2.00	0.50	ng/L		09/13/24 08:12	09/13/24 13:26	1
Perfluorooctanesulfonic acid (PFOS)	2.00	U	2.00	0.50	ng/L		09/13/24 08:12	09/13/24 13:26	1
Perfluorononanesulfonic acid (PFNS)	2.00	U	2.00	0.50	ng/L		09/13/24 08:12	09/13/24 13:26	1
Perfluorododecanesulfonic acid (PFDoS)	2.00	U	2.00	0.50	ng/L		09/13/24 08:12	09/13/24 13:26	1
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	8.00	U	8.00	2.00	ng/L		09/13/24 08:12	09/13/24 13:26	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	8.00	U	8.00	2.00	ng/L		09/13/24 08:12	09/13/24 13:26	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	8.00	U	8.00	2.00	ng/L		09/13/24 08:12	09/13/24 13:26	1
Perfluorooctanesulfonamide (PFOSA)	2.00	U	2.00	0.50	ng/L		09/13/24 08:12	09/13/24 13:26	1
N-methylperfluorooctane sulfonamide (NMeFOSA)	2.00	U	2.00	0.50	ng/L		09/13/24 08:12	09/13/24 13:26	1
N-ethylperfluorooctane sulfonamide (NEtFOSA)	2.00	U	2.00	0.50	ng/L		09/13/24 08:12	09/13/24 13:26	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	U	2.00	0.62	ng/L		09/13/24 08:12	09/13/24 13:26	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	U	2.00	0.52	ng/L		09/13/24 08:12	09/13/24 13:26	1
N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	20.0	U	20.0	5.00	ng/L		09/13/24 08:12	09/13/24 13:26	1
N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	20.0	U	20.0	5.00	ng/L		09/13/24 08:12	09/13/24 13:26	1
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	8.00	U	8.00	2.00	ng/L		09/13/24 08:12	09/13/24 13:26	1
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	8.00	U	8.00	2.00	ng/L		09/13/24 08:12	09/13/24 13:26	1
Perfluoro-4-methoxybutanoic acid (PFMBA)	4.00	U	4.00	1.00	ng/L		09/13/24 08:12	09/13/24 13:26	1
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	4.00	U	4.00	1.22	ng/L		09/13/24 08:12	09/13/24 13:26	1
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	8.00	U	8.00	2.00	ng/L		09/13/24 08:12	09/13/24 13:26	1
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	8.00	U	8.00	2.00	ng/L		09/13/24 08:12	09/13/24 13:26	1
Perfluoro (2-ethoxyethane) sulfonic acid (PFEESA)	4.00	U	4.00	1.00	ng/L		09/13/24 08:12	09/13/24 13:26	1
3-Perfluoropropylpropanoic acid (3:3 FTCA)	10.0	U	10.0	2.50	ng/L		09/13/24 08:12	09/13/24 13:26	1
3-Perfluoropentylpropanoic acid (5:3 FTCA)	50.0	U	50.0	12.5	ng/L		09/13/24 08:12	09/13/24 13:26	1
3-Perfluoroheptylpropanoic acid (7:3 FTCA)	50.0	U	50.0	14.9	ng/L		09/13/24 08:12	09/13/24 13:26	1
Perfluorodecanesulfonic acid (PFDS)	2.00	U	2.00	0.50	ng/L		09/13/24 08:12	09/13/24 13:26	1

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QC Sample Results

Client: Roux Environmental Eng & Geology DPC
Project/Site: 2828 W 28th Street

Job ID: 460-311100-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: MB 240-626896/1-A

Matrix: Water

Analysis Batch: 626980

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 626896

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluoro-3-methoxypropanoic acid (PFMPA)	4.00	U	4.00	1.00	ng/L		09/13/24 08:12	09/13/24 13:26	1
Isotope Dilution	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFBA	84.6		10 - 130				09/13/24 08:12	09/13/24 13:26	1
13C5 PFPeA	80.5		35 - 150				09/13/24 08:12	09/13/24 13:26	1
13C5 PFHxA	73.3		55 - 150				09/13/24 08:12	09/13/24 13:26	1
13C4 PFHpA	79.5		55 - 150				09/13/24 08:12	09/13/24 13:26	1
13C8 PFOA	75.2		60 - 140				09/13/24 08:12	09/13/24 13:26	1
13C9 PFNA	98.3		55 - 140				09/13/24 08:12	09/13/24 13:26	1
13C6 PFDA	91.4		50 - 140				09/13/24 08:12	09/13/24 13:26	1
13C7 PFUnA	90.7		30 - 140				09/13/24 08:12	09/13/24 13:26	1
13C2 PFTeDA	66.6		10 - 130				09/13/24 08:12	09/13/24 13:26	1
13C3 PFBS	98.2		55 - 150				09/13/24 08:12	09/13/24 13:26	1
13C3 PFHxS	98.5		55 - 150				09/13/24 08:12	09/13/24 13:26	1
13C8 PFOS	91.5		45 - 140				09/13/24 08:12	09/13/24 13:26	1
13C8 FOSA	88.9		30 - 130				09/13/24 08:12	09/13/24 13:26	1
d3-NMeFOSAA	87.4		45 - 200				09/13/24 08:12	09/13/24 13:26	1
d5-NEtFOSAA	92.4		10 - 200				09/13/24 08:12	09/13/24 13:26	1
M2-4:2 FTS	130		60 - 200				09/13/24 08:12	09/13/24 13:26	1
M2-6:2 FTS	118		60 - 200				09/13/24 08:12	09/13/24 13:26	1
M2-8:2 FTS	113		50 - 200				09/13/24 08:12	09/13/24 13:26	1
13C3 HFPO-DA	75.0		25 - 160				09/13/24 08:12	09/13/24 13:26	1
d7-N-MeFOSE-M	83.2		10 - 150				09/13/24 08:12	09/13/24 13:26	1
d9-N-EtFOSE-M	75.6		10 - 150				09/13/24 08:12	09/13/24 13:26	1
d5-NEtPFOSA	63.8		10 - 130				09/13/24 08:12	09/13/24 13:26	1
d3-NMePFOSA	63.8		15 - 130				09/13/24 08:12	09/13/24 13:26	1
13C2-PFDoDA	85.7		10 - 150				09/13/24 08:12	09/13/24 13:26	1

Lab Sample ID: LCS 240-626896/3-A

Matrix: Water

Analysis Batch: 626980

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 626896

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid (PFBA)	100	99.66		ng/L		100	58 - 148
Perfluoropentanoic acid (PFPeA)	50.0	47.42		ng/L		95	54 - 152
Perfluorohexanoic acid (PFHxA)	25.0	27.72		ng/L		111	55 - 152
Perfluoroheptanoic acid (PFHpA)	25.0	26.08		ng/L		104	54 - 154
Perfluorooctanoic acid (PFOA)	25.0	24.89		ng/L		100	52 - 161
Perfluorononanoic acid (PFNA)	25.0	23.35		ng/L		93	59 - 149
Perfluorodecanoic acid (PFDA)	25.0	22.09		ng/L		88	52 - 147
Perfluoroundecanoic acid (PFUnA)	25.0	24.49		ng/L		98	48 - 159
Perfluorododecanoic acid (PFDoA)	25.0	21.91		ng/L		88	64 - 142
Perfluorotridecanoic acid (PFTriDA)	25.0	21.42		ng/L		86	49 - 148
Perfluorotetradecanoic acid (PFTeDA)	25.0	21.50		ng/L		86	47 - 161

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QC Sample Results

Client: Roux Environmental Eng & Geology DPC
Project/Site: 2828 W 28th Street

Job ID: 460-311100-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LCS 240-626896/3-A

Matrix: Water

Analysis Batch: 626980

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 626896

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanesulfonic acid (PFBS)	22.1	22.72		ng/L		103	62 - 144
Perfluoropentanesulfonic acid (PFPeS)	23.5	24.39		ng/L		104	59 - 151
Perfluorohexanesulfonic acid (PFHxS)	22.8	24.42		ng/L		107	57 - 146
Perfluoroheptanesulfonic acid (PFHpS)	23.8	23.37		ng/L		98	55 - 152
Perfluorooctanesulfonic acid (PFOS)	23.2	22.64		ng/L		98	58 - 149
Perfluorononanesulfonic acid (PFNS)	24.0	22.11		ng/L		92	52 - 148
Perfluorododecanesulfonic acid (PFDoS)	24.2	17.50		ng/L		72	36 - 145
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	93.4	86.78		ng/L		93	67 - 146
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	94.8	85.94		ng/L		91	61 - 151
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	95.8	90.31		ng/L		94	63 - 152
Perfluorooctanesulfonamide (PFOSA)	25.0	26.51		ng/L		106	61 - 148
N-methylperfluorooctane sulfonamide (NMeFOSA)	25.0	30.41		ng/L		122	63 - 145
N-ethylperfluorooctane sulfonamide (NEtFOSA)	25.0	31.45		ng/L		126	65 - 139
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	25.0	27.02		ng/L		108	58 - 144
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	25.0	22.83		ng/L		91	59 - 146
N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	250	240.4		ng/L		96	71 - 136
N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	250	236.7		ng/L		95	69 - 137
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	100	98.75		ng/L		99	63 - 144
4,8-Dioxo-3H-perfluorononanoic acid (ADONA)	94.2	104.2		ng/L		111	68 - 146
Perfluoro-4-methoxybutanoic acid (PFMBA)	50.0	47.62		ng/L		95	55 - 148
Nonfluoro-3,6-dioxahexanoic acid (NFDHA)	50.0	63.55		ng/L		127	48 - 161
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	93.2	93.51		ng/L		100	56 - 156
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	94.2	87.86		ng/L		93	46 - 156
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	44.5	48.88		ng/L		110	56 - 151
3-Perfluoropropylpropanoic acid (3:3 FTCA)	125	106.0		ng/L		85	62 - 129
3-Perfluoropentylpropanoic acid (5:3 FTCA)	625	528.9		ng/L		85	63 - 134
3-Perfluoroheptylpropanoic acid (7:3 FTCA)	625	605.7		ng/L		97	50 - 138
Perfluorodecanesulfonic acid (PFDS)	24.1	21.83		ng/L		91	51 - 147

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QC Sample Results

Client: Roux Environmental Eng & Geology DPC
Project/Site: 2828 W 28th Street

Job ID: 460-311100-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LCS 240-626896/3-A

Matrix: Water

Analysis Batch: 626980

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 626896

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoro-3-methoxypropanoic acid (PFMPA)	50.0	46.05		ng/L		92	51 - 145
		LCS	LCS				
Isotope Dilution	%Recovery	Qualifier	Limits				
13C4 PFBA	86.5		10 - 130				
13C5 PFPeA	82.6		40 - 150				
13C5 PFHxA	72.8		40 - 150				
13C4 PFHpA	78.7		40 - 150				
13C8 PFOA	85.5		30 - 140				
13C9 PFNA	98.1		30 - 140				
13C6 PFDA	104		20 - 140				
13C7 PFUnA	88.0		20 - 140				
13C2 PFTeDA	75.8		10 - 130				
13C3 PFBS	99.9		25 - 150				
13C3 PFHxS	97.3		25 - 150				
13C8 PFOS	97.1		20 - 140				
13C8 FOSA	92.7		10 - 130				
d3-NMeFOSAA	90.8		10 - 200				
d5-NEtFOSAA	97.4		10 - 200				
M2-4:2 FTS	125		25 - 200				
M2-6:2 FTS	122		25 - 200				
M2-8:2 FTS	113		25 - 200				
13C3 HFPO-DA	74.9		25 - 160				
d7-N-MeFOSE-M	91.3		10 - 150				
d9-N-EtFOSE-M	87.3		10 - 150				
d5-NEtPFOSA	66.2		10 - 130				
d3-NMePFOSA	70.6		10 - 130				
13C2-PFDoDA	86.9		10 - 150				

Lab Sample ID: LLCS 240-626896/2-A

Matrix: Water

Analysis Batch: 626980

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 626896

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanoic acid (PFBA)	8.00	8.836		ng/L		110	44 - 157
Perfluoropentanoic acid (PFPeA)	4.00	4.546		ng/L		114	57 - 148
Perfluorohexanoic acid (PFHxA)	2.00	2.347		ng/L		117	62 - 149
Perfluoroheptanoic acid (PFHpA)	2.00	2.381		ng/L		119	56 - 150
Perfluorooctanoic acid (PFOA)	2.00	2.641		ng/L		132	57 - 161
Perfluorononanoic acid (PFNA)	2.00	2.200		ng/L		110	53 - 157
Perfluorodecanoic acid (PFDA)	2.00	1.934	J	ng/L		97	43 - 158
Perfluoroundecanoic acid (PFUnA)	2.00	2.038		ng/L		102	50 - 155
Perfluorododecanoic acid (PFDoA)	2.00	2.012		ng/L		101	60 - 141
Perfluorotridecanoic acid (PFTriDA)	2.00	1.849	J	ng/L		92	52 - 140
Perfluorotetradecanoic acid (PFTeDA)	2.00	2.275		ng/L		114	52 - 156

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QC Sample Results

Client: Roux Environmental Eng & Geology DPC
Project/Site: 2828 W 28th Street

Job ID: 460-311100-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LLCS 240-626896/2-A

Matrix: Water

Analysis Batch: 626980

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 626896

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorobutanesulfonic acid (PFBS)	1.77	1.922	J	ng/L		109	63 - 145
Perfluoropentanesulfonic acid (PFPeS)	1.88	2.060		ng/L		110	58 - 144
Perfluorohexanesulfonic acid (PFHxS)	1.82	2.003		ng/L		110	44 - 158
Perfluoroheptanesulfonic acid (PFHpS)	1.90	2.105		ng/L		111	51 - 150
Perfluorooctanesulfonic acid (PFOS)	1.86	2.072		ng/L		112	43 - 162
Perfluorononanesulfonic acid (PFNS)	1.92	1.905	J	ng/L		99	46 - 151
Perfluorododecanesulfonic acid (PFDoS)	1.94	1.549	J	ng/L		80	30 - 138
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2 FTS)	7.47	7.693	J	ng/L		103	52 - 158
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	7.58	7.847	J	ng/L		103	48 - 158
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	7.66	8.368		ng/L		109	46 - 165
Perfluorooctanesulfonamide (PFOSA)	2.00	2.345		ng/L		117	47 - 163
N-methylperfluorooctane sulfonamide (NMeFOSA)	2.00	2.622		ng/L		131	54 - 155
N-ethylperfluorooctane sulfonamide (NEtFOSA)	2.00	2.750		ng/L		137	49 - 156
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	2.00	2.283		ng/L		114	32 - 160
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	2.00	2.258		ng/L		113	51 - 154
N-methylperfluorooctane sulfonamidoethanol (NMeFOSE)	20.0	24.13		ng/L		121	56 - 151
N-ethylperfluorooctane sulfonamidoethanol (NEtFOSE)	20.0	21.65		ng/L		108	60 - 147
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA)	8.00	8.805		ng/L		110	58 - 154
4,8-Dioxo-3H-perfluorononanoic acid (ADONA)	7.54	8.473		ng/L		112	61 - 148
Perfluoro-4-methoxybutanoic acid (PFMBA)	4.00	4.097		ng/L		102	49 - 154
Nonfluoro-3,6-dioxahexanoic acid (NFDHA)	4.00	4.435		ng/L		111	47 - 160
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	7.46	7.326	J	ng/L		98	44 - 167
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	7.54	7.511	J	ng/L		100	36 - 158
Perfluoro (2-ethoxyethane) sulfonic acid (PFEEESA)	3.56	4.115		ng/L		116	56 - 144
3-Perfluoropropylpropanoic acid (3:3 FTCA)	10.0	9.330	J	ng/L		93	32 - 161
3-Perfluoropentylpropanoic acid (5:3 FTCA)	50.0	43.72	J	ng/L		87	39 - 156
3-Perfluoroheptylpropanoic acid (7:3 FTCA)	50.0	47.99	J	ng/L		96	36 - 149
Perfluorodecanesulfonic acid (PFDS)	1.93	1.983	J	ng/L		103	50 - 144

Eurofins Edison

QC Sample Results

Client: Roux Environmental Eng & Geology DPC
Project/Site: 2828 W 28th Street

Job ID: 460-311100-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LLCS 240-626896/2-A

Matrix: Water

Analysis Batch: 626980

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 626896

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluoro-3-methoxypropanoic acid (PFMPA)	4.00	4.191		ng/L		105	48 - 150
Isotope Dilution							
	LLCS %Recovery	LLCS Qualifier	Limits				
13C4 PFBA	86.0		10 - 130				
13C5 PFPeA	76.2		40 - 150				
13C5 PFHxA	74.4		40 - 150				
13C4 PFHpA	75.5		40 - 150				
13C8 PFOA	82.3		30 - 140				
13C9 PFNA	94.8		30 - 140				
13C6 PFDA	95.6		20 - 140				
13C7 PFUnA	89.2		20 - 140				
13C2 PFTeDA	70.5		10 - 130				
13C3 PFBS	107		25 - 150				
13C3 PFHxS	107		25 - 150				
13C8 PFOS	102		20 - 140				
13C8 FOSA	96.8		10 - 130				
d3-NMeFOSAA	94.6		10 - 200				
d5-NEtFOSAA	100		10 - 200				
M2-4:2 FTS	130		25 - 200				
M2-6:2 FTS	121		25 - 200				
M2-8:2 FTS	117		25 - 200				
13C3 HFPO-DA	77.9		25 - 160				
d7-N-MeFOSE-M	84.9		10 - 150				
d9-N-EtFOSE-M	89.5		10 - 150				
d5-NEtPFOSA	70.6		10 - 130				
d3-NMePFOSA	72.7		10 - 130				
13C2-PFDoDA	87.8		10 - 150				

Method: Moisture - Percent Moisture

Lab Sample ID: 240-210962-A-2 DU

Matrix: Solid

Analysis Batch: 626939

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Percent Solids	89.7		86.9		%		3	20
Percent Moisture	10.3		13.1	*	%		25	20

Lab Sample ID: 240-210962-A-8 DU

Matrix: Solid

Analysis Batch: 626939

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Percent Solids	93.1		93.5		%		0.4	20
Percent Moisture	6.9		6.5		%		5	20

QC Sample Results

Client: Roux Environmental Eng & Geology DPC
Project/Site: 2828 W 28th Street

Job ID: 460-311100-1

Method: Moisture - Percent Moisture (Continued)

Lab Sample ID: 240-210962-A-17 DU

Matrix: Solid

Analysis Batch: 626939

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Percent Solids	92.6		91.6		%		1	20
Percent Moisture	7.4		8.4		%		12	20

Lab Sample ID: 240-210965-A-5 DU

Matrix: Solid

Analysis Batch: 626939

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Percent Solids	82.5		73.6		%		11	20
Percent Moisture	17.5		26.4	*	%		41	20

Lab Sample ID: 240-210965-A-15 DU

Matrix: Solid

Analysis Batch: 626939

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Percent Solids	87.0		85.9		%		1	20
Percent Moisture	13.0		14.1		%		8	20

Lab Sample ID: 240-210967-A-6 DU

Matrix: Solid

Analysis Batch: 626939

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Percent Solids	94.8		94.6		%		0.2	20
Percent Moisture	5.2		5.4		%		4	20

Lab Sample ID: 240-210967-A-15 DU

Matrix: Solid

Analysis Batch: 626939

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Percent Solids	83.6		83.8		%		0.2	20
Percent Moisture	16.4		16.2		%		1	20

Lab Sample ID: 240-211109-A-3 DU

Matrix: Solid

Analysis Batch: 626939

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Percent Solids	96.9		97.1		%		0.2	20
Percent Moisture	3.1		2.9		%		8	20

Lab Sample ID: 240-211119-A-5 DU

Matrix: Solid

Analysis Batch: 626939

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Percent Solids	93.8		94.0		%		0.2	20
Percent Moisture	6.2		6.0		%		3	20

Eurofins Edison

QC Sample Results

Client: Roux Environmental Eng & Geology DPC
Project/Site: 2828 W 28th Street

Job ID: 460-311100-1

Method: Moisture - Percent Moisture

Lab Sample ID: 240-211119-A-14 DU

Matrix: Solid

Analysis Batch: 626939

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Percent Solids	95.4		95.8		%		0.4	20
Percent Moisture	4.6		4.2		%		10	20

Lab Sample ID: 240-211121-A-6 DU

Matrix: Solid

Analysis Batch: 626939

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Percent Solids	81.5		81.3		%		0.2	20
Percent Moisture	18.5		18.7		%		1	20

Lab Sample ID: 240-211124-D-2 DU

Matrix: Solid

Analysis Batch: 626939

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Percent Solids	95.2		98.4		%		3	20
Percent Moisture	4.8		1.6	*	%		98	20

Lab Sample ID: 240-211132-A-8 DU

Matrix: Solid

Analysis Batch: 626939

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Percent Solids	64.3		83.4	*	%		26	20
Percent Moisture	35.7		16.6	*	%		73	20

Lab Sample ID: 240-211139-D-7 DU

Matrix: Solid

Analysis Batch: 626939

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Percent Solids	82.8		82.4		%		0.4	20
Percent Moisture	17.2		17.6		%		2	20

Lab Sample ID: 240-211140-D-6 DU

Matrix: Solid

Analysis Batch: 626939

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Percent Solids	92.0		91.0		%		1	20
Percent Moisture	8.0		9.0		%		12	20

Lab Sample ID: 240-211166-A-1 DU

Matrix: Solid

Analysis Batch: 626939

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Percent Solids	86.8		90.6		%		4	20
Percent Moisture	13.2		9.4	*	%		34	20

Eurofins Edison

QC Sample Results

Client: Roux Environmental Eng & Geology DPC
Project/Site: 2828 W 28th Street

Job ID: 460-311100-1

Method: Moisture - Percent Moisture

Lab Sample ID: 240-211166-A-10 DU

Matrix: Solid

Analysis Batch: 626939

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Percent Solids	100		100		%		0	20
Percent Moisture	0.1	U	0.1	U	%		NC	20

Lab Sample ID: 240-211167-A-4 DU

Matrix: Solid

Analysis Batch: 626939

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Percent Solids	90.7		91.1		%		0.3	20
Percent Moisture	9.3		8.9		%		3	20

Lab Sample ID: 240-211168-A-11 DU

Matrix: Solid

Analysis Batch: 626939

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Percent Solids	99.9		99.9		%		0	20
Percent Moisture	0.1		0.1	U	%		NC	20

Lab Sample ID: 460-311100-1 DU

Matrix: Solid

Analysis Batch: 626939

Client Sample ID: RXSB-5_0-2_P

Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Percent Solids	92.7		92.6		%		0.1	20
Percent Moisture	7.3		7.4		%		1	20

QC Association Summary

Client: Roux Environmental Eng & Geology DPC
Project/Site: 2828 W 28th Street

Job ID: 460-311100-1

LCMS

Prep Batch: 626866

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-311100-1	RXSB-5_0-2_P	Total/NA	Solid	1633 Shake	
MB 240-626866/1-A	Method Blank	Total/NA	Solid	1633 Shake	
LCS 240-626866/3-A	Lab Control Sample	Total/NA	Solid	1633 Shake	
LLCS 240-626866/2-A	Lab Control Sample	Total/NA	Solid	1633 Shake	
460-311100-1 DU	RXSB-5_0-2_P	Total/NA	Solid	1633 Shake	

Prep Batch: 626896

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-311100-2	FB_09092024_P	Total/NA	Water	1633	
MB 240-626896/1-A	Method Blank	Total/NA	Water	1633	
LCS 240-626896/3-A	Lab Control Sample	Total/NA	Water	1633	
LLCS 240-626896/2-A	Lab Control Sample	Total/NA	Water	1633	

Analysis Batch: 626980

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-311100-2	FB_09092024_P	Total/NA	Water	1633	626896
MB 240-626896/1-A	Method Blank	Total/NA	Water	1633	626896
LCS 240-626896/3-A	Lab Control Sample	Total/NA	Water	1633	626896
LLCS 240-626896/2-A	Lab Control Sample	Total/NA	Water	1633	626896

Analysis Batch: 627004

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-311100-1	RXSB-5_0-2_P	Total/NA	Solid	1633	626866
MB 240-626866/1-A	Method Blank	Total/NA	Solid	1633	626866
LCS 240-626866/3-A	Lab Control Sample	Total/NA	Solid	1633	626866
LLCS 240-626866/2-A	Lab Control Sample	Total/NA	Solid	1633	626866
460-311100-1 DU	RXSB-5_0-2_P	Total/NA	Solid	1633	626866

General Chemistry

Analysis Batch: 626939

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-311100-1	RXSB-5_0-2_P	Total/NA	Solid	Moisture	
240-210962-A-2 DU	Duplicate	Total/NA	Solid	Moisture	
240-210962-A-8 DU	Duplicate	Total/NA	Solid	Moisture	
240-210962-A-17 DU	Duplicate	Total/NA	Solid	Moisture	
240-210965-A-5 DU	Duplicate	Total/NA	Solid	Moisture	
240-210965-A-15 DU	Duplicate	Total/NA	Solid	Moisture	
240-210967-A-6 DU	Duplicate	Total/NA	Solid	Moisture	
240-210967-A-15 DU	Duplicate	Total/NA	Solid	Moisture	
240-211109-A-3 DU	Duplicate	Total/NA	Solid	Moisture	
240-211119-A-5 DU	Duplicate	Total/NA	Solid	Moisture	
240-211119-A-14 DU	Duplicate	Total/NA	Solid	Moisture	
240-211121-A-6 DU	Duplicate	Total/NA	Solid	Moisture	
240-211124-D-2 DU	Duplicate	Total/NA	Solid	Moisture	
240-211132-A-8 DU	Duplicate	Total/NA	Solid	Moisture	
240-211139-D-7 DU	Duplicate	Total/NA	Solid	Moisture	
240-211140-D-6 DU	Duplicate	Total/NA	Solid	Moisture	
240-211166-A-1 DU	Duplicate	Total/NA	Solid	Moisture	
240-211166-A-10 DU	Duplicate	Total/NA	Solid	Moisture	
240-211167-A-4 DU	Duplicate	Total/NA	Solid	Moisture	

Eurofins Edison

QC Association Summary

Client: Roux Environmental Eng & Geology DPC
Project/Site: 2828 W 28th Street

Job ID: 460-311100-1

General Chemistry (Continued)

Analysis Batch: 626939 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-211168-A-11 DU	Duplicate	Total/NA	Solid	Moisture	
460-311100-1 DU	RXSB-5_0-2_P	Total/NA	Solid	Moisture	

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- 2
- 3
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- 13
- 14
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Lab Chronicle

Client: Roux Environmental Eng & Geology DPC
Project/Site: 2828 W 28th Street

Job ID: 460-311100-1

Client Sample ID: RXSB-5_0-2_P
Date Collected: 09/09/24 08:55
Date Received: 09/10/24 18:30

Lab Sample ID: 460-311100-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	626939	GZF4	EET CLE	09/13/24 18:25

Client Sample ID: RXSB-5_0-2_P
Date Collected: 09/09/24 08:55
Date Received: 09/10/24 18:30

Lab Sample ID: 460-311100-1
Matrix: Solid
Percent Solids: 92.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	1633 Shake			626866	CLB	EET CLE	09/12/24 17:38
Total/NA	Analysis	1633		1	627004	RMN	EET CLE	09/14/24 07:01

Client Sample ID: FB_09092024_P
Date Collected: 09/09/24 11:00
Date Received: 09/10/24 18:30

Lab Sample ID: 460-311100-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	1633			626896	JVB4	EET CLE	09/13/24 08:12
Total/NA	Analysis	1633		1	626980	LD	EET CLE	09/13/24 15:29

Laboratory References:

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: Roux Environmental Eng & Geology DPC
Project/Site: 2828 W 28th Street

Job ID: 460-311100-1

Laboratory: Eurofins Cleveland

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	2927	02-28-25
Georgia	State	4062	02-27-25
Illinois	NELAP	200004	08-31-25
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-27-25
Kentucky (WW)	State	KY98016	12-30-24
Minnesota	NELAP	039-999-348	12-31-24
New Jersey	NELAP	OH001	07-03-25
New York	NELAP	10975	04-02-25
Ohio VAP	State	ORELAP 4062	02-27-25
Oregon	NELAP	4062	02-27-25
Pennsylvania	NELAP	68-00340	08-31-25
Texas	NELAP	T104704517-22-19	08-31-25
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-24

Method Summary

Client: Roux Environmental Eng & Geology DPC
Project/Site: 2828 W 28th Street

Job ID: 460-311100-1

Method	Method Description	Protocol	Laboratory
1633	Per- and Polyfluoroalkyl Substances by LC/MS/MS	EPA	EET CLE
Moisture	Percent Moisture	EPA	EET CLE
1633	Solid-Phase Extraction (SPE)	EPA	EET CLE
1633 Shake	Shake Extraction with SPE	EPA	EET CLE

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Sample Summary

Client: Roux Environmental Eng & Geology DPC
Project/Site: 2828 W 28th Street

Job ID: 460-311100-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
460-311100-1	RXSB-5_0-2_P	Solid	09/09/24 08:55	09/10/24 18:30
460-311100-2	FB_09092024_P	Water	09/09/24 11:00	09/10/24 18:30

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- 14
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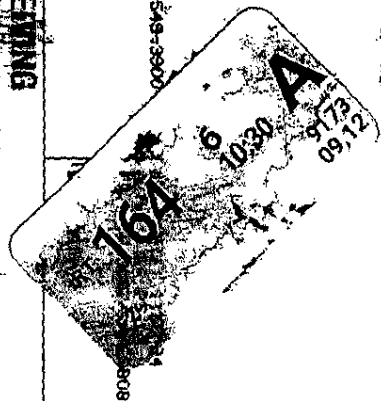
Eurofins - Cleveland Sample Receipt Form/Narrative		Login #	
Client <u>Eurofins Edison</u>		Site Name	
Cooler Received on <u>09/12/24</u>		Opened on <u>09/12/24</u>	
FedEx: 1 st Grd <u>Exp</u> UPS FAS Waypoint Client Drop Off Eurofins Courier Other		Cooler unpacked by: <u>JMOROSKO</u>	
Receipt After-hours Drop-off Date/Time		Storage Location	
Eurofins Cooler # <u>FC</u>		Foam Box	Client Cooler
Packing material used. Bubble Wrap		Foam	Plastic Bag
COOLANT <u>White</u> Blue Ice Dry Ice Water		None	Other
1 Cooler temperature upon receipt		☐ See Multiple Cooler Form	
IR GUN # <u>22</u> (CF <u>01</u> °C) Observed Cooler Temp. <u>13</u> °C Corrected Cooler Temp. <u>12</u> °C			
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity <u>1</u>		☒ Yes ☐ No	
-Were the seals on the outside of the cooler(s) signed & dated?		☒ Yes ☐ No	
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/McHg)?		☒ Yes ☐ No	
-Were tamper/custody seals intact and uncompromised?		☒ Yes ☐ No	
3 Shippers' packing slip attached to the cooler(s)?		☒ Yes ☐ No	
4. Did custody papers accompany the sample(s)?		☒ Yes ☐ No	
5 Were the custody papers relinquished & signed in the appropriate place?		☒ Yes ☐ No	
6. Was/were the person(s) who collected the samples clearly identified on the COC?		☒ Yes ☐ No	
7 Did all bottles arrive in good condition (Unbroken)?		☒ Yes ☐ No	
8 Could all bottle labels (ID/Date/Time) be reconciled with the COC?		☒ Yes ☐ No	
9 For each sample, does the COC specify preservatives (Y/N) # of containers (Y/N), and sample type of grab/comp (Y/N)?		☒ Yes ☐ No	
10 Were correct bottle(s) used for the test(s) indicated?		☒ Yes ☐ No	
11 Sufficient quantity received to perform indicated analyses?		☒ Yes ☐ No	
12. Are these work share samples and all listed on the COC?		☒ Yes ☐ No	
If Yes, Questions 13-17 have been checked at the originating laboratory			
13 Were all preserved sample(s) at the correct pH upon receipt?		☒ Yes ☐ No	
14 Were VOAs on the COC?		☒ Yes ☐ No	
15 Were air bubbles >6 mm in any VOA vials?  Larger than this.		☒ Yes ☐ No	
16 Was a VOA trip blank present in the cooler(s)? Trip Blank Lot #		☒ Yes ☐ No	
17 Was a LL Hg or Mc Hg trip blank present?		☒ Yes ☐ No	
Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other			
Concerning _____			
18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page		Samples processed by: _____	
19. SAMPLE CONDITION			
Sample(s) _____ were received after the recommended holding time had expired.			
Sample(s) _____ were received in a broken container			
Sample(s) _____ were received with bubble >6 mm in diameter (Notify PM)			
20. SAMPLE PRESERVATION			
Sample(s) _____ were further preserved in the laboratory			
Time preserved. _____ Preservative(s) added/Lot number(s): _____			
VOA Sample Preservation - Date/Time VOAs Frozen. _____			

Tests that are not checked for pH by Receiving:
VOAs
Oil and Grease
TOC

pH Strip Lot# HCA42471

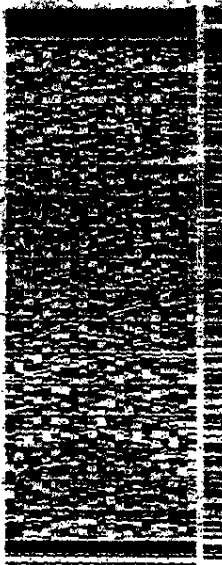
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Part # 150468-434 MTRV EXP 04/25 22



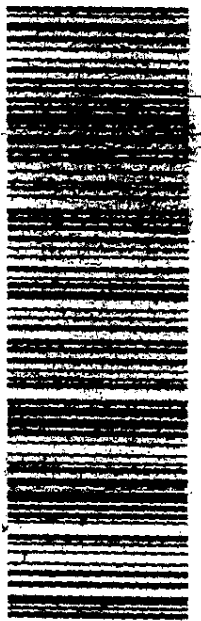
SHIPPING RECEIPT
EUROFINS ENVIRONMENT TESTING NORTH
100 S. VAN BUREN AVENUE

BARBERTON OH 44203
TEL: 440-366-1866



THU - 12 SEP 10:30A
PRIORITY OVERNIGHT

NX CKA
44203
OH-US CLE



Login Sample Receipt Checklist

Client: Roux Environmental Eng & Geology DPC

Job Number: 460-311100-1

Login Number: 311100

List Source: Eurofins Edison

List Number: 1

Creator: Thundathorn, Sukanan 1

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
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	
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 $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	